HYGEIA



JANUARY • 1942 • 25c

The Health Magazine of the American Medical Association

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Beyond the Horizon . . .

His little world of home, and school, and playground will grow bigger as the years go by. Some day, he dreams, he will see beyond the horizon . . . he will be a part of that larger world, a man full grown.

But will his world be as big as his dreams? Or will his horizon be cruelly limited . . . his future handicapped by poor eyesight?

Be sure *your* child has the priceless advantage of normal vision. *Have his eyes examined* . . . not just once, but regularly as he grows older! Only through scientific examination will you be assured that he is seeing properly, his eyes normal.

It is so important to him, as a growing, learning child . . . and to you, as a modern parent!

WHAT ARE SOFT-LITE LENSES?

Soft-Lite Lenses are scientifically designed to control the amount of light which reaches the eye, without altering color or visual sharpness. They neutralize glare, absorb excess light, protect eyes against eyestrain and fatigue. Soft-Lite Lenses are flesh-toned and are ground to individual prescriptions. They are prescribed for children as well as adults.

There is only one Soft-Lite—identified by this certificate.



Soft-Lite Lenses

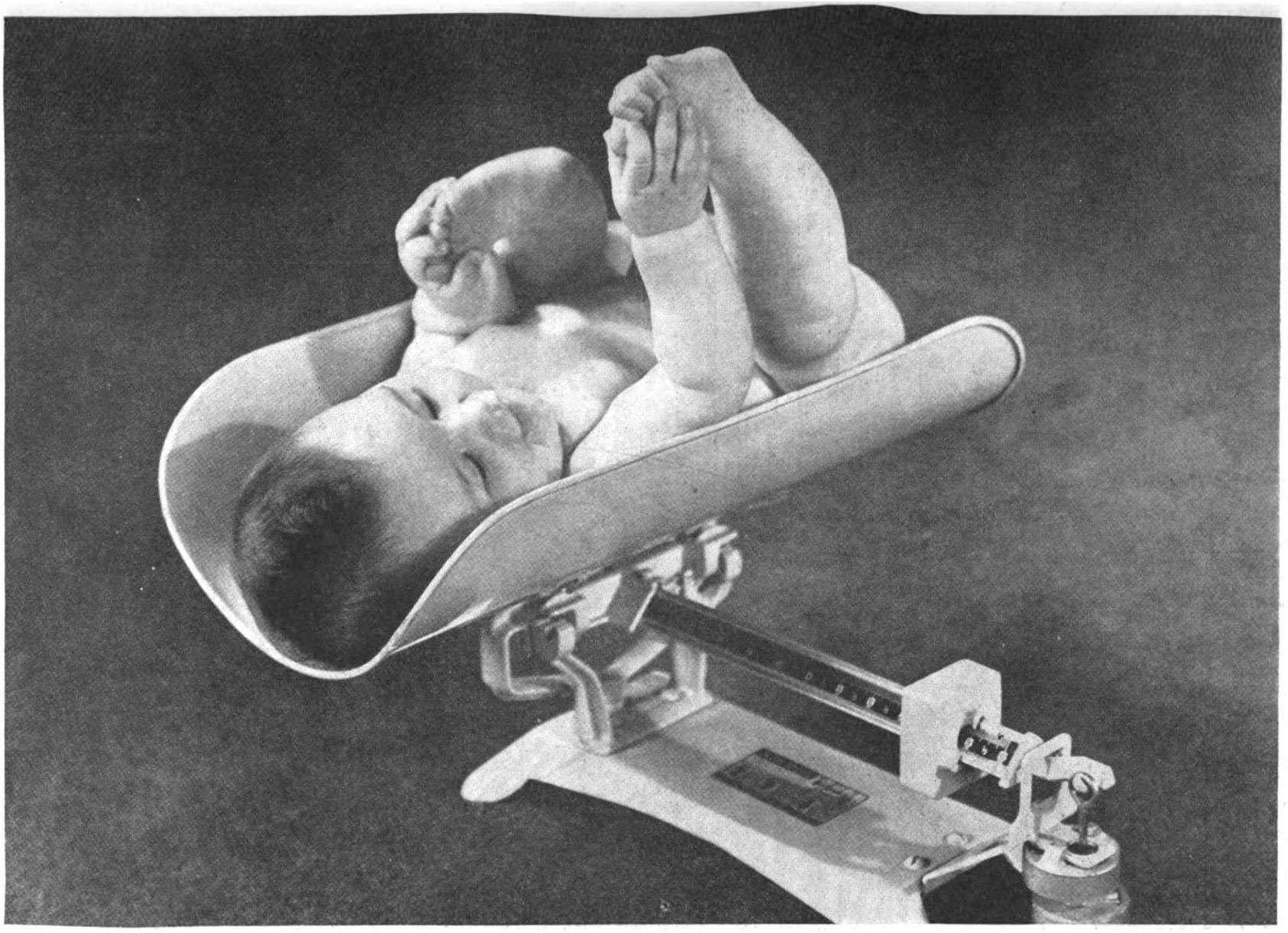
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BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

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FORECAST

Shuddering at the horrors of far-off wars, Americans congratulate themselves on being safe in their own homes, forgetting that in one year home accidents have killed 33,000 persons, permanently disabled 140,000 more and injured nearly 5,000,000! Outstanding defense work against these tragic disasters in our midst has been accomplished by the Children's Bureau of Kansas City.

Kansas City's ten point defense program is described in "Home Defense Against Accidents" by R. L. Lee, appearing in HYGEIA for February.

When a man applies for a job he is usually required to answer a few questions about his age, his birthplace, his experience and his nearest relatives. These routine inquiries do not begin to give either the applicant or the employer a genuine insight into the kind of work to be performed or the fitness of the man for the job. Yet it is important for a man's own sake that he be kept out of a job which doesn't suit him, and even more important that he be placed where he can be efficient and happy.

Madelin Blitzstein tells how these results can be achieved in "Job Testing."

Pain in the region of the eye, redness, a rainbow "halo" around lights, headache, tears—these may be the danger signals preceding a sudden attack of glaucoma, or hardening of the eye, a disease which has been recognized by physicians since the time of Hippocrates.

The diagnosis and treatment of glaucoma are discussed authoritatively by Arthur A. Knapp, M.D., in "Glaucoma."

Are you one of those who dislike the thought of walking when a car, bus or other vehicle is available? Do you studiously avoid having to exercise your feet at every opportunity—are you a member of the "ride, don't walk" clan?

If you are, you don't know what you're missing, but you can find out by reading "Walk Your Way to Health" by Eugene A. Conklin, M.D.

Emotional stress, physical strain or prolonged, fatiguing effort may damage the heart irreparably, particularly when physiologic changes not uncommon in persons of middle age have taxed the capacity of the coronary vessels to carry sufficient blood to the heart muscle.

We must use our heads to conserve our hearts, according to Oswald P. J. Falk, M.D., who emphasizes the importance of balanced living in "Healthy Hearts for the Middle Aged."

HYGEIA

THE HEALTH MAGAZINE

535 N. DEARBORN ST., CHICAGO, ILL.

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Unsolicited manuscripts will be considered by the Editor but must be accompanied by a stamped self addressed envelop to insure return if rejected. Manuscripts should be typewritten, double-spaced, and the original, not the carbon copy submitted. All rights reserved.

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Baby's teeth are there before you see them!

His teeth begin to form in the jaw five or six months before he's born! Since the first teeth ordinarily do not appear until he's five or six months old, they may have been growing a whole year before you see them. But to help build them soundly, he needs plenty of Vitamin D. See that he gets it regularly. Start him early on Squibb Cod Liver Oil.

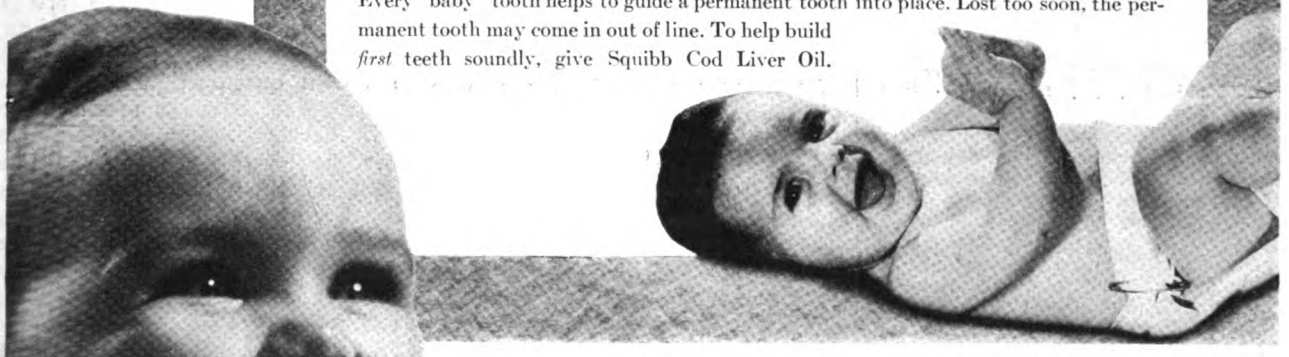


how to help him build teeth soundly

In addition to a well-balanced diet, your baby must have one special factor—Vitamin D—to help him transform into sound tooth structure the calcium and phosphorus he gets from his food. Help your baby build his teeth soundly! Every single day, give him Squibb Cod Liver Oil.

why his first teeth are important

Baby needs them to chew his food properly, to help mouth and jaw develop correctly. Every "baby" tooth helps to guide a permanent tooth into place. Lost too soon, the permanent tooth may come in out of line. To help build *first* teeth soundly, give Squibb Cod Liver Oil.





RELY ON THIS SEAL.....

It's the vitamins in cod liver oil that you pay for. It's the vitamins that benefit your baby. When you choose Squibb Cod Liver Oil you know the vitamin content is reliable. Each teaspoonful supplies more than twice as many units of Vitamins A and D as a cod liver oil which meets the minimum requirements of the U. S. Pharmacopeia. Look for the Squibb seal. Let it guide you to extra vitamins for your baby. Ask for Squibb Cod Liver Oil at any drug store.... *The priceless ingredient of every product is the honor and integrity of its maker.*

SQUIBB COD LIVER OIL

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"The Adcomber"

looks at Hygeia ads

"What can't be cured" *can be* concealed, says Max Factor, in a practical statement about baldness on page 58. Interesting pictured evidence too, you'll find.

• • •

WINTER, A Poem
Lots of fun,
But short on sun . . .

The moral—give the youngsters *extra* Vitamin D—the "sunshine" vitamin in Irradiated Evaporated Milk. Economical . . . many uses . . . a *regular* source of Vitamin D! See page 51.

• • •

AMAZING . . . but—A child's future—your child's future—may be bounded by his eyesight. There's a practical way to help your child to that priceless advantage—normal vision . . . so important to the child . . . and to you! (Inside front cover.)

• • •

Do the folks at your house get their vitamins out of capsules or kettles? Much of the natural vitamin content of vegetables and meats can be conserved by the use of Triplex Stainless Steel Ware. This "Lifetime" cookware with triple-thick bottoms saves you time . . . money . . . food values. Page 45.

• • •

Will this winter catch you napping? Your skin roughening and chapping? No, indeed—if you heed Nivea's timely hint, page 66.

• • •

Health harbor for thousands — cool in summer's heat . . . free from winter's rigors . . . Albuquerque invites you this season . . . every season! There's more about the well-rounded life of this attractive city in the illustrated booklet available to you, page 60.

• • •

Besides all the old reasons for "an apple a day," modern science has discovered some important new ones. And when you come to WASHINGTON STATE APPLES, there's still a better reason: crispness, juice, luscious flavor. . . . Free booklet for the asking, page 55.

• • •

"My dear, a bargain!"

But seriously, if you'd be interested in a complexion "clean-up," you'll find an important little coupon on page 6 offering a real bargain. Better look now!

• • •

If five cents will buy a plump full pound package of high quality bicarb — for cooking or for medicinal purposes — WHY NOT? Try "DIAL Baking Soda." (Page 52.)

THE ADCOMBER

Who's Who IN HYGEIA

About three years ago, JULIETTA K. ARTHUR, who takes Bridget to the Doctor on page 18, gave up her weekly pay check for the glories and hazards of free-lance authoring. It took time and nerve, she says, to make the decision, but her articles have been appearing ever since in the *American Home* magazine, nursing journals and other periodicals, indicating that the hazards never caught up with the glories. Before she took up authoring as a full time occupation, Miss Arthur did editorial and publicity work, first for the Society for Experimental Biology and Medicine and later for various other organizations, mostly in social work.

Following her education at the University of Oklahoma and graduate work at the University of Chicago, Miss Arthur, a native Texan, went to New York to break into the social work profession. She picked six names from a directory of welfare organizations, wrote to all of them and promptly landed a job with one. That and other social work jobs—and her writing—have kept her busy for the past fifteen years and have taken her as far afield as Damascus, Istanbul and Egypt. Her principal interest as a writer has been in health subjects, most of her published articles having been on medical, nursing or public health subjects. "Bridget Goes to the Doctor," in this issue, concerns all three.

DOUGLAS A. THOM, M.D., is following a lifetime interest when he writes on "Civilian Morale in War," starting on page 40. He served abroad during the last war and devoted particular attention to the study of war neuroses. His work was responsible for the organization and development of the Habit Clinic for Child Guidance in Boston, the first organized clinics interested in the mental health of the pre-school child. Dr. Thom continues to serve the Habit Clinic as its Director.

Dr. Thom is president of the Massachusetts Society for Mental Hygiene, past president of the Massachusetts Psychiatric Society, and a member of regional, national and world-wide associations in the fields of psychiatry and neurology. He was graduated from the University of Vermont College of Medicine in 1912, after which he specialized in pathology until wartime awakened his interest in psychiatry. He is now Professor of Psychiatry at the School of Medicine of Tufts College, in Boston.

COLONEL LEONARD G. ROWNTREE, M.D., who asks "Is Your Son Fit for Service?" (page 38) is probably better prepared than any one else in the country to answer his own question; he is Chief of the Medical Division of the Selective Service System. In civilian life, he has been Director of the Philadelphia Institute for Medical Research and research clinician at the Philadelphia General Hospital since 1932. These are the latest of a succession of major professional responsibilities covering a period of 35 years. He was a member of the faculty of the Johns Hopkins Medical School at Baltimore for 10 years, professor of medicine and chief of the department at the University of Minnesota for 4, director of clinical investigation and senior medical consultant at the Mayo Clinic, Rochester, Minn., from 1920 to 1932.

During his professional career Colonel Rowntree has originated several clinical laboratory tests having to do with the functioning of the kidney and liver and changes in the blood, introduced the dye method of determining the blood

(Continued on page 58)

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YOUR BEAUTY can smile at Winter!



Do as Doctors advise: give your skin "baby-care"

Let the World's Loveliest Complexion—baby's own—show you how to care for *your* skin through drying winter weather, heated rooms.

Advised for years by doctors, Ivory Soap today actually gives you *new mildness! Extra gentleness!* Yes, New "Velvet-Suds" Ivory gives your skin gentler care than 10 leading toilet soaps! Give *your* beauty the benefit of gentle Ivory's daily care.

"Baby-care" is Beauty-care

Despite the weather
YOUR SKIN CAN BE LOVELIER

Follow these 4 Beauty Tips

1. *Don't use* hot water on your face. It has a drying effect. *Lukewarm* Ivory "velvet-suds" are best for true beauty cleansing. And *no* icy rinses, unless your skin is oily.

2. *Use a super-mild soap.* New Ivory is actually *milder* than 10 leading toilet soaps. And notice: *no* dyes, medication, or strong perfumes that might be irritating!

3. Protect your skin, when you go out, with foundation cream and powder. But use them *only* on a "baby-clean" face—cleansed with gentle Ivory!

4. *For weather-dried skins,* massage with a *lukewarm* lather of gentle New Ivory, using fingertips only. Rinse. Pat dry. Since your skin lacks sufficient oil, apply lightly a little cold cream.



99 44/100 % PURE

TRADEMARK REG. U. S. PAT. OFF.
PROCTER & GAMBLE

New "Velvet-suds" IVORY SOAP

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THEN, for good-looks' sake, write this on the top line:

Pull out of this hit-or-miss cosmetic muddle. Get myself a supply of wholesome, harmonized beauty necessities and—give the old face a new chance!

Marcelle hypo-allergenic Cosmetics will help you put this praiseworthy project into effect...aid in soothing harassed skin areas with purest cleansing and lubricating creams...dress your complexion in fresh, natural toned powder and color accents... help build a foundation for beauty and keep you lovely!

And "how firm a foundation" Marcelle Cosmetics do help to build! Free of known irritants, they are recognized by doctors and their patients the country over...advertised in medical journals...formulas supplied to doctors anywhere.

You can try a week's supply of these wholesome cosmetics for a dime. Mail ten cents with the coupon below and get your sample kit of: Marcelle hypo-allergenic Cleansing Cream, Skin Lubricating Cream, Face Powder, Rouge and Lipstick.

P.S. Why wait for January first? DO IT NOW!



1741 N. Western Ave., Chicago, Ill.

Please send me the five sample beauty aids. I enclose 10c.

Blonde..... Brunette..... Auburn.....

NAME.....H-1-42

ADDRESS.....

LETTERS FROM *Readers*

Answering Anti-Vivisectionists

To the Editor:

I have arranged excerpts from your editorial on "Sabotage of Science" in the September HYGEIA and the article "Test Tube Triumphs" in HYGEIA last April; these are to be printed in leaflet form to be distributed in an effort to answer anti-vivisectionists. The project has been approved by one of Seattle's foremost surgeons, and 2,000 copies have been ordered to be distributed in legislatures, in Congress, and wherever we think they may do the most good.

Do you object to my use of the articles in this manner and for that purpose?

HELEN IRWIN BITZER

Seattle, Wash.

We are delighted that the articles published in HYGEIA *are being used in this manner.*—ED.

More on Preschool Sex Education

To the Editor:

I didn't know Puritans still existed. I was very shocked to read the letter from our friend in Maplewood, N. J. (*questioning the wisdom of the* HYGEIA *article on sex education for preschool children.*—ED.). I read the same article and thought that the authors had no intention of instructing preschool children in the whys and wherefores of menstruation or married sexual life.

A wise mother will talk to her children and so instruct them that they will come to her with all their problems and not gather in groups at school for gossip. If parents try to guide a child of any age away from sex talks in the family, it will force the children to find out elsewhere—which might be some place worse than the schoolyard. Mother and Dad had better read before the child brings the questions, because a "put off" question arouses suspicion. I'm a college graduate with a year of graduate work in psychology, and many with whom I have had to work are the result of twisted, bewildered, misguided parents.

Heaven help the parent who is incompetent in the sexual guidance of her children, and God help the children! Those who have "missed the bus" should immediately seek a good source of information—a physician, psychiatrist or spiritual advisor, so that their children need not suffer.

LOVETRA JANE HOBBS

Kackley, Kan.

Health Facts and Hygiene

To the Editor:

We are organizing a course in Health Facts and Hygiene for the group of employees here on the campus which includes food handlers, maids, etc., and will use HYGEIA as supplementary reading material. Could you suggest other publications of suitable material that could be used in teaching such a lay group?

DOROTHY H. HADLEY

Bryn Mawr College, Pa.

A catalogue of pertinent publications of the American Medical Association has been forwarded and is available for similar requests. —ED.

From an Old Friend

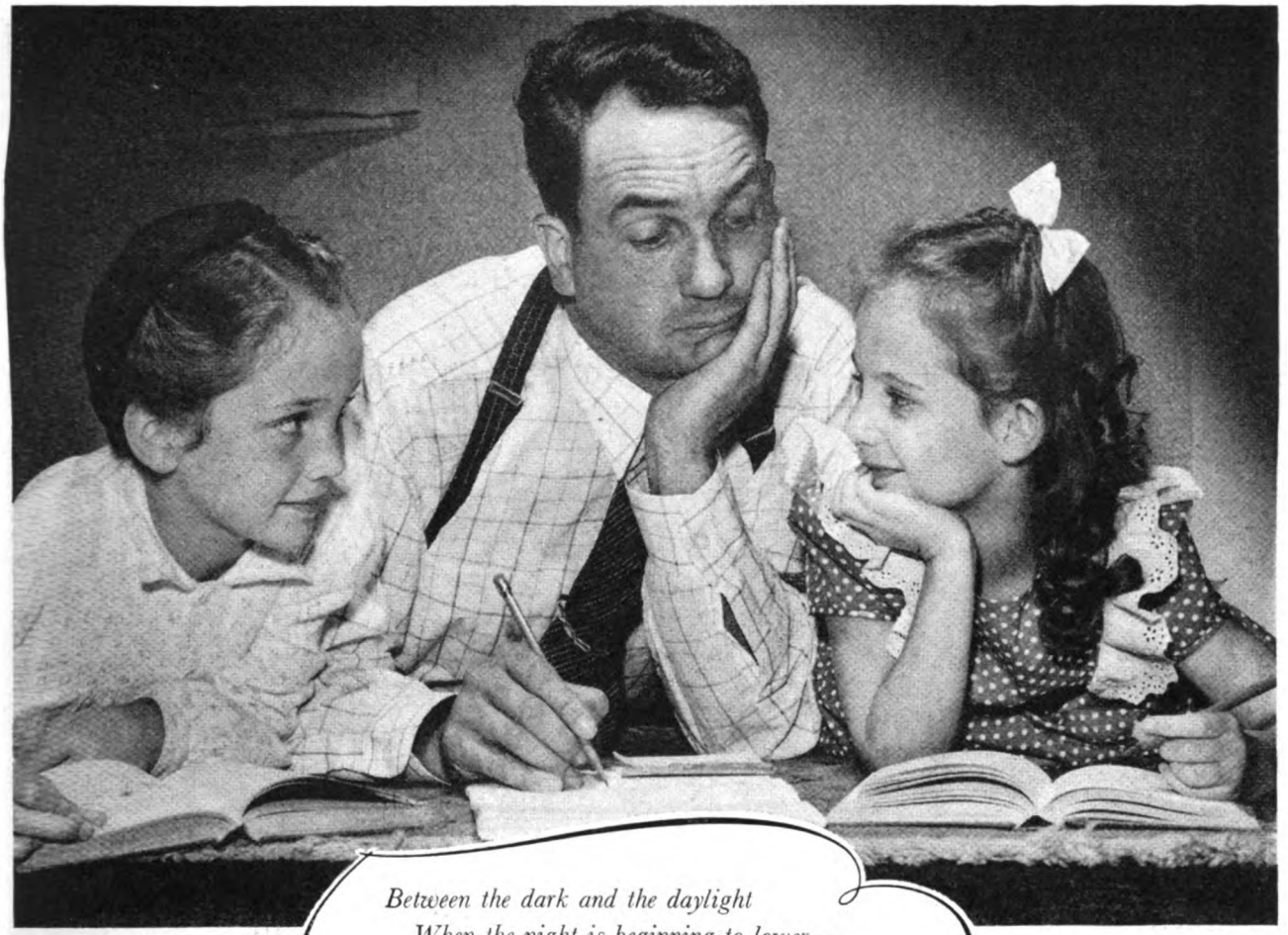
To the Editor:

Ten years ago, when I was in high school, I subscribed to HYGEIA and found it an excellent magazine. Today I have a baby and I believe the magazine would prove very helpful to me in caring for and training him. I should appreciate information about current subscriptions.

MRS. D. J. LUCKHURST

Jackson Heights, L. I.

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Between the dark and the daylight
When the night is beginning to lower—
Comes a pause in the day's occupations
That is known as the Children's Hour . . .

HENRY W. LONGFELLOW

THE ALIBI HOUR . . .

BRIGHT youngsters like these sometimes grin at each other and call it the "alibi hour."

But the Science of Seeing calls it the "critical hour"!

Critical because young eyes and young minds are busy getting ready for tomorrow . . . critical, too, for older eyes that must be kept fit for today's tasks in defense. They all need the protection of good light.

Good lighting reduces the physical work of seeing; conserves precious energy for the whole family. (Perhaps you never knew that reading, sewing or studying under poor light can be as tiring, physically, as digging a ditch.)

Good lighting is also potent defense against the dangers of eyestrain. Remember one out of five children of grade school age and 3 out of 5 grown-ups already suffer from the handicap of defective eyesight.

Play safe. Here's a helpful suggestion that is simple, quick and inexpensive. Put a 100-watt General Electric MAZDA lamp bulb in a modern I.E.S. study lamp and place it where children do homework. Tomorrow belongs to them. It is their day. Tonight is your responsibility . . . for them and the whole family.

Eyesight is priceless..guard it well

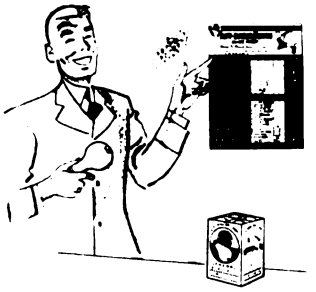
G-E MAZDA LAMPS

GENERAL ELECTRIC

MAKE SURE OF TWO THINGS
to protect your family's eyes

The right size lamp bulbs in every socket. Your G-E dealer has a handy chart that will help you choose RIGHT.

The right kind...say "G-E MAZDA" . . . and get bulbs made to stay brighter longer!



75 and 100-watt	15¢
40, 50, 60-watt	13¢
7½, 15, 25-watt	10¢
3-lite 100-200-300-watt	55¢

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Andre de Dienes

Winter vacations — with their opportunity for healthful, invigorating exercise in the open air — are becoming more and more popular in the United States. This month, our snow-covered hills and slopes are filled with thousands of vacationing, health-seeking ski enthusiasts.

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REST

An Essential in the Good Health Program

THE COVER of HYGEIA for this month suggests rest. Subsequent covers during 1942 will emphasize other essentials in a well rounded health program. Of all the hygienic procedures suggested in the ancient Biblical sanitary code rest was most important--perhaps even more significant than cleanliness.

The child today is constantly stimulated not only by the increasing amount of information that it is compelled to absorb in school, but also by the outside activities--dances, parties, games, movies, comic strips, radio, lessons in piano playing, foreign languages, clarinet, and golf.

All of us are living at a speed much greater than that at which human beings have lived in any previous generation. We become tired, indeed exhausted, by the intensity of our living. The person who is overtired fails to sleep well. As the exhausted worker tries to sleep he worries. Among other causes of fatigue and exhaustion such mental factors as worry, monotony and irritation are listed. The problem of fatigue means a study of both physical and mental fatigue. Irritability often leads to fatigue. Business men are more inclined to become angry in the afternoon than early in the morning. By far the greatest number of accidents occur to workers after four o'clock in the afternoon. When we are fatigued we magnify trifles. It is not safe to make important decisions when one is tired.

Much depends on individual temperament and training. Some people simply refuse to worry, to become angry or irritated. Those who can keep calm are much less likely to show fatigue and its effects than those who are temperamentally on the edge of an upset most of the time.

The human body at rest has lowered functions. The blood pressure is lower, the basal metabolism less, the heart beats more slowly. Indeed it might well be said that the program for long life includes a low pulse rate, a low blood pressure, a low metabolism, a low diet and a low threshold for the sense of humor. To this add plenty of rest--rest in bed, mental rest, rest in chairs. The worker, the housewife, the business man, the teacher, the statesman—all may gain by utilizing for complete rest even a few minutes at noon or before dinner in the evening.

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Health at the Crossroads

Families today want assurance that the ordinary risks to health are being discovered and eliminated by well trained doctors, nurses and engineers. Horse-and-buggy health departments no longer solve public problems

By MATTHEW R. KINDE

DEMOCRACY really works if you work it. This has been demonstrated in seven counties in southwestern Michigan by the people of the counties, with the assistance of the W. K. Kellogg Foundation. Here is how it is done.

These people recognized the need for better health organization and asked the Foundation to help them establish modern county health departments. The families of today want reasonable assurance that the ordinary hazards to health are being discovered and eliminated by well-trained doctors, nurses and engineers, and they realize that horse-and-buggy health departments no longer meet the growing need for solving community health problems. The first essential of a modern county health program is a health department organized on a county-wide basis with full time, well-trained professional personnel.

Health Director—

The modern health department is directed by a doctor of medicine. Whenever possible, such a director should have special training and experience in diagnosing and treating the ills of the community. This means at least a year's special training after fulfilling the educational requirements for medical practice. This year is spent in a school of public health where he is taught to think in terms of communities and groups of people instead of in terms of the individual patient. His major problem is to determine the health needs of the area for which he is responsible, and he begins by examining the health situation in his county in much the same manner as the family physician examines a patient.

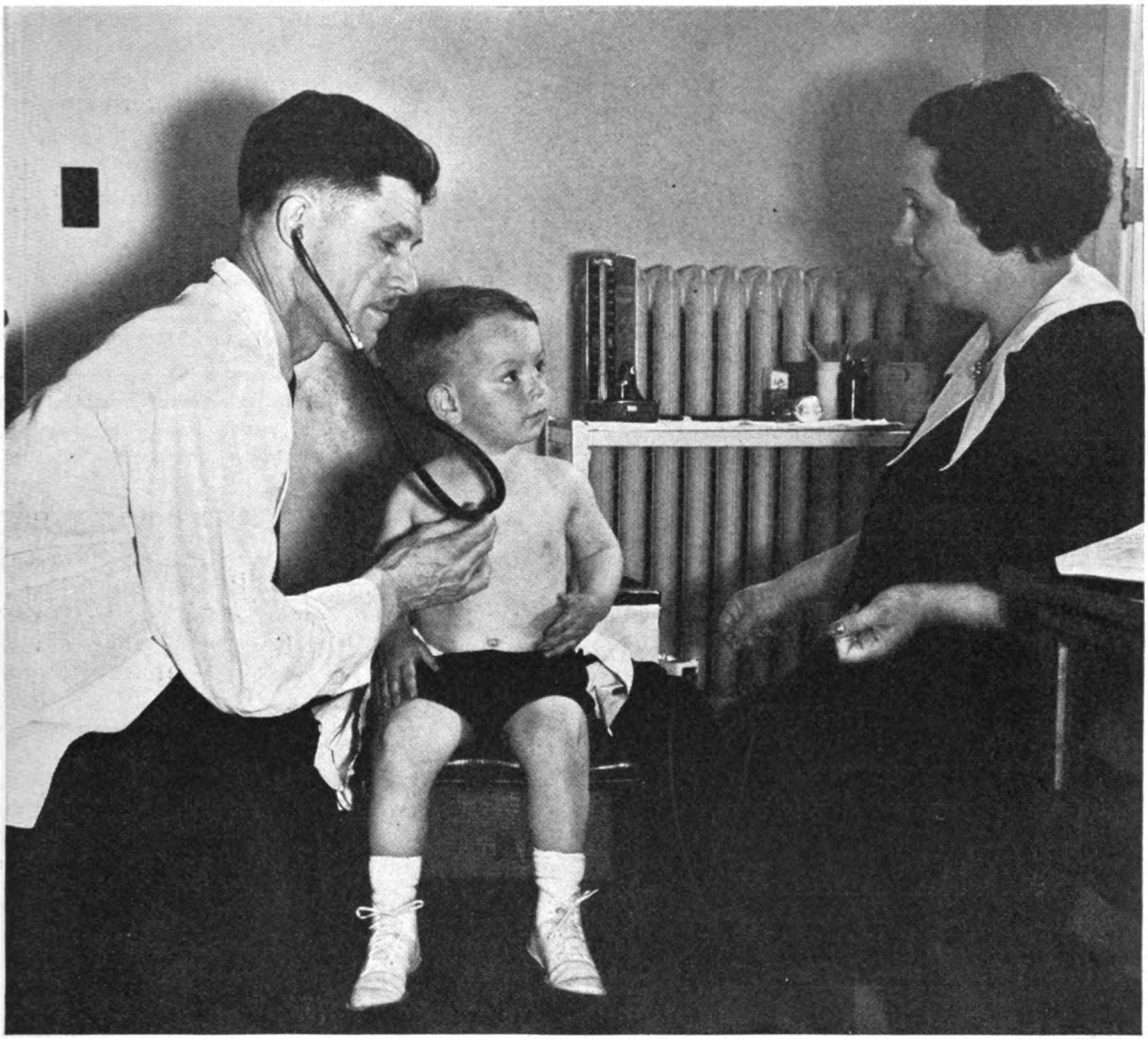
He directs the activities of the health department staff and is responsible to the county government. His job is to find the health problems of his county, to direct a program to solve them and to evaluate the effort made.

Problems are discovered in two ways. First, by studying health records of families and individual persons. Figures on births, causes of death and prevalence of sickness are analyzed by the health department, and the health history of the population is determined. Among the problems discovered by this method may be, for example, the need for a more intensive tuberculosis control program, correction of more physical defects, more prenatal care by physicians, more diphtheria immunizations, or perhaps better laboratory facilities for the care of diabetes. Many problems present themselves, and the health director selects the most urgent of these to attack first.

The second way, and the one more recently emphasized, especially in the counties assisted by the Foundation, is a recognition by the health director that problems can be solved only by the people themselves. He finds that many community groups are also studying the health needs of the area, and that he can make more progress by helping them solve their own problems. Through this second approach the health director has become a user of community resources and a coordinator of community effort.

The counties in southwestern Michigan have capitalized on this viewpoint to bring the community group effort to point toward the same goal. The people have found that through mutual effort toward promoting better communities the program moves faster. They have found that the methods of democracy have real possibilities when they are by the people as well as for the people. Opportunities for leadership and satisfying results abound in areas with this point of view. Once the problems are clearly defined, the groups formulate

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The family doctor includes periodic medical examinations for healthy children. His work with families in his practice is vital to the community health program.

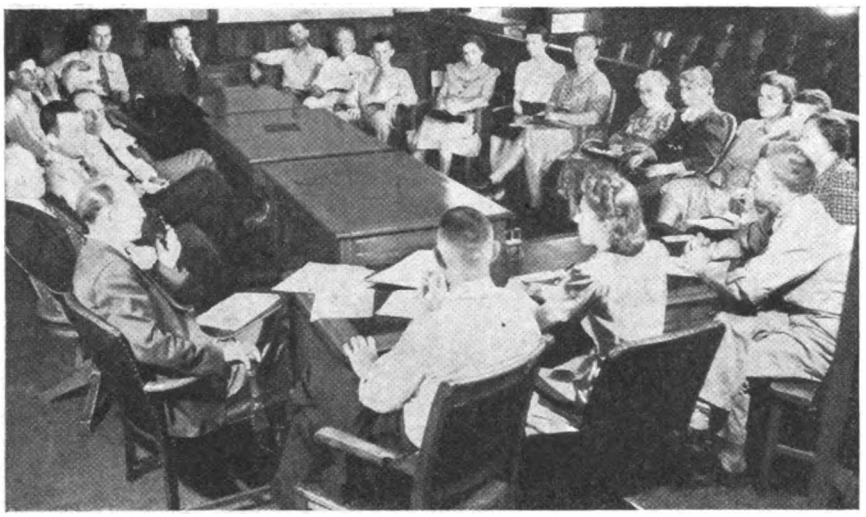
methods of attacking them. They muster the available community resources and, under the leadership of the county health director, assign responsibilities and initiate the procedures necessary for their solution.

The Family Doctor—

The family doctor assumes an important role in this type of program. He becomes responsible for more than the treatment of the sick. Through his medical society he becomes a program builder, and as an individual physician he applies modern preventive medical procedures to the people in his practice. He sees that his patients receive more adequate prenatal care and that the children in his practice receive more medical supervision. He includes periodic medical examinations for healthy children as well as diphtheria inoculations and smallpox vaccinations.

A committee of physicians from the counties developed a medical record system to be used in the doctor's office. The system provides for a continuous health record from the birth of the child throughout his school life. It also includes records for supervision of maternity and general medical patients, as well as a plan for notifying parents by postal cards when to

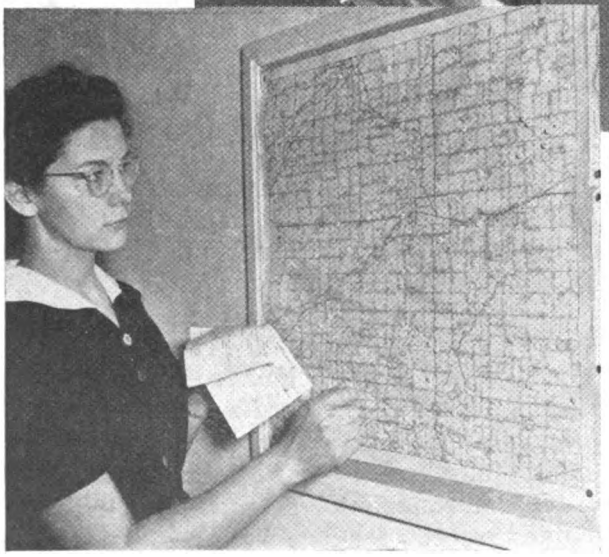
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Many community groups are studying the health needs of the area. The health director helps them to solve their own community problems (left).

The modern health department is under the direction of a medical man with special training in diagnosing and treating community "ailments."





There may be one public health nurse for every two to five thousand people in the county — each nurse has her district.

bring children to the doctor's office for preventive medical procedures. This committee has also formulated standards for the preventive services which the physician renders in his office.

The efforts of the physicians in these Michigan counties have led to the establishment of better hospital, laboratory and x-ray facilities. Through the medical societies they have worked closely with the county health departments in developing medical postgraduate programs which emphasize the use of medical facilities in the community. Training courses include methods of keeping people well. The

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Instructing a mother in the proper home care of a child with infectious disease (above). The nurse is trained in helping with family, school and community health problems. She plans her work after studying family health records for her district, making home calls accordingly.



doctors and health departments have worked out successful tuberculosis and venereal disease control programs. All preventive procedures are done in the office of the physician of the patient's own choice. There are no clinics.

Other Groups—

Hospital administrators from several counties have formed a group to discuss hospital problems. Courses of instruction for hospital personnel and boards of trustees have been held. There has been a trend toward expanding the services rendered by hospitals to the

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Nurse preparing sanitary equipment for home delivery.

Public Health Nurse at Work

Longest arm of the county health department is the public health nurse, who is acquainted with families and familiar with health conditions in her district. Typical day for the public health nurse may include all the duties shown here.



Demonstrating effective methods of bathing the baby.



Seeing that doctor's instructions are carried out.



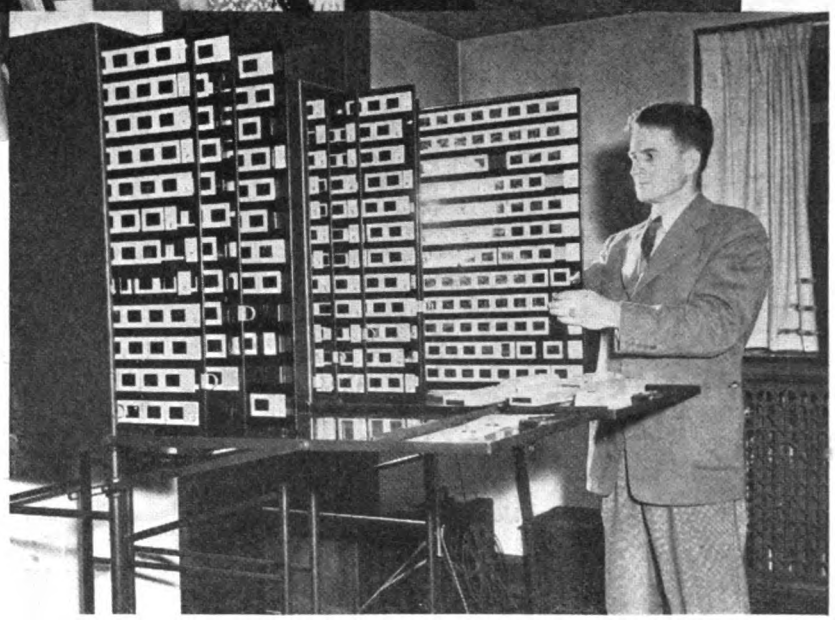
Several visits are made during the preschool years.



Routine tests by a nurse may save a doctor's call.

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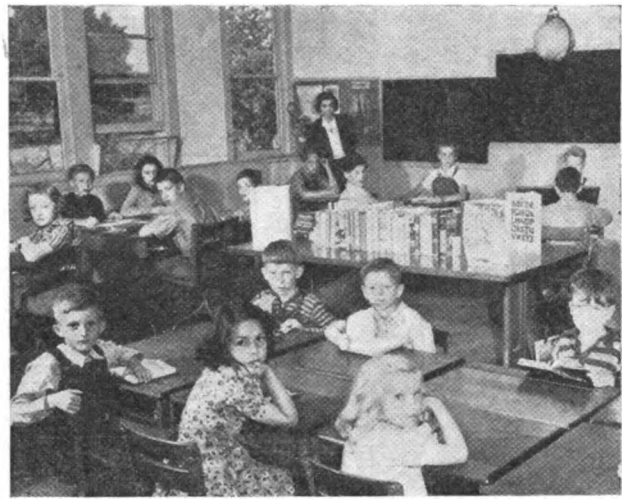
Motion pictures on health subjects are presented before interested groups in an effort to stimulate constructive action to meet health needs (above). The health department keeps a file of slide films for similar group meetings. It is felt that more progress can be made by thus helping each county to help itself than merely by seeing that health laws are obeyed. Both methods are needed to make certain the county has proper care.

homes of the patients. A home maternity nursing service has been developed, and clinical and x-ray laboratory services have been made available in the homes of patients. The medical society, hospital board and health department cooperate in improving hospital standards of medical and nursing care.

The dentists in these counties have taken the responsibility for a preventive dental program. They felt that education of the patient was of major importance and that preventive dentistry should begin with regular dental care of the child at the age of 2 years. Dental x-rays are made of each child as part of the examination. The work is done in the private office of the dentist. All the dentists have taken special postgraduate work in children's dentistry. They have shown that the way to lower dental bills is to start dental care early in childhood, see the dentist regularly and follow his advice.

The school teachers have also found that there is an advantage to the group approach to problems. They have developed several kinds of organizations. Some counties have formed county schoolmasters' clubs, and many rural teachers have formed township teachers' clubs. Teacher-training programs have resulted, in which as many as half the rural teachers have spent the summer in "workshops" in the counties. A "workshop" is a training school in

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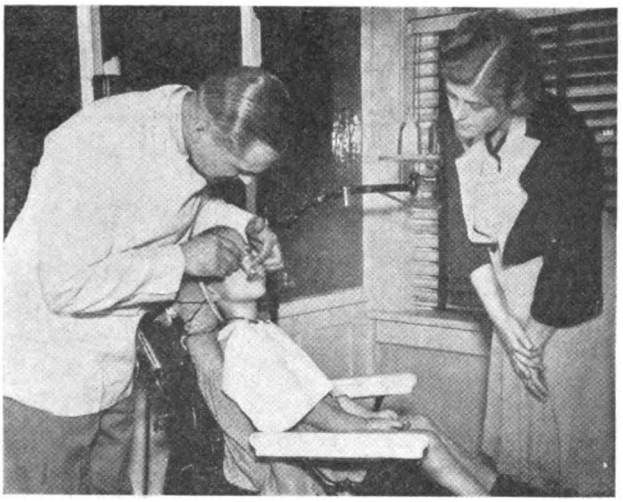
Modern schools are essential to community health.



School children are taught healthy eating habits.



Rural schools may provide healthful experiences.



Regular dental examinations should begin early.



Health department inspectors examine food sources.



Food handling in public eating places is inspected.

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which the teachers study community resources for the education of the child.

√ As a result of special training they had had in short courses at various universities, school boards began to look into the condition of their own school plants. They felt that the one-room rural school could offer a real opportunity for providing healthful experiences for children. They saw the need for having adequate lighting, modern seating, running water, inside toilets, a modern heating plant, hot lunch equipment, a modern record system and a general modernization program.

With the health department they pooled their ideas and made plans on a county-wide basis to have all school plants meet minimum health standards. They became interested in the school library and purchased new books for the children. Many boards purchased such modern innovations as radios. They developed cooperative purchase plans and pooled their orders for equipment. They made sure of the safety of their installations by consulting the engineer of the county health department. The school project has shown what can be accomplished through round-table discussion and the application of the principles of democracy.

Many counties had small libraries serving single communities. Librarians soon discovered that there were advantages in discussing problems with other librarians. Round-table discussions resulted in a general training program, and several county-wide "book fairs" were held at which hundreds of parents visited book displays. Teachers brought their pupils to the "fair," and many nationally-known library people were present to talk about books and stories and their use by the child. Yes, democracy really works if you work it.

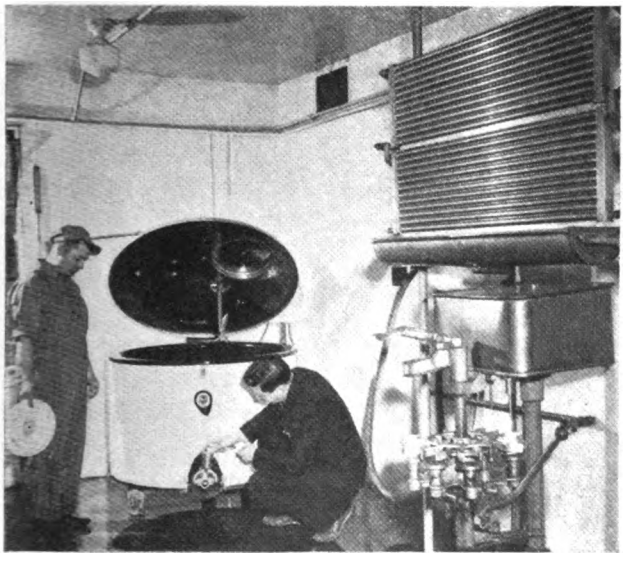
In a similar way the plumbers, ministers, school janitors, government employees, pasteurization plant operators, food handlers and other groups have attended short training courses to improve their work. In each case the course resulted from group meetings in which a problem was discovered and some one in the group had an idea of a way to solve it.

Public Health Nurse—

The largest part of the health department staff is made up of public health nurses. There may be one nurse for each two to five thousand people in the county. Each nurse is given a district in which she soon becomes acquainted with most of the families.

The public health nurse has had the usual courses leading to her nursing degree, and whenever possible she should have, in addition, special training in helping to solve the health problems of the family, the school and the community. This involves at least a year of study in a public health school. Unfortunately, there are not enough such trained public health nurses, and many communities can be well served by nurses with less training.

She plans her work after studying the family health records for her district and makes calls to homes according to the problems the families have. She is interested in expectant mothers and especially *(Continued on page 52)*



Dairy equipment must meet sanitary requirements.



Water supply sources are inspected frequently.

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Parents have learned why they should forbid their children to call on a friend who has measles, but they still take the chance of exposing children to tuberculosis in their own homes. The Bureau of Part Time Work in New York recommends health examinations for all home workers.

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Bridget Goes to the Doctor

Long needed to prevent the spread of disease—particularly tuberculosis—routine health examinations are being widely urged for New York's domestic servants, on a voluntary basis

By JULIETTA K. ARTHUR

IN NEW YORK there's an employment bureau which has been making a different kind of medical headline news. Wholly on its own initiative, this employment agency —unique in health annals—tackled the problem of insuring the city only healthy domestics in the home. When the Bureau of Part-Time Work launched its city-wide movement last year to educate housewives to ask for health references, New Yorkers were frankly skeptical.

"Defense jobs are taking most of our best applicants away already!" wailed the commercial agencies.

"Servants are harder to get than ever," snapped housewives. "I won't risk losing mine!"

"Class legislation!" shouted domestics. "Why pick on us?"

But pediatricians in New York and elsewhere welcomed the Bureau's plan as a hopeful new signpost along the road of a twenty year old campaign. Today, twenty-three commercial household agencies which supply most of the Bridgets and Katies to New Yorkers' kitchens and nurseries are cooperating with the Bureau's "Committee on Health Tests for Household Workers." It has had the backing of the City Health Department, the aid of physicians and equipment at the Murray Hill Health Service, and the blessing of the Child Welfare Committee of the County Medical Society.

Behind all that is the story of Dr. Blank, one of New York's most prominent pediatricians of two decades ago. When Dr. Blank's three children contracted tuberculosis, it was discovered that the source of infection was the Blanks' maid; she was actively tuberculous. Later, one of the children died.

His tragedy was the beginning of a campaign which today has the active support of the American Academy of Pediatrics. This year its Committee on Contact Infections again is waging a nationwide effort to build up more intensified community sentiment for "Health Certified Servants." In certain cities—notably, New Rochelle, N. Y., St. Louis, Knoxville, Washington, Miami—the tuberculosis associations working with local physicians are making headway. A few municipalities, like Newark, N. J., have experimented with compulsory laws.

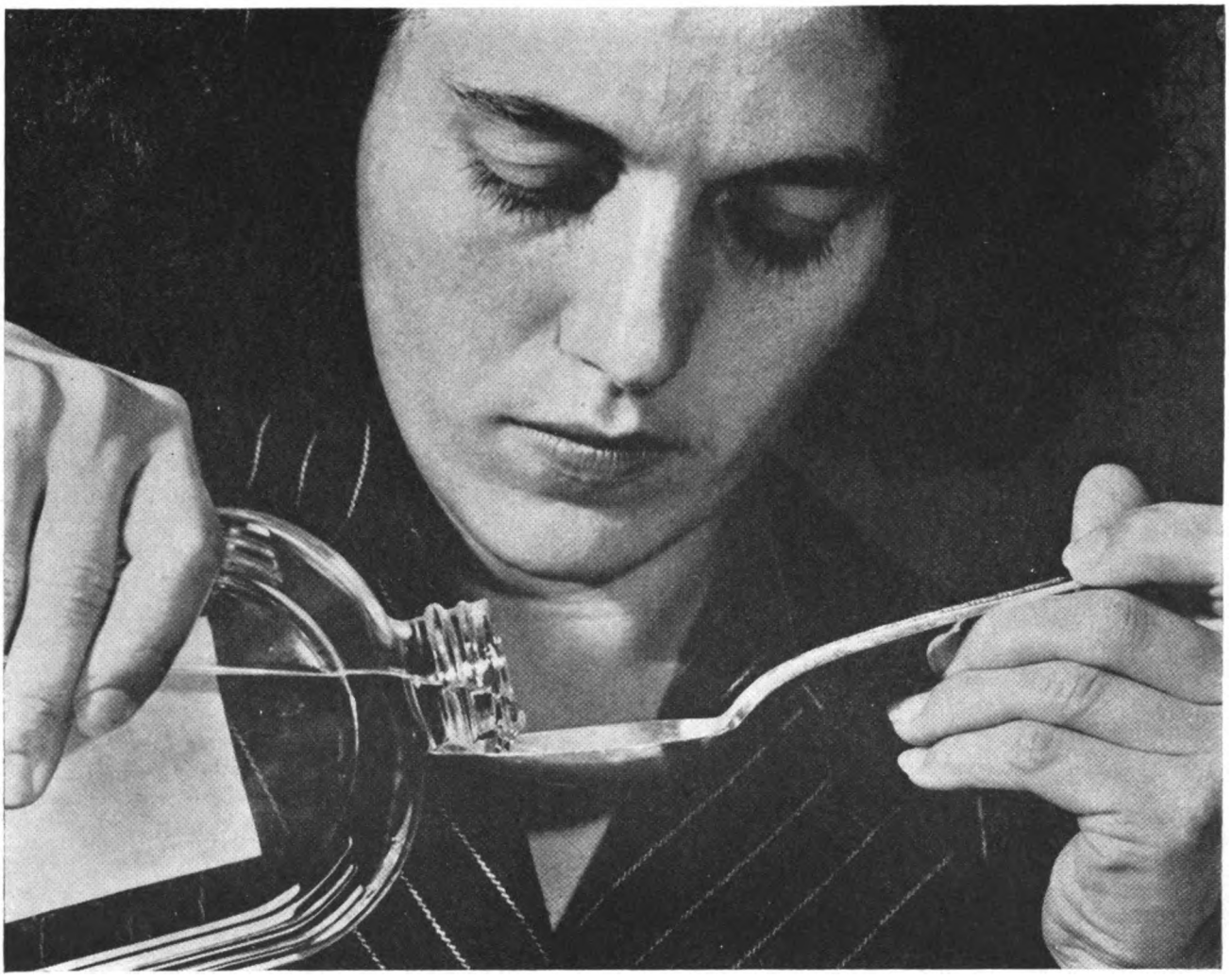
However, campaigns everywhere have bogged down because of inertia on the part of those same parents who shrink from the idea of Typhoid Marys (usually already known to the health authorities) and cheerfully spend extra pennies every day to insure their babies medically sponsored certified milk.

As long ago as 1922, the Academy of Medicine in New York made a valiant effort to interest the community. Hostility on the part of workers themselves and gullibility on the part of mothers and fathers who hated to risk losing Annie or Sadie "because they're so good to the children" defeated pediatricians. A few of them continued to campaign vigorously among their own patients; some have succeeded.

Then along came Eleanor Adler, pioneer in employment work, with an idea. Miss Adler had turned her attention in the 1920's to the problem of the post-war army of married women who went to work out of necessity or choice. Seventeen years ago she founded the non-profit Bureau of Part-Time Work to meet their needs, and year after year she has raised the money to operate it on a cost basis. These professional and busi- *(Continued on page 66)*

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Mineral Oil as a



WERE A FOREIGNER to judge Americans by listening to the radio, he would assume that we all suffer from headache, sour stomach and constipation. The sight of a druggist's counter, groaning under its load of purges, cathartics and laxatives, and his windows filled with enema bags, would confirm the impression that our race spends no inconsiderable amount of time, thought and money in dealing with the functions of the bowel.

Constipation is a symptom—not a disease—and while usually of little significance, it was the complaint which caused more than half the gastric cancer patients at Roosevelt Hospital, New York City, to seek medical advice.

The late Dr. Fantus said, "Obviously, the best cathartic is not the most drastic, but the mildest one that will serve its purpose." Sollmann describes a good laxative as one which produces more frequent stools of almost normal consistency, without causing notable irritation.

An outstanding example of such a laxative is mineral oil, which is a purified mixture of hydrocarbons derived from crude petroleum.

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Laxative

By VICTOR W. LOGAN

It occurs in light and heavy form, and is known officially as Liquid Petrolatum, U. S. P. Other names for this substance are liquid paraffin, paraffin oil and white mineral oil. The so-called Russian or Caucasian type of oil is composed of naphthenes, and tends to be more easily emulsified than the mineral oils of the methane group found in Pennsylvania. Certain California wells produce the "Russian" type. However there appears to be no significant difference in the action of these so-called Russian oils. Mineral oil has been widely used as a laxative for about thirty-five years. In contrast to the animal and vegetable oils, mineral oil is never absorbed through the gastrointestinal membranes. It has no nutritive value. Its action is physical rather than chemical.

The Advantages of Mineral Oil

Most cathartics act as irritants or stimulants to either the large or small intestine; catharsis being accomplished by an artificial speed up of the motor activity of the intestinal muscle. Others, like the saline group (epsom salt), drain much water, by osmosis, from the tissues into the intestines, tending to produce profuse watery stools. Mineral oil is mixed with the gastrointestinal contents and also partly emulsified. Its laxative action is due to the lubrication of the contents of the colon as well as the retention of water in the emulsion. This produces a soft and bulkier stool. It has no irritating action on the cells lining the intestinal tract, nor does it cause cramps. Because of its mildness it has a special usefulness in the treatment of habitual constipation, and in persons who have had attacks of intestinal obstruction. Overdosage can cause no poisoning, even in infants, since mineral oil is not absorbed. It is the laxative least likely to cause a "cathartic habit," or one requiring increasing doses to obtain a desired result.

The Disadvantages of Mineral Oil

In infants and feeble, older persons, pneumonia may result when choking or gagging allows some of the oil to be drawn into the lung. The presence of mineral oil in the bowel tends to prevent the absorption of Vitamin A and K and possibly D. This can be averted by giving the oil some hours after food. It also inhibits the absorption of bile and impairs the pancreatic digestion to a minor degree. For these reasons the indiscriminate use of mineral oil as a laxative is attended with some risk in infants, frail elderly people, growing children, pregnant and nursing women and in persons suffering from vitamin deficiency.

Although mineral oil is not palatable, this factor is overcome to a large extent by giving it as a flavored emulsion. Diabetics must realize, however, that certain commercial emulsions contain sugar. Frequently, they contain drugs, like cascara and phenolphthalein, which may detract from their usefulness. An unpleasant result of taking mineral oil is an occasional soiling of the clothing by seepage of the oily stool, resulting usually from overdosage. Some time ago there was a cancer scare based on the use of mineral oil, but it is not established that mineral oil taken by mouth bears any relationship to the occurrence of cancer.

How then should mineral oil be used by a person who has been assured by his family doctor that he has simple functional constipation? (It is, of course, presumed that this condition has not been corrected by regular habits, exercise and a well balanced diet.) The oil must be taken regularly in doses that are well tolerated. This amount should not exceed two tablespoons daily—preferably at bedtime, or divided into a dose on rising and retiring. The use of more than two tablespoons a day will give no better results and will inevitably lead to soiling the clothing and may lead to serious vitamin deficiency. Haphazard, irregular doses are of no use, as mineral oil is not, like castor oil, a purge.

Mineral oil will not appeal to the person who delights in torturing his unruly colon by blasting it with a semiweekly cathartic charge. Its work is done quietly on a day to day basis and without immediate, dramatic results. Impatience with its slower righting of ancient wrongs has caused many people to become discouraged and to embark on that never ending search, through transient experimentation, for the perfect laxative.

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Professor Leyland



"A LADY TO SEE YOU, doctor," announced Myra Young, Professor W. P. Leyland's office secretary and laboratory assistant. "Mrs. Beverley Huntson is the name."

"Mrs. Beverley Huntson!" exclaimed Leyland, "That would be General Huntson's wife. Odd that she should be consulting a professor of bacteriology. Perhaps she has a nephew or niece she is trying to get into our medical school. But show her in, and let's end the suspense."

A moment later, Mrs. Huntson entered Professor Leyland's inner office and took the seat he indicated.

"Good afternoon, Mrs. Huntson," greeted Leyland, secure in the memory that his often unkempt desk and shelves had just that morning been put in order. A General's wife would appreciate neatness. She might be a friend of a trustee of some fund or foundation, or even a trustee herself!

"Pleasant day, isn't it! My assistant, Miss Young, tells me that I can be of some service to you," he continued.

"Yes, Professor Leyland," Mrs. Huntson replied. "You can help me if you will. A group of the people who live in Hermit Hills have met and formed a Minute-Men's Club. Minute-Men, you know, are people anxious to be thoroughly informed on important matters and ready to lend their influence and aid on short notice where and whenever needed. We

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Chooses His Subject

By LELAND W. PARR



plan to hold monthly meetings and discuss important problems. I am chairman of the program committee, and our committee thought that one or two of our meetings should be devoted to health matters. We understand that you often speak to lay groups. Now you know why I am here."

"I am complimented, Mrs. Huntson, I'm sure," replied Professor Leyland. "What topics do you have in mind for me to speak on to the members of your group?"

"Well, we thought the three most important health topics of today are venereal disease, the physical health of our young men, as revealed by the draft, and infantile paralysis. Perhaps you would like to take one of these subjects for an evening. I'm sure you could tell us many interesting things about any one of the three."

"The subjects you mention are important," replied Leyland, "but I don't believe I could speak to your group acceptably on any of these."

"But, Professor, I was told that you often speak to groups like ours, and that you speak convincingly. It's hard to believe you mean what you say!"

"I'm glad to speak when I can, Mrs. Huntson," replied Professor Leyland, "but I can't speak interestingly on just any subject. I will gladly suggest persons who can speak on your subjects, but if I am to talk to your group and do it acceptably, I must have a subject for which my own interest and experience qualify me."

"Oh, I *am* relieved, Professor," beamed Mrs. Huntson. "I was afraid you were going to draw the line at speaking to our group at all! If these topics of ours aren't satisfactory, what would you talk to us about?"

"My suggestion is tuberculosis," said Professor Leyland.

"But there isn't much tuberculosis any more, Professor," exclaimed Mrs. Huntson in surprise. "That was wiped out long ago, or almost so, wasn't it? And there isn't anything Hermit Hills folk can do about it anyhow, is there? The General's great aunt died of tuberculosis, but that was ages ago. We can have our servants checked for venereal disease, but what can we do about tuberculosis? What is there to do?"

"On the contrary, Mrs. Huntson," replied the bacteriologist. "Servants are more likely to give children tuberculosis than venereal disease. Each servant should be carefully examined to be sure she's free from tuberculosis. Furthermore, tuberculosis still kills over 4 per cent of our people, and it attacks those who are at their most useful age—early manhood and womanhood. It is becoming increasingly important also as a disease of older people. It's one of the most important *(Continued on page 61)*

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The HOSPITAL LIBRARY



The success of a hospital library depends on the personality of the person in charge, her professional technic and knowledge of books

By MARION DeLEON

THE SERVICE of the Hoyt Library, Kingston, Pa., in the Nesbitt Memorial Hospital is an excellent example of how the hospital library service can be carried out with the least expenditure of time and money to the library, and at the same time give adequate service to the patients and to the hospital staff.

Kingston is a city of about 21,000 population and the Nesbitt Memorial Hospital has a capacity of 125 to 150 beds.

When the library was organized thirteen years ago a hospital book truck was given and a basic collection of books was placed in the hospital by the library. A volunteer service organization distributed the books to patients once each week. Four years ago the library appointed a staff member to act as hospital librarian and since that time it has been administered on a professional basis.

In "Hospital Libraries," E. Kathleen Jones says: "The great objections to volunteers in library service are two—both made by the hospital authorities as well as by the library profession. First, they are inclined to be casual about keeping to their days and hours. If a card party or a luncheon comes up suddenly, off they go, sometimes without a word to any one, sometimes with a gesture of furnishing a substitute—any kind of a substitute. Second, they usually are young and immature, have little knowledge of books, less of the approach to patients, and none at all of what library

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service really means. Of course, there are exceptions. Some volunteers feel their obligations, have fine cultural backgrounds, seek professional help and render splendid service. These are exempt from all criticism. In any case, untrained volunteers should receive some library training and be kept to schedule.

"In any hospital the success or failure of the library will depend on the personality and knowledge of books and the professional technic of the person in charge.

"She must have health, dignity, maturity, sympathy, tact and a large amount of the social service spirit.

"She must have a broad and intimate knowledge of books themselves, not merely their titles and the criticisms in book reviews. She must be able to discriminate between books suitable for persons ill physically or mentally and those which might affect them unpleasantly. She must know instinctively what books will appeal to certain types and classes of patients." These qualifications are to be found among the professional personnel of a public library.

The hospital librarian must work in close cooperation with the hospital authorities and abide by any regulations they may set up for her. She should not change her schedule or deviate in any way from the usual routine without first consulting the person to whom she is responsible at the hospital. In the Nesbitt Memorial Hospital the library service is under the direct supervision of the superintendent of nurses. This is an amicable relationship and has the full support of the hospital management and the medical staff.

A supervisor in the nursing department has been delegated as a consultant for the librarian. Before making her rounds the librarian checks with the supervisor so she may learn about the patients. In this way she eliminates visiting patients who are too ill to read or going into rooms where there may be cases of infection. Whenever there is a question about the advisability of giving a patient a certain book the librarian first checks with the supervisor. This is many times necessary for while the books chosen for the truck are carefully selected, requests for special books are frequently filled from the library. An example of the need for this check is that of the patient who was anxious to read "Grapes of Wrath." It was decided that this book was not suitable because of the mental outlook of the patient. However, a friend sent the book to him and he was greatly distressed after reading it. While no jurisdiction may be had over the books sent to patients by relatives and friends, the librarian can spare them much mental anguish by a careful selection of the books she circulates.

Generally speaking, patients in the hospital read the same kind of books well people read. Mysteries, westerns and love stories are the most popular books; biographies and travel books run them a close second. Books in foreign languages are also supplied. One of the most gratifying moments for the hospital librarian is to see the expression of delight on the patient's face when she offers him a book to read in his native tongue. This is another point scored for the supervisor whom the librarian consults. She is the one who "tips her off" about the nationality of patients who cannot read English.

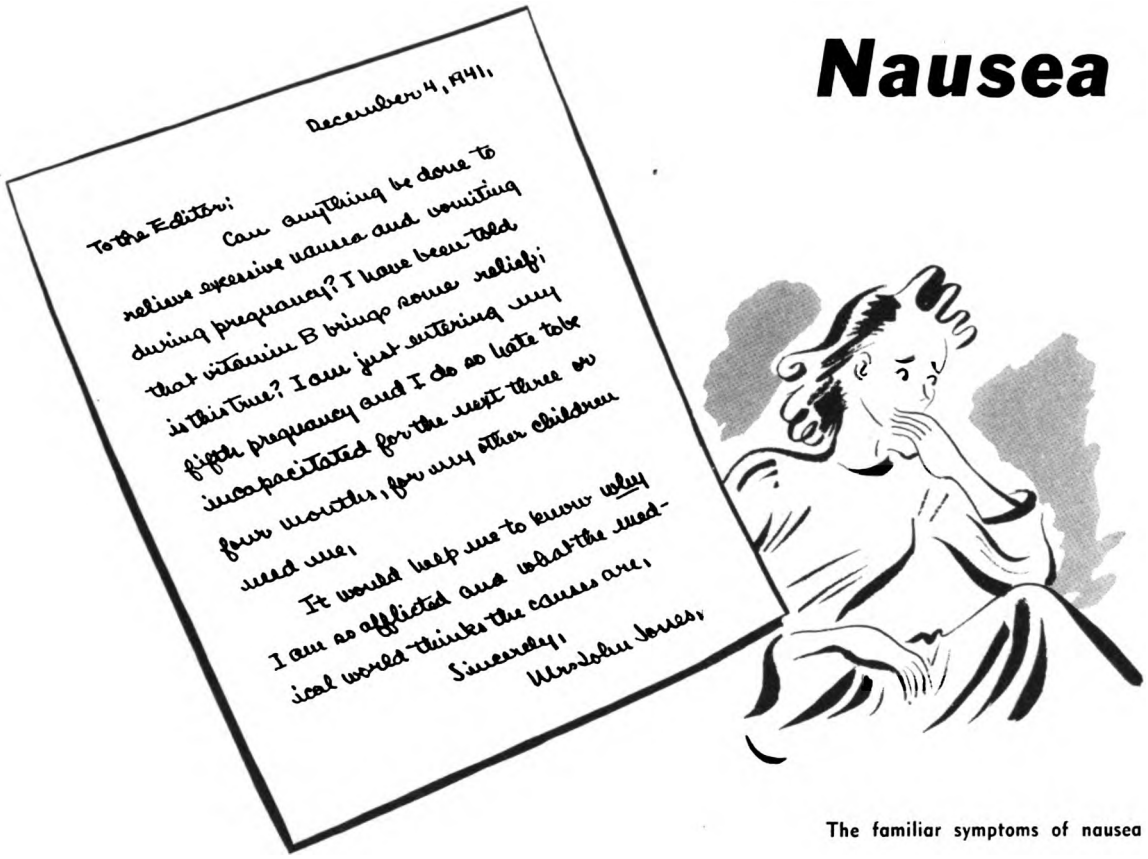
Frequently requests on special subjects are supplied from the library. Books have been brought in to help a college student prepare a term paper on the production of milk. Books were also provided to help a Sunday school teacher plan her winter program. A young man who was injured in the mines was supplied with books on the plumbing trade, for as he said, "I want to study plumbing while I'm here, for I'll never be able to work in the mines again." Another young man who has been a patient for a number of years has been helped by books on his various hobbies. At present he is learning the art of fly tying.

It must be remembered, however, that in small hospitals where there is no occupational therapist the nursing supervisor or doctor should be consulted before giving patients books on arts and crafts. It is not in the province of librarians to determine the ability of the patient to knit or make wood carvings.

The selection of books for the hospital carries with it a strong plea for the professional worker rather than the volunteer. The book collection is made up in various ways. Members of the nursing, medical and library staff suggest books they feel will be suitable. The main selections are made from the "Hospital Book Guide," published quarterly and sponsored jointly by the American Hospital Association and the American Library Association. Lists of the Medical and Hospital Service of the Veterans' Administration and those published at intervals in the "Booklist" of the American Library Association are also helpful. *(Continued on page 44)*

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Nausea and



The familiar symptoms of nausea and vomiting—

NAUSEA AND VOMITING of pregnancy seems to result from an imbalance in either or both the physical or mental make-up of the prospective human mother. It is fairly unpredictable; one patient may suffer in a number of pregnancies, her sister in identical surroundings may never experience the least discomfort. It may be severe in one of a series of pregnancies and mild or absent in others which the same patient may have. If one is convinced that she is going to have a disagreeable time, she is rarely disappointed.

In the vast majority, the symptoms disappear at about the end of the third calendar month of pregnancy from which it has been reasoned that the body has developed at this time an immunity reaction to the processes which initiated the illness. In some patients this develops earlier and in others later or not at all, the nausea and vomiting then persisting to the time of confinement.

The basic cause of the disease is unknown and because of this fact the use of vitamin B, except in patients with a demonstrable deficiency of this important dietary factor, is as illogical as it may be expensive. Psychic factors are important in precipitating severe attacks and often most useful in treatment, illustrated by the brilliant results from therapeutically inactive drugs administered by impressive methods, and from psychic phenomena such as hypnotism, sudden shocks and the response to a new dress or linoleum for the kitchen floor.

In the absence of accurate knowledge of the cause of this disease, treatment of the patient most often devolves on empiric or trial-and-error methods. Certain basic principles must be observed, however, and although even meticulous attention to them carries no universal guarantee of cure, neglect here may result disastrously.

Child-bearing is the most important function of the human body, and, quite reasonably, will be best fulfilled if that body is in the best possible condition. Prior to pregnancy, or as soon as such is suspected, a thorough examination should be made to correct any existing faults, among the most common of which are infected teeth and tonsils, anemia, disturbances of the thyroid gland, the digestive and urinary organs. Such an examination will also discover any pelvic abnormalities that may exist.

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Vomiting During Pregnancy

By JAMES A. GOUGH



are occasionally caused by psychic factors—



and may be relieved by buying a new dress!

Good health habits, so frequently neglected, become vital at this time. The pioneer's plain food and long hours of hard work have been replaced in our modern life by reducing diets, highly competitive games and an over-intensive social program. Economic worries, the high cost of living (resulting frequently in fear of pregnancy), the strain of "keeping up with the Joneses," late hours at the bridge table or night club, hectic week ends and vacations that merely intensify the undesirable features of the remaining fifty weeks in the year, all leave an imprint on the sensitive nervous system that cannot be erased by one more cigaret or the pick-up derived from another drink.

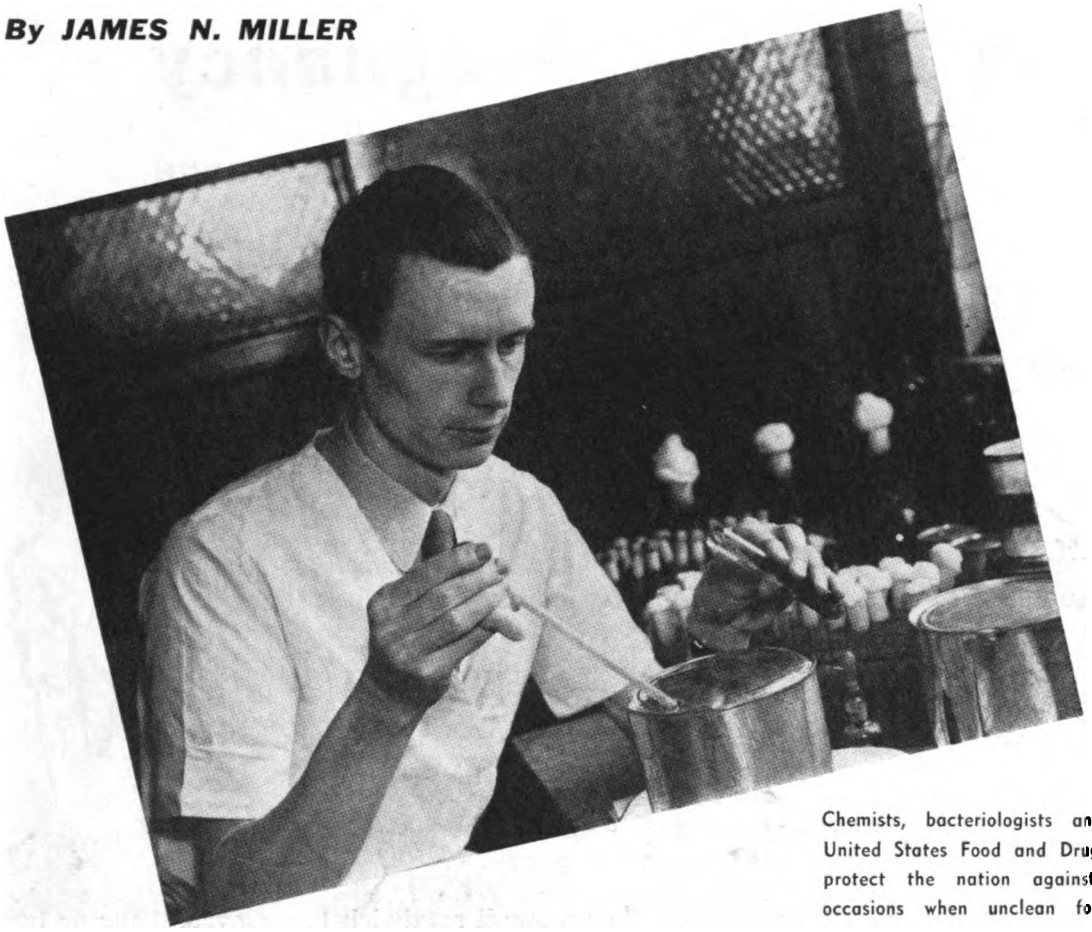
The prospective mother should lead an orderly life; keep an active interest in her family and community; observe regular hours; spend as much time out of doors as possible; try to get eight or nine hours sleep every night. Her diet should consist of good food, not highly seasoned. There is no ideal diet for this condition, but carbohydrates prevent acidosis frequently associated with vomiting, and should not be restricted during this time. Eat small meals frequently and never over eat. A cracker, a piece of toast, candy, fruit, or a small sandwich taken every hour or two during the day need not exceed the ordinary total intake of food, and when distributed this way will keep busy a refractory stomach. The nausea is always worse after a prolonged fast, and if she eats often she can prevent such bad spells. Liquids are usually harder to retain than solid foods—carbonated drinks are usually well tolerated. The popular idea that soup, broth and other liquid foods are easily digested is erroneous.

The doctor may prescribe a mild sedative to overcome the nausea, but such medication should not be continued without medical supervision. The doctor also is the one to consult regarding her personal needs for glandular preparations or vitamins. Individual requirements and deficiencies vary too widely to permit specific statements.

A truth often obscured is that the prospective infant has two parents. This is not to be interpreted as a desire to inflict punishment on the male for his part in pro-creation, but in the hope that prospective fathers will show helpful sympathy, and in little acts of kindness alleviate somewhat the undesirable symptoms which they will never experience.

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By JAMES N. MILLER



Chemists, bacteriologists and inspectors of the United States Food and Drug Administration help protect the nation against frauds and those occasions when unclean foods threaten health.

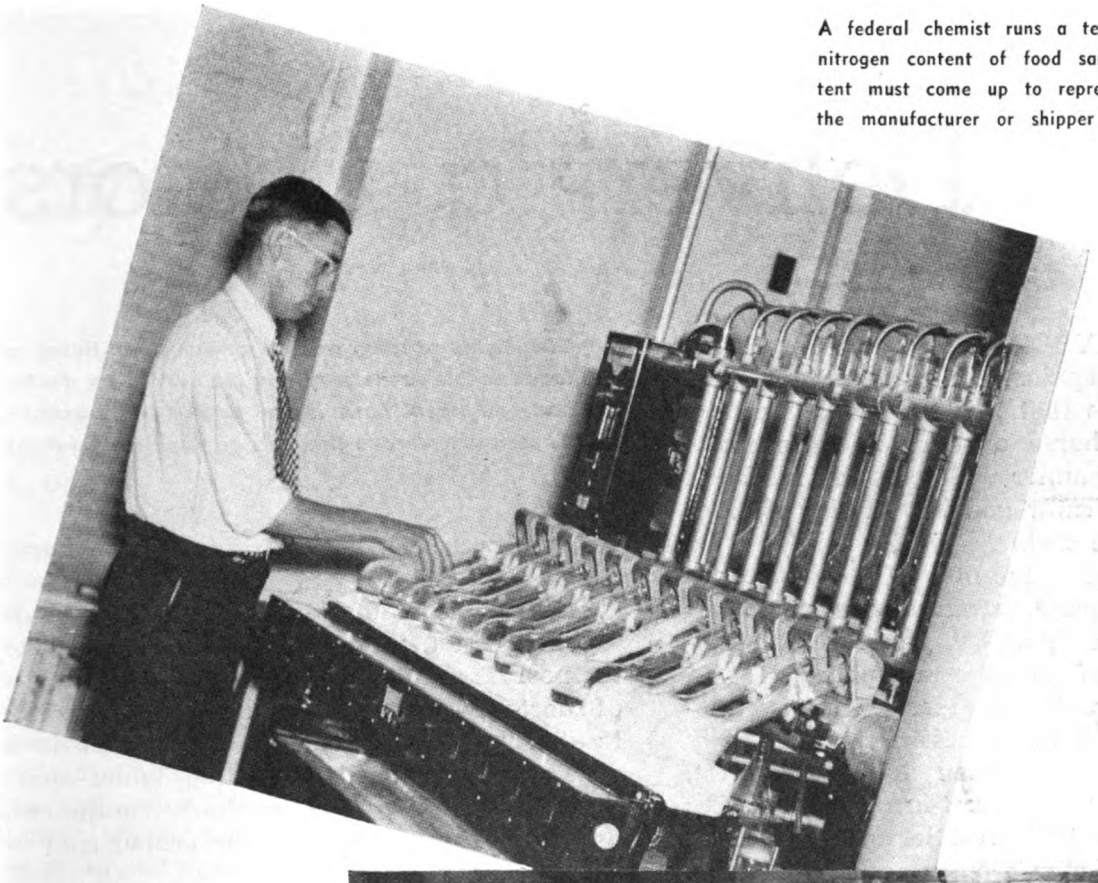
Pure Food Detectives

EVERY TIME you sit down to a meal you should thank your lucky stars for a tiny army of chemists, bacteriologists and inspectors attached to the United States Food and Drug Administration with headquarters in Washington. If it weren't for their everlasting vigilance, you might unwittingly be eating rancid potato chips, spoiled fish, maple sirup containing lead, meat swarming with worms, tomato catsup made out of dirty tomato pulp and buckwheat cakes filled with bugs. Their job is to protect the nation against food frauds and those all too frequent occasions when contaminated or unclean foods threaten the health of families and entire communities.

A quick test and a cheap one is a first class aid to the Administration in protecting the public from food cheaters. A simple test for mineral oil in butter, worked out by the federal chemists, makes it easy to detect as little as 0.5 per cent of mineral oil, takes only about twenty minutes and costs only a few cents for chemicals. In this test the butter is melted, treated with a chemical and then diluted with distilled water. A resulting milky or turbid solution indicates adulteration with mineral oil. Pure butterfat is clear on dilution. On the rare occasions when butter is adulterated with mineral oil, the cheater stands to make a substantial profit from the substitution, at the expense of the consumer. Mineral oil sells for only a few cents a pound.

In the first big test of this new chemical detective method, the federal chemists tested the whole output of *(Continued on page 53)*

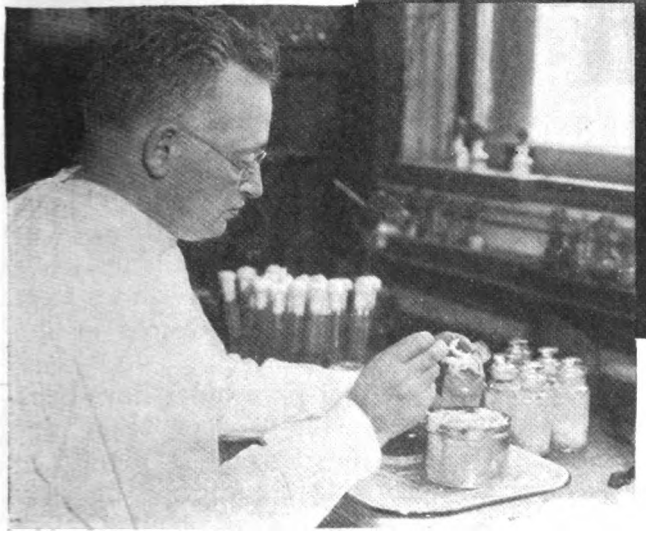
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A federal chemist runs a test to determine the nitrogen content of food samples. Protein content must come up to representations made by the manufacturer or shipper to be satisfactory.



Simple tests for mineral oil in butter, as worked out by chemists, make it easy to detect this common fraud (right).



Examining crabmeat for suspected spoilage (left). If it weren't for the everlasting vigilance of food inspectors, you might unwittingly be eating spoiled foods on many occasions. Pure food detectives are on the alert!

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Delivering Doctors

Thousands of men, women and children living in inaccessible areas may now be served by doctor and equipment flown in and landed by parachute. Experiments prove this can be done successfully

THE FAMILY PHYSICIAN of a generation ago raced against death knowing all too many times that a life depended on the speed of his horse over rural trails made hazardous in summer with rain and mud and in winter with snow and ice. Today another battle with the elements is being waged in an effort to protect the lives of those who are isolated in remote, mountainous areas by insuring the speedy and safe arrival of a doctor by means of airplane and parachute—an innovation in ambulance service made practical as a result of successful tests recently conducted in the Chelan National Forest, Washington, by the forest-fire control forces of the United States Forest Service.

Thousands of men, women and children live in the sometimes inaccessible mining and lumber camps sprinkled over the 176 million acres of our national forest areas. This population is frequently without proper medical assistance when an emergency arises. During the long winter months, when a sudden snowstorm blocks all roads and trails for weeks, transporting the injured and sick to a hospital or a doctor becomes utterly impossible. In the spring, the same problem arises when melting snows flood the surrounding regions.

Yet the experiments recently concluded with the training and use of parachute jumpers as fire-control crews in mountainous forest districts prove that the family physician can be transported safely and successfully to the homes of the sick in far, out-of-the-way places.

The specific purpose of the parachute tests was to determine whether it would be practicable to drop a man from a plane into any kind of terrain—rough, steep slopes, mountainsides covered with fallen timber or old snags, rocky ridges or stands of high timber. In the tests, no one was injured in landing, either in the open or in trees. In fact, jumpers who had previously been fearful of landing among tree branches were surprised to learn that the branches actually cushioned the landing and were often preferable to the hard, rough ground.

The personnel of 76 Forest Service landing fields in the National Forests can locate the nearest doctor and summon him by means of short-wave radio or telephone to a centrally located hospital station. He is taken up in a plane along with his operating table, anesthetics, lights and other necessary equipment, and may be circling above the proper spot in a matter of minutes.

At what the pilot believes is the correct moment, he lets go a small burlap test 'chute with a bag of sand attached, in an effort to estimate the wind drift. Making necessary corrections for wind and other factors, the pilot crosses the spot a second time and signals the doctor to jump. Circling the spot for the third time, the pilot finally releases a burlap parachute with a pack containing all the necessary medical equipment. These burlap parachutes, used for the past two or three years by the Forest Service in dropping tons of food and supplies to fire crews, are designed to bring safely to earth the most delicate or cumbersome equipment—an operating table, stretchers, or a bottle of pills. Eggs, in experimental trials, have been dropped without breaking. Preceding the equipment 'chute, the doctor watches for its descent and spots its yellow streamer. Mountain currents are difficult to estimate, but jumpers and 'chutes have been landed within 50 to 200 yards of the desired spot.

The new type 30-foot parachutes have been especially designed with flaps or "ears" for use in controlling the descending flight and operate with surprising accuracy. The slow rate of descent, estimated at about 12 feet

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by Parachute

By S. R. WINTERS

per second, enables the jumper to locate a favorable landing place and to observe the condition of his canopy. A 27-foot emergency 'chute, packed over the chest, is worn for use in case the main 'chute fails. This new type of equipment demonstrates that a man jumping from an altitude of 10,000 feet and landing at 8,000 feet comes down with no more impact than at sea level.

The doctor's jumping suit provides ample protection against injury from hanging against trees or rocks. The two-piece outfit is made of strong duck, padded with thick wool felt over vulnerable spots, and may be removed quicky on landing. In addition to the safety suit, a special protective helmet equipped with a strong wire mask to protect the head and eyes is an essential unit of the jumper's outfit. Simple ankle braces worn over his boots aid in the pro-

(Continued on page 63)



The jumping equipment provides protection against injury from hanging on trees or rocks. The suit is strong and well padded.

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False Health Notions

By GEORGE A. WALKER and ELEANOR SALTZMAN

HOW MANY high school graduates believe that eating green apples commonly causes colic? If findings for men of college level in a recent study of Civilian Conservation Corps enrollees indicate the convictions of their fellows, over half of them still believe what their grandmothers told them. Perhaps the minority dissenting tried green apples in their brash young days and, suffering no ill effects, decided on their own account that the danger was overrated!

It is difficult to believe only what we should about our bodies and general health. We have inherited superstitions from our ancestors. The radio and magazines bombard us with sale-boosting axioms about teeth, weight, digestion and vitamins. The public schools have not proved adequate in counteracting vicious health teaching and instead inculcating broad hygienic information.

The boys and men enrolled in the CCC are faced with this difficulty about what to believe. While the great majority of the men range in age from 17 to 23, from every walk of life, project assistants and exempt CCC overhead key men have no age limits or marital restrictions. Consequently the upper age limit may be more than 50, and the group often ranges from illiterates to college graduates. The mean educational achievement level falls between the sixth and seventh grades.

These boys, for the most part unemployed through no fault of their own but because of the present economic situation, will probably encounter here their last educational "outpost" of opportunity for self improvement. Eighty-nine per cent of the 1938 CCC enrolment did not finish high school, and nearly 54 per cent secured only eighth grade education or less. They have not had even a minimal chance to develop health attitudes of the right sort. It became evident to staff people in the Corps work that health education should find some place in the already overburdened camp training program.

George A. Walker made a study of the health knowledge of enrollees, using a group of misstatements as true-false tests administered to several hundred men and boys in four camps in February 1936. This study was undertaken to determine the amount of hygiene information certain CCC enrollees possessed and was made at the Ottumwa, Sigourney, Keosauqua and Fairfield camps. Although these are all in Iowa, an Arkansas manned company was located at Ottumwa.

The results obtained in the study were not exactly complimentary to the health training received through the public schools. With increased education there was wider knowledge of the fallacies used in the tests, but less inclination to believe what one hears and be influenced thereby. However, whereas the high school group showed distinct improvement over those who had gone only to the grades, the college level men had made no advance beyond their fellows who had failed to complete high school, and an analysis of all taking the test reveals a disheartening ignorance of physiology and hygiene. For approximately 45 per cent of both high school and college groups believed the ten most widely accepted fallacies to be true. Moreover, if the statement had been heard it was likely it would be accepted, and more than 80 per cent of those so accepting it as true were influenced by it. A significant number of enrollees were influenced by statements they did not even believe.

Geographic environment seems to have some relationship to the problem—37.8 per cent of the Iowa enrollees believed the falsities as against 42.8 of the Arkansas youths. Although the Arkansas group was small, the boys do

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An appalling number of the CCC boys questioned in a recent survey believed in the false health notions listed below. Their home and school health training had done little to dispel the mists of these "old wives' tales":

1. Feed a cold and starve a fever.
2. Grape seeds cause appendicitis.
3. Eaten in a month without an "R," oysters cause ptomaine poisoning.
4. Tuberculosis is inherited.
5. Boils purify the blood.
6. Malaria is due to night air.
7. Tomatoes induce cancer.
8. Cancer is inherited.
9. A child can't have measles or scarlet fever more than once.
10. Wearing a metallic ring prevents rheumatism.
11. Children who grind their teeth at night have worms.
12. A mad dog always foams at the mouth.
13. Color blindness is a disease that can be cured.
14. Rubbing one eye will get a cinder out of the other.
15. Frequent cutting of the hair brings about thicker growth.
16. "Growing pains" are a natural result of growth in children.
17. A cat will kill an infant by sucking its breath.
18. Whisky is an antidote for snake bite.
19. A sudden fright can mark the child of an expectant mother.
20. Cousins who marry will have children of inferior intelligence.

show a definite tendency toward greater credulity regarding the health fallacies than the Iowa enrollees.

The ten hygiene untruths that found widest acceptance among the CCC boys follow: The green apple-colic superstition, of course, is one. The other nine are:

Cereals are rich in body building protein, provide a source for quick energy, and are in general a good "all-around" food.

Canned vegetables and fruits allowed to remain in the original container until the next meal will be poisoned.

Tooth decay is best prevented by thorough and frequent brushing.

The "stuffiness" and "closeness" of the air in a room is due to an excess of carbonic acid gas, or to the organic poisons from the breath.

Baking soda hastens the digestive process in the stomach.

Small organisms (bacteria) are spontaneously generated from filth or accumulations of dirt.

It is more dangerous for an adult to have whooping cough than a child.

An onion eaten raw is of value in the treatment of a cold.

Exerting the body rests the mind.

All these are simple falsehoods to the student of physiology and hygiene, yet statistics for these tests show that from 43.6 to 70.4 per cent of the CCC enrollees believe the above statements true, and for all statements the percentage ranged from 34 to 49.

Education does have some effect, as we have seen. Forty-seven per cent of the elementary group believed milk is a mucus-forming food and hence many times undesirable, especially for persons inclined to be bothered by catarrh, as against 35 per cent from junior high school, 18 per cent from high school, and only 15 per cent from the college group. Although 74 per cent knew the old rhyme about an apple a day, only 31 per cent were influenced by this simple recipe for keeping the doctor away. Sixty-five per cent of the grade schoolers believed it, and only 17 per cent of the men of college level.

Milk received credit for other somewhat bizarre properties. Many of the boys thought milk and seafoods, especially lobsters, should never be eaten together, that milk curdling in the stomach is an indication of indigestion, that it is an undesirable food for athletes as it "cuts" the wind, that the drinking of cow's milk fresh from the udder can cure consumption, and that syphilis can be cured by fasting, followed by a milk diet.

Folk lore is not the only source of weird convictions. We have seen what the boys believed about cereal. Is advertising pressure also responsible for this wholesale list of properties assigned to yeast: a nutrient food product which strengthens the internal muscles and intestines, aids digestion, cures acne and constipation? Forty-four per cent of the men of college level believed it. Perhaps the grade schoolers read less and so missed the full broadside of the advertisements—at least only 12 per cent professed it to be truth.

Widespread advertising and the convincing voices of radio announcers loom persuasively behind this axiom, too: "Some toothpastes

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will not only inhibit the growth of bacteria causing decay, but actually destroy them." Forty-four per cent vouched for it. And is the recent suntan fad partly responsible for the one-third calling a deep tan an indication of health and body vigor?

How many commercial hair preparations are responsible for the convictions of 34 per cent that hair tonic is of great value in stimulating hair growth? We can almost visualize the illustrations which helped persuade 44 per cent that common antiseptic washes used for the nose and throat actually kill germs.

Inadequate health training and only partial comprehension of the hygiene facts taught condemn the public schools these boys attended. Forty-four per cent believed firmly in the standardized age, height and weight tables for determining a child's proper weight. Are frequent toothbrush drills responsible for the 62 per cent who believed tooth decay is best prevented by frequent and thorough brushing?

To secure material for these tests, a list of about two hundred fallacies were secured from Dr. Roland Rooks of the Department of Hygiene and Preventive Medicine, State University of Iowa. From these, 90 statements were selected which appeared to be most common. Titled "A Health Education Study in the Civilian Conservation Corps," these were presented with columns to be checked if the statement had been heard, if it was believed true, and if the enrollee had been influenced by it. There were blanks for name, age, school attainment, address and company number. Through the courtesy of the commanders and educational advisers of the four camps, this test was administered by George A. Walker, then educational adviser of the Fairfield Camp. About one hundred enrollees in each camp took the test after the evening meal. There was no time limit, but the answers were usually completed in about twenty minutes. A copy of the test was left for each camp educational adviser with the recommendation that he notify the boys on the following day of the falsity of the statements. The tests created some little stir—the camp surgeons were called on to settle many a dispute regarding the validity or falsity of some of the statements.

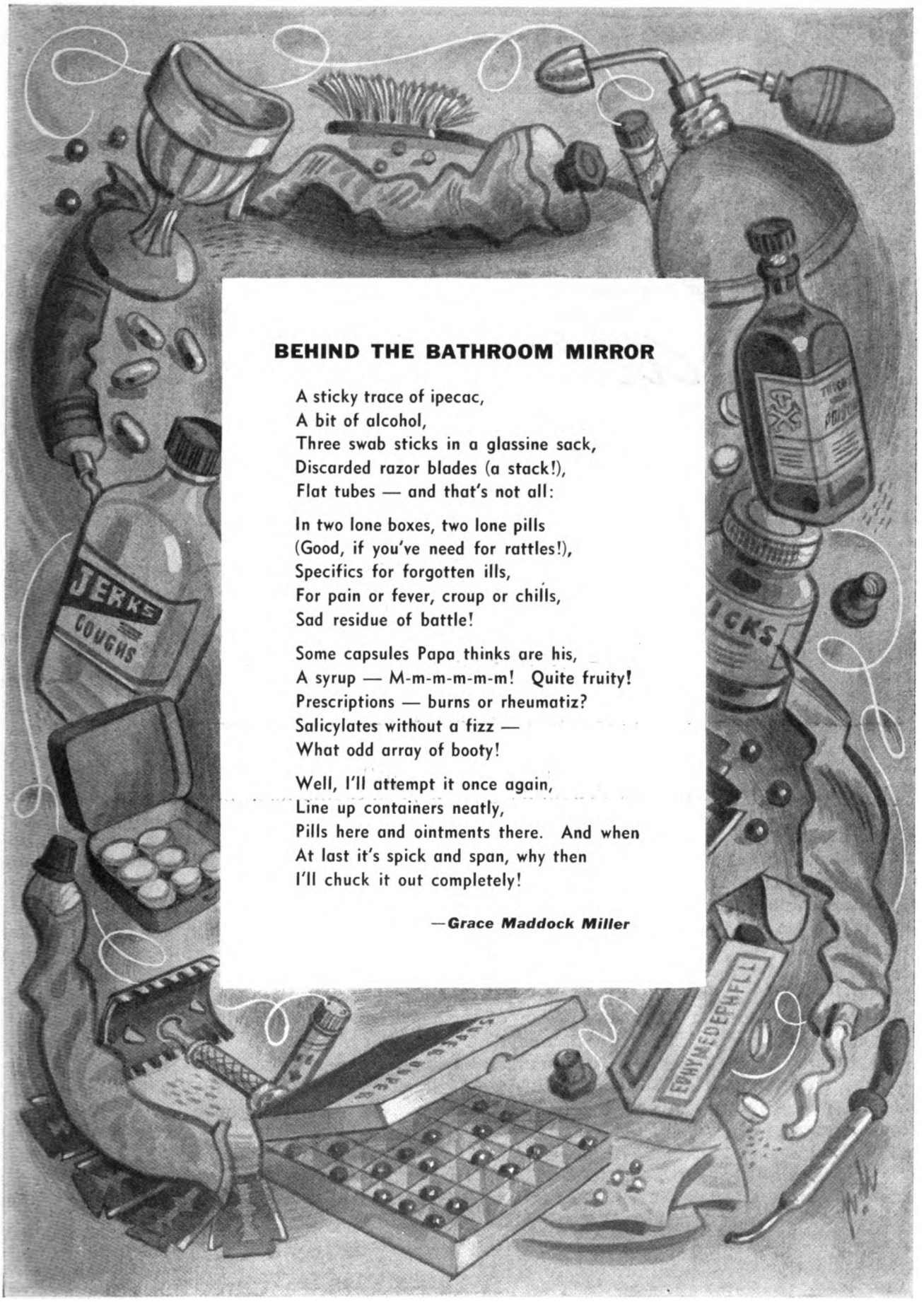
Over a hundred tests were thrown out because of the incompleteness or lack of reading comprehension, so that 297 cases were actually used in the study. As pointed out, these cases were classified according to the educational level achieved. The elementary included the grades from the first to the sixth, junior high seventh and eighth grades, the high school group ninth through eleventh, and the college group twelfth grade and up.

It could be wished that a study like this might be conducted among large groups of our young citizens in their prime, but the results of this one small study reveal a pathetic inadequacy on the part of those training our youth. The comparison of the Arkansas and Iowa boys showed that geographic environment has an effect on health beliefs and superstitions. With increase of education the number of fallacies heard also increased, though there was less tendency to believe them and be influenced thereby. But although there was some improvement with education, at all levels the knowledge of physiology and hygiene was far from satisfactory for healthy adult living. In 80 per cent of the cases fallacies accepted as true influenced the everyday behavior of the believer. Furthermore, in every one of the twenty statements most commonly heard, a significant number of boys were actually influenced by health axioms they had heard but did not believe.

It is not enough to buy our boys and girls toothbrushes, to urge them to eat their spinach, to see that they get their vaccination for smallpox at the proper age. What about the 34 per cent who still say a cat will kill a baby by sucking its breath? One fourth of the boys believed that reducing their weight by taking cathartic salts is a harmless, sensible procedure. Until such superstitions can be uprooted from the folk culture passed from parent to child, the health of our citizenry must remain in constant danger of being undermined by its own remedies and fears.

Nor are our schools blameless. We have courses in physiology, hygiene, health—whatever may be the current title of that part of the curriculum pertaining to human well-being. Many schools have some type of dental and medical examinations available for their pupils. There are physical education classes, swimming pools and all sorts of games purporting to accent physical development. There are milk funds for underprivileged children and splendid school lunch programs. There is even growing emphasis on pleasant, stimulating exercise and health study for younger and older people beyond school age in all walks of life. But our educators and trained leaders need to look well into their own schedules when almost *(Continued on page 59)*

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BEHIND THE BATHROOM MIRROR

A sticky trace of ipecac,
A bit of alcohol,
Three swab sticks in a glassine sack,
Discarded razor blades (a stack!),
Flat tubes — and that's not all:

In two lone boxes, two lone pills
(Good, if you've need for rattles!),
Specifics for forgotten ills,
For pain or fever, croup or chills,
Sad residue of battle!

Some capsules Papa thinks are his,
A syrup — M-m-m-m-m-m! Quite fruity!
Prescriptions — burns or rheumatiz?
Salicylates without a fizz —
What odd array of booty!

Well, I'll attempt it once again,
Line up containers neatly,
Pills here and ointments there. And when
At last it's spick and span, why then
I'll chuck it out completely!

—*Grace Maddock Miller*

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Pathways to the

Many patients suffering from diseases or symptoms which would have resulted in complete disability only a few years ago may now resume normal daily routines through the development of new effective technics in neurosurgery

By LOIS MATTOX MILLER

WORKING LIKE LINEMEN on a far-flung telephone network, surgeons now operate on the nervous system itself—daring, delicate, often miraculously effective surgery—to check the pain impulses of incurable disease or to block the mysterious symptoms of hidden ills that cannot be treated at their source.

Swoop of the Hawk—

Ménière's disease is a devastating form of vertigo that is probably as old as mankind. Mohammed, Martin Luther, and Jonathan Swift were celebrated victims. Overwhelming dizziness makes things seem to whirl; strange head-noises ring alarmingly in one ear; the victim collapses. Attacks are recurrent and they come so swiftly that Gamaliel Bradford (another victim) likened them to "the swoop of the hawk." Ménière's disease is still a medical mystery. The trouble seems to be centered in the auditory nerve, which serves both hearing and equilibrium. Some years ago, doctors discovered that they could banish the dreaded symptoms of vertigo permanently by severing the auditory nerve. The operation had one serious drawback: it also destroyed hearing.

Then a railroad conductor who had been unable to work because of recurring attacks brought his problem to Dr. Walter E. Dandy, celebrated neurosurgeon at Johns Hopkins. If the nerve operation was performed he would be cured—but the resulting hearing loss would cost him his job. Dr. Dandy had been studying Ménière's disease, and had reached an important conclusion. The eighth, or auditory, nerve is really two nerves in one. It has another peculiarity: its fibers are so complex that, while severing *most* of the trunk will check the impulses of vertigo, leaving *very little* intact will preserve normal hearing!

Dr. Dandy's operation has since become a classic. He removed a small portion of the skull behind the ear, opened the tough mem-

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brane enveloping the brain and exposed the eighth nerve. Then he cut about five eighths of the nerve trunk, leaving the rest intact, closed up the membrane, replaced the skull section and stitched the scalp incision. Soon the conductor was sitting up in bed, his vertigo gone forever but his precious hearing saved.

Dr. Dandy has performed the operation since on some 125 patients, and it has been repeated in many times that number of cases by other neurosurgeons.

Cutting Hypertension—

Dr. Paul Brown made a habit of working around the clock. For a dozen years he had ministered to his patients at all hours of the day and night; his "spare time" was spent in clinics or professional meetings, or poring over medical books and journals. Repeatedly, he promised his wife that he would take that long overdue vacation "next year." At 48, Dr. Brown collapsed.

He had splitting headaches, dizzy spells. He was exhausted, nervous, irritable and unable to sleep. He consulted a colleague. Check-ups showed his systolic blood-pressure hovered dangerously around 218. Dr. Brown knew the answer: hypertension!

As a common cause of death—particularly among middle-aged business and professional men—hypertension outranks even cancer and tuberculosis. No one knows exactly what causes the condition, although there is evidence that overwork, worry, anxiety and nervous strain are contributing factors.

This destructive tightening of the blood vessels seems to start in the kidneys. Apparently it is caused by some impulse transmitted over the sympathetic nervous system which regulates the involuntary organs of the body.

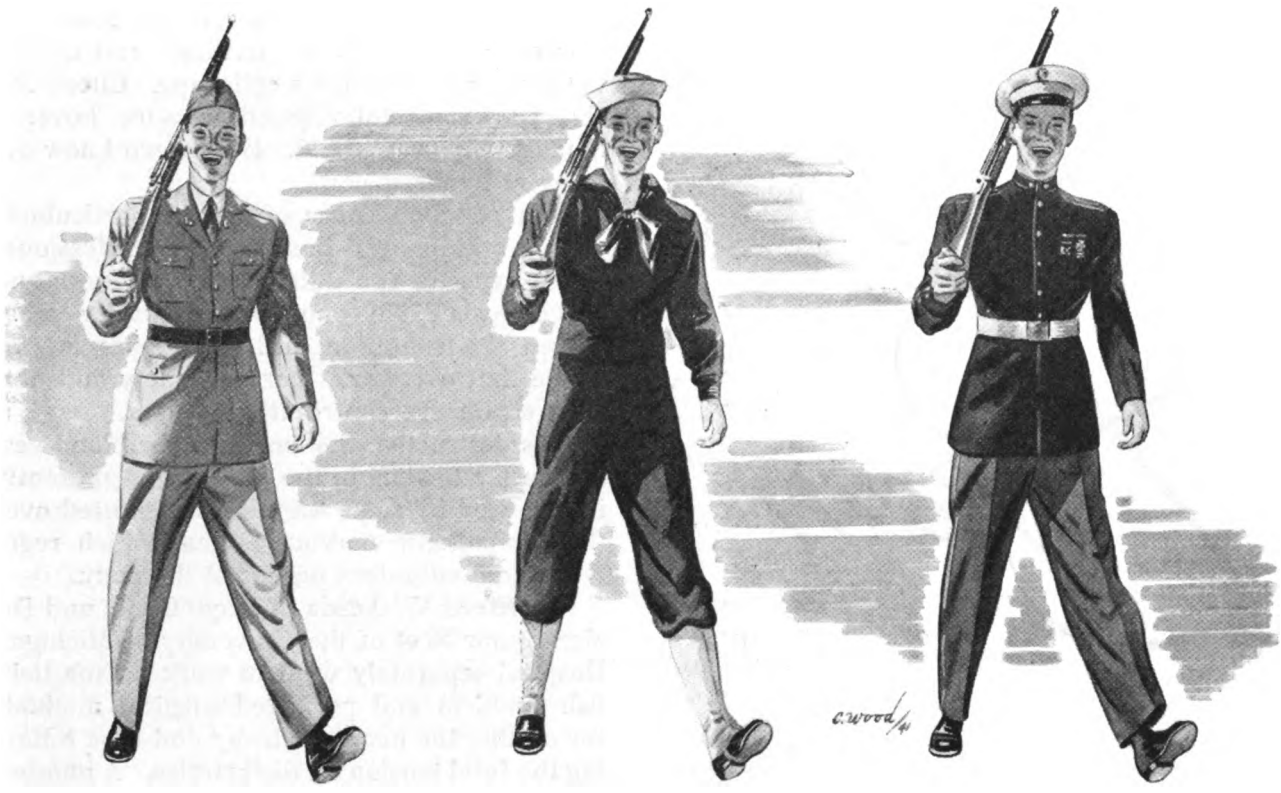
Dr. Alfred W. Adson of Mayo Clinic and Dr. Max Minor Peet of the University of Michigan Hospital separately went to work on the ticklish problem and perfected surgical methods for cutting the nerve pathway and thus relieving the fatal tension on the arteries. A number of other surgeons in the United States, utilizing either the Adson or Peet technic, are now performing the operation regularly. Patients must be carefully selected, however. Dr. Paul Brown's proved to be an ideal case for surgical treatment, because he was under 50, his arteries and kidneys had not been extensively damaged and he was physically fit otherwise to undergo a major operation.

Dr. Brown, now a patient, was placed on the operating table, resting on his side. The surgeon made an incision along the right side of his spine and removed a portion of the 12th rib. A smooth, illuminated retractor moved aside the liver and the right kidney. With a moist cottonball sponge the surgeon gently engaged the splanchnic nerves which connect with the kidneys and other visceral organs, delicately severed and removed them. Then the operation was repeated on the left side.

It was all over within an hour. Two weeks later Dr. Brown was discharged from the hospital and went off for a short vacation. He is back in practice now, fitter than ever, and in no way disabled by the operation. His blood pressure is normal for his age.

Dr. Adson has performed his operation on over 300 patients at the Mayo Clinic, and Dr. Peet has operated on some 500 at Ann Arbor. Blood pressure has been reduced in more than half the cases, and about 85 per cent have been relieved of headaches, *(Continued on page 58)*

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Is Your Son

By COL. LEONARD G. ROWNTREE

AT THIS MOMENT the very existence of our country and of our democratic way of life is being threatened seriously by those who believe only in the right of brute force to rule the world. During the last two years we have witnessed the ruthless destruction of one peaceful but unprepared country after another.

A year ago, to meet this rising danger, the Selective Service System was created to procure and train military forces for our national defense. Just recently a state of emergency has been declared to exist by the President. Under such circumstances it is obvious that we must accept the situation as critical; that we, each and all of us, do our utmost for national preparedness.

The present situation places great responsibility on the young men of the country, on you as parents, and on us in Selective Service who are charged with the procurement of men. Selective Service has been charged with the function of procuring men for the army in this time of national emergency. In carrying out its function it is necessary for Selective Service to send to the induction boards of the army for final selection only such men as are regarded sound—physically, mentally and morally. Naturally, this involves careful testing of each registrant, including medical examinations. Analysis of these medical examinations reveals the health of the young men of the nation from the standpoint of their fitness for military service.

There can be no doubt about our immediate need for a large army for defense. However, it has been the policy of this Government since its foundation that nothing but a skeleton regular army should exist during peacetime: an army just large enough to indicate to the world that we have an army, and to constitute a frame on which to build a temporary army of any size to meet any emergency at any time. This national policy, so far, has always met our needs adequately; as it did, for instance, in the last World War.

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Fit for Service?

On Sept. 16, 1940, President Roosevelt signed the historical Selective Training and Service Act of 1940—an act unique in times of peace in American history. One month later a national registration was held in accordance with the provisions of that act for purposes of registering all males between the ages of 21 and 36. Subsequently, by presidential proclamation, all men who had become 21 years old after Oct. 16, 1940 were registered on July 1, 1941, a total of approximately 17¼ million men.

More than 6,400 local boards, 600 medical advisory boards, or approximately 200,000 citizens, have been organized for carrying out the purpose of this Act.

In the procedure of selecting men, local boards first review the history of each registrant to determine whether he has responsibilities to dependents, the possible necessity of continuing in his present position as a "necessary man" in his civilian occupation, or any other reason why he should be deferred from military training and service. When not deferred by the local board, the registrant is then examined for physical defects.

Approximately 2 million registrants have now been physically and mentally examined. About 1 million of these have been found to be qualified for general military service; that is, according to army standards they are judged capable of standing the stress and strain and difficulties of army life without the probability of spending an abnormal proportion of time in hospitals. But approximately 1 million have been determined to be unqualified for general military service; approximately 470,000 being available for only limited military service and 430,000 being totally disqualified. In addition, 100,000 have been rejected because of lack of educational qualifications equivalent to the American fourth grade in grammar school.

Those men with physical and mental defects that have caused them to be classed as available for limited military service may still be taken into the army and their services utilized if the emergency should warrant such action in the future. Of the 1 million who have been classed as being unavailable for general military service, it is estimated that 200,000 have defects that can be remedied by proper treatment and become available for general military service.

A close study of the statistics completed to date shows a need for improvement in the health of our young men. Approximately 50 per cent of those examined were found unfit for unlimited military service. Some of the physical conditions of the remediable I-B men could and should have been prevented by proper attention to health during the years of early childhood and up to the age of enlistment. It is, therefore, apparent that much of the responsibility rests on you as parents. Many of you failed to see that your sons received the medical and dental care essential to their health.

Strangely, however, the majority of parents thought that their children were being properly cared for, until the statistics of Selective Service revealed otherwise. This has resulted in a material reduction of the number of men available for the military forces.

To remedy this unfortunate situation, two plans have been proposed: one is known as Prehabilitation and the other as Rehabilitation. Both merit and need your hearty support. Prehabilitation is concerned with the correction of remediable defects before the prospective soldier reports to his local board for examination. Rehabilitation is the correction of such disabilities after the registrant has been rejected by the local Selective Service Board or by the Induction Board of the army.

Prehabilitation is a word coined in the Medical Division of Selective Service to meet the great medical need for correction of physical defects. The plan is to have the registrant, through foresight and intelligent action, render himself fit for military training and service before he is examined by his local board.

The requirements for soldiers are known; all the necessary information is readily available. The standards for admission to the army are reasonable and not at all difficult to attain.

Every registrant suffering from minor disqualifying defects can, by consulting his family doctor or dentist, as the case may be, have these defects remedied. *(Continued on page 60)*

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CIVILIAN MORALE

By Douglas A. Thom

WAR AND THE varied interruptions that occur in both public and private life due to the necessity of making new and unanticipated changes of a social and economic nature create in many persons a peculiar state of mind characterized by fear, excitement, restlessness and insecurity.

War itself is not the cause of neurotic and psychopathic personalities but, like any other crisis, it tends to bring these manifestations of emotional instability to the surface. Throughout the population in general the emotions become more mercurial, more sensitive and responsive to environmental factors. The timid and the cautious tend to become a bit more so, and the bold and courageous to find emotional outlets in venturesome activities.

There is a group in which a rather childish, artificial bravado prevails which bids one to eat, drink and be merry. It is this state of mind which permits a person to follow out his own devices uninhibited by the restraints which are naturally imposed in normal times. The desires of the moment are not restrained by the reality of the total life situation. Rather flimsy excuses are accepted in lieu of sound reason. Morals are likely to be relaxed. Financial credit is extended to the breaking point; many a person indulges himself in a new refrigerator, automobile, or radio, succumbing not so much to the convincing arguments of a fluent salesman as to the demand of an emotional appeal.



The civilian during war must direct his own efforts enthusiastically toward the attainment of the common goal — the group welfare.

Youth naturally falls in line with the examples set by parents, and their revolt is likely to be against such restrictions as are imposed on them by their scholastic obligations and parental authority. As one lad puts it, "What's the use of studying, staying in nights, going without fun? We're all going to be cannon fodder soon." Like the adult, this 15 year old boy was dramatizing the war situation in an effort to avoid the restraints imposed on him by the home and the school. Marriages, too, have had an unprecedented increase during the past year. There is reason to believe that many of these partnerships have been undertaken with little consideration of the responsibility that marriage entails. "We're here today and gone tomorrow and are entitled to something worth while before we go," is the attitude of a 19 year old boy, trying to convince his parents that marriage would be wise at this time, notwithstanding the fact that he had nothing to contribute in the way of support for either himself or a family.

The state of mind created by a national crisis assumes an importance which apparently overshadows every other personal obligation and responsibility and offers an unlimited opportunity for rationalization or self deception. The directing forces and inhibitions of normal times give way to a more instinctive, impetuous, impulsive type of behavior. There

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in WAR

is undoubtedly a small group of persons in which this behavior brings out latent abilities and establishes confidence and courage that might otherwise never have come to fruition. For the great masses, however, this new liberty and license serve no useful purpose and account for many persons becoming temporarily wrecked and a certain number permanently ruined in their efforts to satisfy the emotional unrest created by war.

Realizing that the civilian population will be subjected to greater physical stresses



Those ineligible for physical reasons are anxious to be of service to their country.

because of the speed-up in industry and more intense mental strains caused by our awareness of what is going on all about us, due to the press, radio and the moving picture, we must anticipate the effects of these additional strains and consider ways and means by which they may be reduced to a minimum.

Morale as it relates to the civilian and to family life during war must of necessity bear



Service marriages create problems for young wives who must forego the joys of home life.

a rather direct relationship to the stability of the community and the family prior to this period.

The morale of the civilian during war is not peculiarly different from that in time of peace. It continues to be a state of mental and physical well-being that allows him to direct his efforts enthusiastically and consistently toward the attainment of a common goal and to subordinate his own personal wishes and natural inclinations to the welfare of the group. Parents are continually and persistently doing this very thing for the family. There is nothing new about this thing we call morale. It just becomes more publicized before and during war. It calls for the same physical, emotional and intellectual response, but in a different setting. Consequently, it is easier to transfer this attitude of courage and confidence and feeling of security from one situation to another than to build up or create something new which heretofore has never existed. Family morale can readily overflow and become a community or national morale.

The civilian population will be confronted with a new set of social, moral and economic problems engendered by the war situation; some of these problems will bear directly on family life.

During the period of mobilization marriages undoubtedly will reach a high peak, as already evidenced by the available statistics. In New York City the number of marriage licenses granted for the first half of 1941 was 38,918, an increase of 25 per cent over the preceding

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year; while in Massachusetts, cities are reporting increases in marriage ranging from 15 to 88 per cent during the first four months of 1941. Boston reports an increase of 36 per cent. The birth rate is making a corresponding increase, and there were twenty thousand more babies born in the United States during the first third of 1941 than for the same period in 1940, the present birth rate being 18.5 per hundred thousand population, very close to the German birth rate of 1937. These increases, however, will not continue during actual warfare. In the World War the annual marriage rate in the United States decreased approximately 7 per cent; in Germany 50 per cent; in France 70 per cent; and it is estimated that in 1943 the actual number of births in the United States will be reduced by some thirty-five thousand. During the World War the American annual birth rate was cut by approximately 12 per cent.

Thus, it is obvious that there are two distinct marriage problems: first, that created by what we may term service marriages; and second, the problem of postponement of marriage due to actual war.

With reference to the first problem, we shall find that thousands of women embark on their marriage and motherhood without the sustaining influence of a partner and a normal home life. This is unhealthy from a social point of view and individually a condition that may result in many unhappy marital situations at the termination of the war. Many of these marriages have been entered on with little thought of the long months of maternal responsibility and moral obligation which must be assumed without any of the compensations of a happy family life. Since it would be surprising if many of these young women did not approach motherhood and so uncertain a future with reluctance, the important psychologic problem related to rejected children is one that cannot be overlooked. Those who assume their responsibility of motherhood willingly will later be confronted with the difficult task of bringing up an only child in a fatherless household, which in itself is a situation requiring special attention.

In the consideration of civilian morale, this problem cannot be minimized. A concerted effort should be made to provide these young, untrained wives and mothers with all the assistance and guidance possible in an effort to build up their morale and help them meet these new responsibilities efficiently and happily, in order that their children may be provided with an environment physically adequate and uncontaminated by emotional stresses. It should be a community responsibility to organize nurseries and nursery schools to provide physical care and mental stimulus for these children and to provide these young mothers with opportunities, through adult education centers, to gain a knowledge of the fundamentals of child training. Many of these young wives and mothers will be happier at work and an effort should be made by community organizations to see that such vocational service as they have to render is utilized. Some such plan, well conceived and put into operation, would contribute much to the future happiness of this particular group.

It is estimated that approximately 60 per cent of the men registered for the selective draft, who have come up for examination to date, have been rejected. Providing adequate medical care for these men represents one of the most important of all the civilian problems and one that demands immediate attention. Many of these men have been turned down because of some anatomic or physiologic defect of which they were unaware or which they did not consider as in any way incapacitating them from functioning normally in peace time. In Massachusetts, of the draftees examined, 18 per cent were rejected because of defective teeth, approximately 15 per cent because of defective vision, 10 per cent for cardiovascular disorders, and about the same number for neuropsychiatric disabilities. These represent the four largest groups. Many of these men feel that they have been stigmatized socially because of their rejection with the result that, added to the knowledge of their impaired physical status, they have to contend with a feeling of distinct social inferiority based on their rejection. The number of men in this category is so large that we cannot afford to overlook the effect that the group as a whole may exert on the morale of a community as well as their own families. Anxious to be of service to their government in time of need, with a strong feeling that they have something to contribute and a determination to make the necessary sacrifices, these rejected men find that they are neither needed nor wanted—at least, that is their attitude—and that there is no place for them in this critical period of national emergency. They are humiliated to see their friends and neighbors, some of whom they know to *(Continued on page 64)*

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Meat
and the Family Budget

Meat has an important place in the family budget, even if economy is the keynote. For meat is not only nutritious but also "nutritionally economical."*

For appetite appeal, few components of the "balanced meal" have the value of meat. When the meat comes to the table—whether it is steak, or chops, or hamburger—something comes into the room with it that makes eyes light up and appetites glow.

Good cooks know and scientists confirm that *the wish to eat*—having your appetite tempted—is a big step toward better nutrition.

For proteins—to help rebuild muscles and other tissues—meat is an outstanding food that can be eaten daily, in adequate amounts, without jading the appetite. Its proteins are of the highest quality, thus they enhance the nutritional value of other protein foods.

And meat of course contributes liberally to our daily needs of B vitamins, iron, copper, and phosphorus.

For what it contributes to the meal, meat is nutritionally economical. Serve it in reasonable quantity, to help stimulate appetites, to help initiate good digestion, and for its high nutritional value.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

*Hygeia, October, 1941, p. 822.

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
CHICAGO

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A defense program against Pneumonia

PNEUMONIA often attacks without warning. Usually, however, it is preceded by a common cold, influenza, or other infection of the breathing passages. So, it is wise to take good care of yourself whenever you have a common cold. Catch these infections early, and do not let them drag along until they become serious.



Avoid exposure to chilling and fatigue

When a cold hangs on, and you feel generally miserable and feverish, be especially cautious. Avoid exposure to chilling, and particularly fatigue, late hours, and overeating. The two safest and sanest steps to take are: 1. *Go to bed;* 2. *Call your doctor.*



Dress the children warmly

The first sign of pneumonia is generally a severe chill followed by fever. Even more definite symptoms are coughing, pain in side, thick, rust-colored sputum, and heavy breathing. Usually these signs are not just forerunners. Generally they indicate actual pneumonia.

The pneumonia death rate has been reduced over fifty percent in the past three years. Nevertheless, the first essential for successful treatment still is early diagnosis. This permits the prompt use of the powerful new sulfa drugs when the physician (and only the physician) prescribes them; it makes possible early determination of the type of pneumonia, and use of serums if advisable.

The difference between a quick cure and a long, serious, perhaps fatal, illness depends upon getting a doctor—not tomorrow, but *immediately.* Given the chance to treat more pneumonia cases early, America's doctors and nurses can still further reduce pneumonia fatalities. By calling the doctor early and getting nursing care, you can help him to use more successfully the weapons of modern science.



If a cold hangs on, go to bed . . . and have the doctor call!

Metropolitan's free booklet, 12-Z, "Respiratory Diseases," contains many valuable, practical suggestions to help you ward off trouble. Write for it.

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The Hospital Library

(Continued from page 25)

These lists are well annotated. This is particularly helpful because in special instances, when books are questionable, it is desirable to have this point emphasized. An example of the great value of having the questionable books listed is that of the recent story, "Blue Cloak," by Temple Bailey. Miss Bailey is generally recognized as a writer of light love stories which seem harmless. The annotation from the "Hospital Book Guide" of April 1941 said: "This book contains a violently insane character who plays a large part in the story. One reviewer considers it unsuitable for hospital use."

Another publication of the American Library Association which is a much used aid in making selections for hospital purchase is "Books for Tired Eyes," a list of books in large print. This list is especially useful when there is a choice between several editions of the same book.

A recent instance of the splendid cooperation of the medical and nursing staff with the librarian is that of the small boy who was recovering from St. Vitus' dance. The doctor specified no exciting books. The hospital librarian consulted with the children's librarian and "Black Velvet Story" by Dee Smith was suggested. It is a story almost guaranteed to put children to sleep with its soothing quality. The nurse in charge was so interested in the book that she called it to the attention of a doctor who specializes in pediatrics. The doctor was impressed to the extent that he is buying a copy for his own use with private patients.

Last year the library expanded the hospital service to a biweekly basis, which has proved most satisfactory. In this way more of the patients are reached.

Another recent innovation was to have the librarian wear a white uniform. It thus places her in a position of really belonging to the hospital and practically does away with the patients questioning, "How much do the books cost?" It has met with the approval of the hos-

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pital authorities for cleanliness and neatness are primary factors in hospital routine. The expenditure the library makes for this service represents approximately twenty-five hours a month of salaried time for the hospital librarian. No definite budget is made for the purchase of books for hospital use. Since many of the books are received as gifts and many of the books from the regular library collection are used an average of about $35 a year is the total expenditure for books and magazines. A rather small sum for the valuable service rendered.

Many new borrowers are gained for the library through the hospital service and it has been said that it is one of the best forms of publicity for both the library and the hospital. However, it certainly should not be thought of in terms of a publicity stunt for either institution.

The great need for the hospital library service is clearly stated by Dr. Frank R. Peterson, head of the Department of Surgery, General Hospital, Iowa City, Ia.: "I consider a hospital library to be invaluable as a sedative in case of worry, as a stimulant in case of depression, as a tonic in case of failing mental appetite, and as a specific for what ails all sick people."

ALCOHOL IN ACCIDENTS

The intoxicated pedestrian is as important a factor as the drunken driver in the problem of highway safety, Thomas A. Gonzales and Alexander O. Gettler, New York, conclude from a study, reported in *The Journal of the American Medical Association*, of the alcohol content of the brains of 3,471 persons killed in vehicle accidents in New York City during the period from Jan. 1, 1928 to Dec. 31, 1937.

They found that 1 motor vehicle driver was killed to every 11 pedestrians and that 30.7 per cent of the latter were under the influence of alcohol at the time of their deaths.

Although their study was limited to one city, they say that the figures obtained should be fairly indicative of conditions in other large communities.



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By RUTH COWAN CLOUSE

Essentials of an Adequate Diet: V

All the factors of the vitamin B complex needed by the normal person are included in a sane, comprehensive diet

DEFINITE AMOUNTS of the so-called vitamin B complex other than thiamine, riboflavin, and nicotinic acid cannot be included in the dietary allowances recommended by the Committee on Food and Nutrition of the National Research Council at this time. However, discussion of human dietary requirements demands some mention of these vitamins.

The exact make-up of the vitamin B complex is still not completely understood. This is in spite of the fact that one of the members of the complex (thiamine) was the first substance to which the name "vitamine" was applied in 1912; also the multiple nature of the complex has been known or suspected for more than twenty years.

Most of the members of the vitamin B complex which have been recognized have been isolated from either yeast or liver. Artificial combinations of any of the known factors have not been shown to have the full nutritional effect of a water extract of either of these foods. The vitamin B complex is therefore sometimes defined simply as that combination of water soluble vitamins which occurs naturally in either yeast or liver. Individual members of the complex are known to exist in many other foods. Probably the entire complex exists in at least some of these other foods also.

The known factors of the vitamin B complex other than thiamine, riboflavin, and nicotinic acid include substances which have been given such strange and unfamiliar sounding names as pyridoxine (vitamin B_6), pantothenic acid (so-called because it is believed to be essential for all plant and animal life), choline, inositol, para-amino-benzoic acid and biotin. These names, full of meaning to the chemist, may become more familiar to the general public as knowledge concerning their functions in the human body increases.

Each of the factors named has been obtained in crystalline form. Each has been shown to be essential for the nutrition of animals. Dramatic results have been obtained with pyridoxine in the treatment of certain disorders in man. Inositol and para-amino-benzoic acid each have attained considerable notoriety because of popular misinterpretation of recent scientific findings.

Inositol has been identified as the factor which is responsible for the prevention of a peculiar type of baldness which can be produced in mice. For this reason this substance is sometimes called the mouse anti-alopecia factor or, simply, the "anti-baldness factor." The use of the latter term is to be deplored because it apparently has led many persons to believe that baldness in man may be prevented or cured by the administration of this vitamin. At present, however, there is no evidence to indicate that the administration of any amount of inositol will have any effect on the type of baldness which occurs in man.

It now seems well established that one or more of the members of the vitamin B complex is essential for the maintenance of the normal black color of the fur of certain species of rats and of some other animals including the beautiful and economically valuable silver foxes. The identity of this factor or factors has not been established with certainty. Among the substances which have been suggested as identical with the anti-gray hair vitamin are pantothenic acid and para-amino-benzoic acid.

Whenever a vitamin is shown to be essential for more than one species of animal it is logical to attempt to determine its function in human nutrition. Para-amino-benzoic acid has received special attention in the popular press because of reports from two eastern laboratories to the effect that relatively large doses have led to the restoration of natural hair color in human subjects of all ages. These results have not received adequate confirmation and it is much too early to assume that para-amino-benzoic acid is a panacea for the restoration of a semblance of a long lost youth. It is within the range of possibility, however, that the loss of hair color may be postponed by the consumption of a diet rich in this and other factors of the vitamin B complex from early youth. Persons tempted to experiment with crystalline para-amino-benzoic acid should be warned that this drug should be taken with extreme caution and only under the close supervision of the family physician since it is known to counteract the curative effect of certain other drugs used in medicine and may have other dangerous side effects which have not yet been recognized.

It should be apparent from the foregoing discussion that although little quantitative information regarding the less well known factors of the vitamin B complex is now available, there is sufficient evidence of the importance of at least some of these factors for human nutrition to indicate that it is well to select a diet which can be assumed to contain significant amounts of

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the entire complex. Since liver is known to be one of the richest sources of the vitamin B complex, this food should appear frequently in the diet. Other rich sources of the majority of the factors, if not of the entire vitamin B complex, are milk and the bran and germ of cereals. The latter products may be obtained as they occur naturally in whole grain cereals or as they have been milled separately by the miller. In special instances where the fiber content of whole cereal or bran may cause distress or where more concentrated sources of the vitamins are needed, dried yeast or a concentrated extract of yeast may be employed. The crystalline vitamins should be used only under the direction of a physician and in circumstances where a specific vitamin deficiency is indicated.

The foods which have been named as rich sources of the vitamin B complex also are foods which have been included in the dietary pattern recommended in the first article of this series (HYGEIA, August 1941, p. 644). It should be pointed out also that many of the other foods included in the recommended dietary pattern, namely eggs, meat, potato and other vegetables and fruits, are known to contain one or more factors of the vitamin B complex in more or less concentrated form. Therefore if this pattern is followed and if as wide a variety of foods as possible is selected, with frequent servings of liver and generous quantities of whole grain cereals or in special instances wheat germ or yeast, the diet in all probability can be relied on to supply all of the factors of the vitamin B complex needed by the normal person.

ANOTHER GOOD REASON FOR PHYSICAL FITNESS

Another argument for maintaining physical fitness is contained in a report in *The Journal of the American Medical Association* by Edward K. Cravener and Donald G. MacElroy, Schenectady, N. Y., which suggests that the sedentary person in poor physical condition is more liable to injuries of the cartilage between the knee joint than is the well developed person. This is based on a study of 1,700 of their own and other cases reported in medical literature.

WANTED—

Parents to find their children in this chart

This chart indicates what Dole Pineapple Juice contributes to the daily allowances for specific nutrients recommended by the Committee on Food and Nutrition of the National Research Council. The left-hand column gives recommended amounts. The right-hand column represents the percentage of the recommendations found in a 6-oz. serving of Dole Pineapple Juice.

Percentage contributed to daily recommendations by a 6-oz. serving of Dole Pineapple Juice	THIAMIN B_1		ASCORBIC ACID C	
	REC. N.R.C. MGS.	DOLE	REC. N.R.C. MGS.	DOLE
Children 1-3 Years	.6	50%	35.	34%
Children 4-6 Years	.8	38%	50.	24%
Children 7-9 Years	1.0	33%	60.	20%
Children 10-12 Years	1.2	25%	75.	16%
Girls 13-15 Years	1.4	22%	80.	15%
Girls 16-20 Years	1.2	25%	80.	15%
Boys 13-15 Years	1.6	19%	90.	13%
Boys 16-20 Years	2.0	15%	100.	12%

Authoritative analyses and assays accepted by the Council on Foods and Nutrition of the American Medical Association show that a 6-oz. serving of Dole Pineapple Juice (approximately 100 calories) contains 240 I.U. (12. mg.) of Vitamin C (Ascorbic Acid) and 100 I.U. (0.3 mg.) of Vitamin B1 (Thiamin).

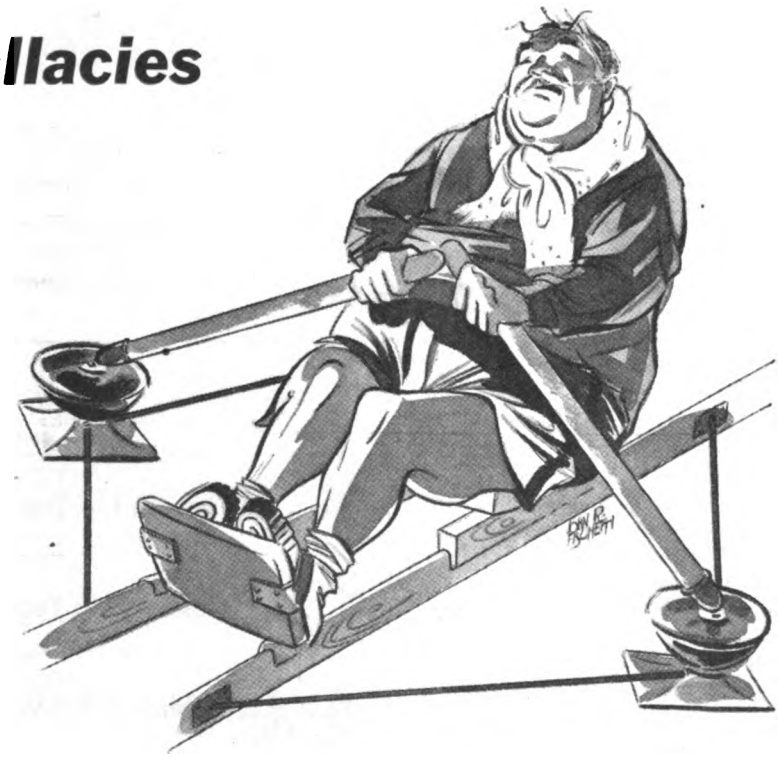


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Food Fads, Fallacies and Facts: VI



By DORIS W. McCRAY

AFTER A HARD DAY at desk work, the "brain worker" may think that he should eat a heavy meal. Many people contend that the appetite and the instinct are accurate guides to diet. Many overweight persons carry the heavy load of their own bodies year after year and consume huge amounts of food in the belief that, in this manner, they are getting the most pleasure out of life. Thus fallacious ideas about food may result in extravagance, or undernutrition.

After a heavy meal, mental activity is definitely inhibited; most brain workers eat a light luncheon. Groups of people sitting at rest, or taking final examinations, or doing various kinds of manual labor, have been tested in the calorimeter, a device for measuring energy expended. Here are some interesting results that shed some light on the problems of a stenographer trying to remain slim, or the business executive who wants to retain his athletic figure, as gleaned from Benedict's reports:

"The specific energy needs during severe mental effort would be met by a very small caloric increase in the diet. An increase of 4 per cent in energy expenditure (over resting without mental effort) would be, at the most, 3 or 4 calories per hour. From the food standpoint, the increase in metabolism during an hour of severe mental activity, that is, approximately 4 calories per hour, would be supplied by about 1 gram of cane sugar or 1½ grams of white bread, 4 grams of peeled banana, or in a more concentrated form, one-half of a peanut. These figures only serve to show the extremely small increase in energy expenditure accompanying intense, sustained mental effort. This cannot be due to actual activity of the cells of the brain, but to such motions as turning the pages of the book, writing, shifting position in the chair, and the like."

The college professor engaged in severe mental effort at his desk in the library would, in one hour, expend perhaps 3 or 4 extra calories. The housemaid sweeping and dusting the same room would have expended the same amount of excess calories in approximately three minutes. Her extra energy requirement would be met by one-half a peanut in three minutes, or 10 peanuts in an hour. This bit of knowledge serves to emphasize that many office workers eat too much and gain weight. They should have more exercise, play golf or walk to work, and they should eat light nutritious meals which are low in calories but high in vitamins and minerals.

That the appetite is accurate as a guide obviously is incorrect. Each person should learn to know when he has had enough food to satisfy his need without discomfort.

Fat people—no need to tell them—have a difficult problem. They experience greater fatigue from doing ordinary work which would not tire them if they were normal. They are reminded of shorter life expectancy by the mortality tables of life insurance companies. They spend money for food which they could use for other purposes. The whole problem of overweight involves extravagance rather than economy.

Many people have the idea that greasy foods, or foods containing fat, are undesirable in the diet. An

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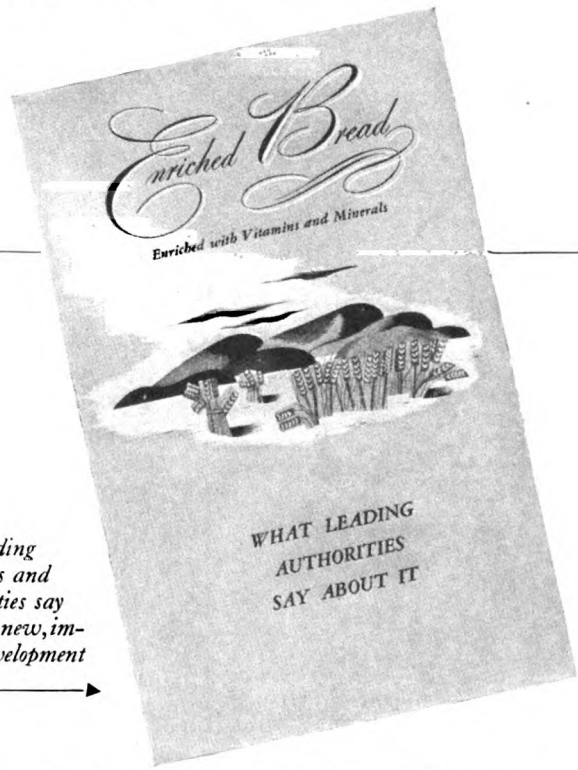
early writer stated fallaciously that "oil or fat is more difficult of digestion than any other alimentary principle. Many dyspeptics who avoid meat, butter and oil unwittingly eat it in concealed forms." However, we may be assured today that fat and oil are well tolerated and digested by the normal person. Modern processes of refining produce palatable fats which may be combined with other foods to make tasty dishes. Cottonseed oil (either as salad oil or hydrogenated to use in cooking), corn oil, peanut oil, coconut oil and other fats and oils are useful, except in case of allergies where the one particular kind of fat or oil cannot be tolerated. The normal person can eat all the fats used ordinarily for food, either alone or in combination with other foods. The fat in meats is usually well tolerated. In the highest grade meat, the animal is fattened so that layers of fat lie between layers of lean; when the meat is roasted the fat bastes the lean, making it more tender and flavorsome. Fat meat is nutritious and wholesome and is well tolerated by most people; it is made most palatable when roasted brown without burning. When fats are used for frying, one should avoid burning or scorching them. Normal persons tolerate fried foods in reasonable amounts.

Fats furnish food energy in more concentrated form than other foods. The following comparison is interesting: fats furnish approximately 9 calories per gram, carbohydrates 4 calories per gram and proteins 4 calories per gram. Some of the fruits and vegetables are quite bulky compared to the fats.

In digestion, the fats are split, absorbed, then recombined. After a meal rich in fat, this fat is rapidly distributed by the blood to the tissues and used as fuel or stored for use as fuel in the future. When oxidized, its energy is used for essentially the same functions as those of carbohydrate. Butter and cream and some other fats furnish vitamin A.

Some fats are inexpensive and are suitable foods; they must be chosen in low cost diets. In the middle and higher income groups, more appetizing fats may be selected, such as butter. Oleomargarine is tasty and produces excellent results in cake making and other cooking. Bacon fat is useful in the prepara-

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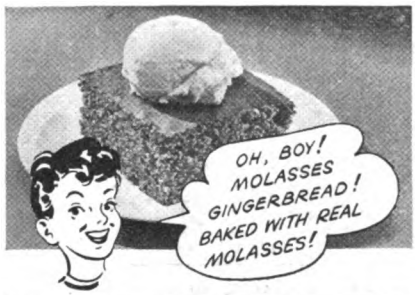
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tion of such dishes as cornbread. Chicken fat may be used for cake making or for seasoning vegetables. Newest methods produce lard which is bland and smooth in texture. In the past, lard may have been unsatisfactory in flavor and keeping qualities, but that need not be true today.

It has been a common belief that both pork liver and beef liver should be soaked in cold water before they are cooked, and that they should be cooked very thoroughly. It is necessary to cook pork completely because of the danger of trichinosis, but beef liver can be served rare. If the liver is absolutely fresh when sliced, and kept under refrigeration, the odor is fresh and there is no necessity for washing, rinsing or soaking. The idea originated from the fact that inadequate refrigeration allowed the blood in the liver to oxidize and develop a stale odor which could be removed by soaking. The blood in liver and other meats is nutritious; it furnishes iron and other essential elements. It is digested and utilized economically; the composition is similar to that of the blood in the human body. Meat is valuable for human nutrition. From the standpoint of economy of production, the animal should be fully matured before it is butchered.

Gelatin is made of the clean portions of skin, and sometimes bone and gristle. Sanitation is paramount, in order that manufacturing losses be avoided. As in the canning of meat, little time must be allowed to elapse, refrigeration temperatures must be correct and all the other conditions must prevail which are necessary to produce a sanitary food, flavorless and suitable for desserts and salads. There is a high degree of efficiency in packing houses today, and federal inspection of meat protects the public.

Because a strong flavor does not appeal to popular taste, there is some waste of food which otherwise would be fit for human consumption. In other cases, the food is lacking in flavor; "dog and cat food" make a market for such wholesome meat. In the past, prejudices against eating liver and brains were overcome when they could be kept properly refrigerated, delivered to the home in sound condition and made palatable by proper cooking.

Some prejudices have been overcome by improving the foods themselves. Grapefruit is much milder in flavor and freer of seeds and membrane than when it was first marketed, and has attained wide acceptance. Citrus fruit juices also are available in canned form. Citrus pectins utilize surplus fruit and trimmings from the canned fruit in the same manner that they are used from apples for apple pectins. The finest citrus pectins have no characteristic odor or flavor. Orange jelly can be made free of bitter flavor, but that flavor is valued in orange marmalade, and people acquire a liking for it.

If a food can be conserved for human consumption and sold with profit, it helps promote national economy. Under the heading of economy, we might call attention to the desirability of studying further the use of grain by industries that manufacture alcohol for beverages. It may be wise to consider national economy for the future. Various traditions in the home cause waste: Orange peelings are perfectly good food; they can be cooked tender, then candied in a syrup to make them tasty. Potato peelings are palatable when they are left on the potatoes and baked. Carrot peelings are good food if washed thoroughly; raw young carrots may be scrubbed and served as appetizers in a manner similar to radishes and celery. Clean carrot parings may be cooked with trimmings from meat into a tasty soup. Parsley, celery leaves and the bottom of the celery stalk may also be used. Various table scraps may be thoroughly boiled to sterilize them.

Foods may be mentioned which are still less appetizing, due to custom and tradition, but are used for human food at lower economic levels. Horse meat is eaten in some parts of the world, as is meat from goats, dogs or cats. In our own country the so-called "canner cow" furnishes meat that is less tender, but the flavor is good and the meat wholesome. A book entitled, "Why Not Eat Insects?" has a valid argument. Snails, eels and birds' nests are considered delicacies in some countries.

At one time in history tomatoes were considered poisonous, yet they have been developed from small love-apples into large meaty varieties that are nutritious and appetiz-

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ing. Appendicitis was once said to be caused by eating fruit seeds, but this was never proved, and the fruits that contain small seeds continue to be eaten as an important part of the meal. Strawberries were supposed to be a blood purifier, but in that role they are now known to be no better than any other food; the blood is not "purified" in the popularly conceived manner but is furnished with the valuable minerals and vitamins found in fruits such as strawberries. An apple a day was said to keep the doctor away, but we all know now that apples are a useful food for normal people but have no magic power to prevent or cure disease.

Food economy includes the use of skimmed milk and soured milk, and the greater utilization of eggs stored under correct conditions of humidity and temperature during the season when they are plentiful. Dried foods help conserve surpluses advantageously. In our homes, we can serve simpler meals, reduce the size of servings of cake and pastry and omit refreshments between meals. With a better knowledge of optimum nutrition, we can plan for economy in the future.

INFLUENZA VACCINE

Recent investigations which revealed vaccines for influenza A to be effective in reducing the incidence of that type of the disease are hailed in an editorial in *The Journal of the American Medical Association* as offering "the most encouraging evidence of practical applicability of influenza vaccination which has so far appeared in the literature."

The Journal points out that F. L. Horsfall Jr., E. H. Lennette, E. R. Rickard and G. K. Hirst have just reported their findings from a large scale use of a vaccine composed of the virus of influenza A and the virus of canine distemper, treated with formaldehyde to kill the viruses.

In a recent investigation, single injections were given to volunteers. The incidence of influenza A was 50 per cent lower among the vaccinated groups than among the unvaccinated groups who were living under identical environmental circumstances.



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Health at the Crossroads

(Continued from page 17)

in women who are having their first babies. She works closely with the family doctor in each case and follows his instructions in carrying out her procedures. She helps the patient with problems of diet, dress, rest, exercise and others which arise during the course of a normal pregnancy. If the baby is to be born at home, the nurse suggests the supplies needed and often helps obtain them. She works out the procedures to be followed when labor begins. She reports regularly to the family doctor on each normal patient and notifies him at once if unusual symptoms develop. Thus the physician keeps indirectly in touch with the patient between her regular visits to his office. If the mother is going to the hospital to have the baby, the nurse acquaints her with hospital routine procedures, lists the equipment she will need and tells her what to do when labor starts.

At the time of delivery, nursing care for mothers delivered at home may be given by the health department nurse or by other nursing agencies. Many modern hospitals have extended their obstetric departments to include home maternity nursing services. In several counties the hospital service not only includes nursing care at delivery but also during the postpartum period.

The health department nurse visits the mother and baby several times during the baby's first year. Here again she is guided by the standing orders of the family physician. She helps with feeding programs and with other problems which confront the mother. She explains the importance of early immunization to diphtheria and smallpox and of avoiding contacts with other communicable diseases.

The nurse follows the family with visits during the child's preschool and school life, making as many calls as time permits. She may be requested by the family physician to make special calls. It may be a tuberculosis case in a home, and she is trying to have the other members of the family go to the physician for tests and x-rays to be sure they, too, have not contracted the disease. It may be a crippled child, or a school child needing a tonsillectomy or glasses. It may be a child with scarlet fever, and she calls to demonstrate nursing care to the mother or attendant, including how to bathe the patient, preparing the child's food, and teaching methods of isolating the child to prevent the spread of the disease in the home. The nurse is of help on these and other similar situations which occur in every family. The doctors of the area feel that the public health nurse is a real help in assisting them in the medical supervision of their patients.

The nurse visits the schools of her area, making planned calls to assist teachers with their school health problems. They work together in selecting children who should go to the family physician for medical examinations or for the correction of defects. The nurse helps the teacher with her routine weighing and measuring of children and shows her how to check their vision and hearing. Together they work out health education programs. The health department staff is always on call by the teachers to advise in communicable disease problems or unusual health situations.

No small part of the nurse's time is spent in working with groups of parents. These may be Parent-Teacher Associations, service committees, commercial clubs, hospital guilds or other organizations interested in developing health programs. The nurse acts as an advisor to these groups and encourages them to solve health problems. She knows many of the resources the people can use and has available supplies of reading material. She can also coordinate the work of different organizations interested in the same area.

The modern health department staff should include a well-trained

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Pure Food Detectives

(Continued from page 29)

one suspected plant--about $50,000 worth of butter in all. Some lots were of market quality, others were adulterated with mineral oil and some were short in butterfat. The adulterated butter had to go to soap manufacturers. Butter low in fat had to be reworked.

Uncle Sam's food chemists are veritable magicians in differentiating between pure and impure foods. They are especially adept at studying the molds that the microscope finds in tomato products such as catsup, puree, paste, sauce and soup, having found that these molds serve as a reliable guide to the condition of the raw tomatoes from which the product was made. Expert analysts can tell whether catsup which looks uniformly red and free from defects was made from cracked, sour and moldy tomatoes, or from healthy stock. A flattened drop of tomato material between two plates of glass, when observed through the all-revealing microscope, may show filaments of mold. The analyst examines successive "fields of view" by moving the slide on the microscopic stage. He then calculates what percentage contains mold, a procedure commonly referred to as the "mold count." If it is beyond normal for good stock prepared under suitable manufacturing conditions, the shipment and the shipper are subject to legal action.

The high standing in the courts of this evidence of decomposition is proof of its reliability, says the Administration. Many packers also use the same method to check on their sorters and trimmers. One reason for the reliability of the method is that pulped products like catsup and puree possess a remarkable uniformity of composition, so that several drops taken at random will give a mold count that is accurately indicative of the whole batch.

Tomato products continue as the most important field for the mold counter's activities. The microanalytic division of the Administration, however, uses this method for tests of jams, jellies, fruit butters, strained vegetables, butter and other foods, with such variations of technic as differences of tissue structure and other factors may require. Officials are confident that the continued development and adaptation of the mold count method to an increasing variety of prepared foods will enable greater consumer protection under the law.

Food poisoning has been discussed in detail by HYGEIA on frequent occasions, so it is not necessary to go into the matter very deeply here. However, it is interesting to note that the most significant observation during the Administration's experience with bacterial food poisoning in the past year concerns the frequency with which toxigenic cocci may occur, and the variety of foods which may become toxic because of their presence. This type of micro-organism, previously found in cream-filled



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pastries, has also been found to produce toxin in other foods held over in the home or restaurant, notably ham and certain food sauces. It is apparent that these organisms, recognized as causes of food poisoning only in comparatively recent years, are extremely important factors for consideration in any program for the prevention of illness following the consumption of food.

The Administration continues to emphasize the frequency of poisoning through carelessness in the storage of insecticidal poisons in the home. Products like lead and calcium arsenates and sodium fluoride may readily be mistaken for flour or other similar white, powdered foods. Such mistakes have caused innumerable cases of poisoning throughout the country, many of them fatal. It has become a routine practice for the Administration to issue warnings against carelessness in the storage of such products in the kitchen or in any place where they can be reached by small children.

The federal sleuths are continuing their campaign against filthy candy. Armed with the new provision in the food and drug law which authorizes seizure of interstate shipments from a factory whose sanitary conditions result in contaminated or dirty candy, Administration inspectors during 1940 made sanitary inspections in some 150 candy factories. The inspections revealed that healthy conditions prevail in most of the plants. There were 66 seizures of confectionery in 1940 because of filth or because of production under insanitary conditions.

Notable improvement has been made by the fishing industry in the quality of fish shipped out of New England, according to Administration officials. Only 24 consignments of fish or fish fillets, including ocean perch, cod, haddock, whiting and pollack, were seized last year, compared to 233 lots in 1939. In volume, the 1940 seizures involved less than 87,000 pounds, while the total seized in 1939 is estimated at more than ½ million pounds. Many of the boatmen, in an attempt to deliver fish to the market in the best possible condition, have virtually sterilized the holds of their vessels and have further insulated them against outside temperatures for the trip of 300 to 500 miles from the fishing banks to the fish piers.

Ten years ago, drastic action was necessary to control shipment by a few establishments of diseased or partially decomposed dressed poultry. A material improvement resulted. During the past year, however, there was a limited recurrence of this type of offense. In one eastern state it was found that serious respiratory ailments were prevalent among poultry, and that to prevent losses several packers were dressing diseased and even dead birds for shipment to the market. Such consignments were seized, and criminal action was taken. Other seizures of dressed poultry based exclusively on the presence of decomposed fowl brought the total seizures to 18.

Ground turnip flavored with synthetic mustard oil is not horseradish, nor is grated parsnip root. Neither of them is "just as good," according to complaints that reach the Administration from dealers and consumers who pay for horseradish and find that these unacceptable substitutes lack the tang and flavor of the real article. This particular food fraud is not practiced by reputable manufacturers and is not large compared to some of the more serious conditions which the food detectives encountered. It is, however, a good example of "cheap cheating" and arouses as much opposition among reputable dealers as among consumers, the Administration finds. To handle these complaints the food technicians had to devise careful laboratory tests that would distinguish real horseradish from the cheaper substitutes. They succeeded and are making this form of substitution too dangerous to be profitable. Inspectors, however, are still keeping an eye on the market and are ready to submit doubtful specimens for the kind of analysis that will detect adulteration.

An importation of processed cheese packed in round boxes having false bottoms failed to get by the watchful eyes of the federal food sleuths in New York recently. Cheese from the same shipper had formerly been packed in 8 ounce boxes of the same size and shape as those detained, but those boxes were full of cheese and labeled as containing 8 ounces. Later on, the shipper reduced the quantity of cheese to 6 ounces. He changed the label accordingly and used pieces of cardboard to fill the box. Finally, he cut the cheese to 3 ounces but continued to use the 8 ounce box, adding a false bottom. The importation was detained on grounds of misbranding under the federal pure food and drug law. The boxes bore an inconspicuous declaration of a net content of 3 ounces. The law requires that a plain and conspicuous statement of the exact amount of food contained be printed on all packaged foods shipped in interstate or foreign commerce.

No consumer cheat is so profitable potentially as adulteration with water, and surprisingly it is one of the most difficult to detect and deal with under the law. Nothing can be said in defense of a manufacturer who sells water to consumers at food prices. The technical difficulty lies in the fact that water is a natural ingredient of practically all foods, and a normal amount of water is not an adulteration. The establishment in a court of law that a food contains excessive water and is therefore adulterated is a formidable legal problem. There is a crying need for legislative authority to set up legal standards for foods under which definite limits for water content can be established. During the past year, seizures were directed against such varied products as butter, jams and preserves, orange beverages, frozen eggs, tomato juice and fresh oysters in which the substitution of water was an important element of the violation.

An inexcusable type of food contamination was encountered in a consignment of chili sauce manufactured by an eastern producer. Consumer complaints were received that the product appeared to contain steel shavings. Sample collections demonstrated the presence of sharp pieces of metal in five out of a dozen bottles. The small shipment represented by this sample was seized. At the same time the plant was visited to ascertain what further distribution had been made and to determine the cause of the contamination. It was found that the manufacturer had purchased canned tomatoes to complete the pack of chili sauce. When the cans were opened with a power opener, faulty operation resulted in shavings of metal dropping unnoticed into the tomatoes used later in batches of chili sauce. The firm immediately withdrew all outstanding stocks from the market.

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The sale of coffee chaff as "coffee screenings" has resulted in several prosecutions. Coffee chaff is a valueless waste product. In a recent instance a large amount of it was bought from the manufacturer, ostensibly to be used for industrial purposes. It was then molded into granules resembling roasted, ground coffee and sold to coffee dealers under representations which led them to accept it as suitable for mixing with coffee. Such worthless products have no place in food.

Food inspectors recently reported an ingenious bit of chicanery by a cheese manufacturer who tried to market cheese that would live up to its advertising in one way if not in another. This cheese maker was selling what purported to be "Old English" cheese and adopted the taste titillating advertising slogan of "tingle on the tongue" to describe the effect on the cheese of aging. The maker was in a hurry, however, and didn't wait for age to produce the effect. He did some extra quick "aging" by mixing plenty of red pepper with the cheese. This left a "tingle on the tongue" sure enough, but the Food and Drug Administration regarded it as a commercial cheat and an adulteration of good food, and seized 390 packages of the tingling tidbit.

In the nation's capital and nearby cities there is a traditional demand for blackberry wine. Three New York State firms had no blackberry wine, but they did have plenty of grape wine. So they colored a large amount of it, labeled it "blackberry type wine" and shipped it in barrels to Baltimore. A Baltimore bottler transferred the wine from barrels to bottles, and it became "blackberry wine," although the composition was not changed in the slightest. Administration inspectors seized consignments of the wine under both names in and around Washington and as far south as Georgia. Government chemists found tartaric acid in all the samples. This acid isn't normally present in blackberries but does occur in grapes. Blackberries owe their tartness primarily to iso-citric acid. The Food and Drugs Act forbids the use in labeling of any statement, design or device which is false or misleading in any particular. Uncle Sam's pure food detectives are on the job!



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QUESTIONS AND *Answers*

Marriage of Second Cousins

To the Editor:—My son has fallen in love with the daughter of my first cousin. The girl's grandfather, who is about 80 years old is entirely set against cousins marrying. His claims are that it is both a social and a eugenic error. This man is well-known as a breeder of cows, and has had some outstanding results from animals with as much as 87.5 per cent and even 92 per cent of the same family blood, but stands on the argument that in the human family it is the poorer traits that always predominate.

The only possible flaw (from disease) is on my side of the family. The mutual great-grandmother of both youngsters died of tuberculosis. My sister contracted it as head nurse in the tuberculosis ward of a hospital, was cured and then took charge of the tuberculosis ward of another hospital, broke down, and had the lung collapsed.

We have read the article, "Should Cousins Marry?" HYGEIA, November 1937, but wonder if records show that the children of second cousins should be any more questionable than children of ordinary marriages. Both families have excellent health. Both youngsters are healthy and somewhat athletically inclined.

Is there any strong argument or evidence against second cousins marrying? Do you feel that they would injure their social standings by marrying, or their ordinary life associations and affiliations?

C. T. R., Oregon.

Answer.—There is no general tendency for the poorer traits to predominate in human heredity. First cousins have 50 per cent of their heredity in common (on the average). If the traits in that 50 per cent are good, it is an advantage to the offspring. If the traits are bad, it is a corresponding disadvantage. Second cousins have only 25 per cent of their heredity in common, so the matter of heredity is only one-half as significant for them as for first cousins who propose to marry. In most parts of the United States, there is virtually no social feeling against the marriage of second cousins. The tuberculosis may be a factor to be weighed in this case, but as the case in direct ascent is three generations back, it would not offer a strong argument against the proposed marriage.

Reading in Bed

To the Editor:—Is it considered harmful for one to read in bed with proper lighting?

G. N., Wisconsin.

Answer.—The true harm from reading in bed lies mainly in the strained posture and position which the eyes must assume in the reclining position; also fatigue resulting from insufficient rest and sleep.

Reading in bed in a sitting position with comfortable illumination devoid of glare is not harmful to the eyes provided one pays due regard to sufficient sleep and rest, as well as to correction of visual defects by proper glasses when necessary.

Allergic to Alcohol

To the Editor:—(a) How does a person know that he or she is allergic to alcohol?

(b) What kind of allergic reactions are produced on the human body by alcohol?

(c) Is it possible to desensitize a patient to alcohol allergens?

R. J. S., Mississippi.

Answer.—(a) Pure alcohol is a simple chemical compound and as such is unable to produce true allergic reactions. However, alcoholic drinks like beer and gin do contain complex chemical substances such as proteins or essential oils to which allergic sensitivity may develop. Beer and gin are especially frequent offenders. Alcohol, being a vasodilator, will cause flushing and so in a non-specific manner lower the threshold for true allergic reactions. Nasal stuffiness and hives are especially apt to appear after alcohol of any kind, because of vasodilatation and general lowering of the allergic threshold. This non-specific reaction to alcohol may occur regardless of the form in which it is taken.

True allergic reactions to substances in alcoholic beverages are recognized by their regular and repeated recurrence after the specific drink is taken. Certain brands of gin, for example, may contain essential oils to which there is sensitivity, while these oils are not present in other brands. An allergic reaction in such a case occurs to that particular brand and not to other alcoholic beverages. Skin tests are of little or no value in determining such sensitivities, although in certain instances they may give suggestive clues as when orris sensitivity is found in a person with suspected sensitivity to gin. Skin reactions of the usual type do not occur to essential oils.

(b) None to alcohol. All of the usual reactions seen in allergy: hives, skin rash, rhinitis, asthma or allergic headache may occur from sensitivity to other ingredients in the beverage.

(c) No.

"Extra" Teeth

To the Editor:—I have heard that humans sometimes get a third set of natural teeth. Being interested in the above, I wonder if you could supply me with more definite information?

K. V. H., New Jersey.

Answer.—Despite the fact that an occasional magazine or newspaper article reports some octogenarian cutting his third set of teeth, an authentic case of a third human dentition has never been found. Investigation usually reveals that the person in question has erupted

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one or more supernumerary or "extra" teeth. Supernumerary teeth are not frequent, yet they are not unusual. Sometimes a supernumerary tooth will remain dormant in the jaws and never erupt; sometimes it will erupt and crowd one or more of the normal teeth out of line; frequently such teeth will erupt in the palate. Occasionally they do not erupt until after all the permanent teeth have been extracted.

One of the most unusual cases of supernumerary teeth on record was reported by the late George B. Winter, D.D.S. Between the ages of 20 and 21 a farmer had all his upper teeth and all but three of his lower teeth extracted and dentures inserted. At the age of 50, roentgenographic examination revealed approximately 25 or 26 teeth of various sizes and forms and in various positions in the upper jaw and between 20 and 25 equally malformed teeth in the lower jaw.

Effect of Fatigue on Ovule

To the Editor:—What effect does extreme fatigue due to long distance hiking and mountain climbing have on the sperm and ovule? Would conception that had taken place at such a time have any ill effect on the child?

J. W., Nebraska.

Answer.—Fatigue, such as would be caused by long distance hiking and mountain climbing, would have little if any serious effect on either the sperm or ovum. In a healthy man or woman any effect which might be produced would be but temporary—the cells produced after rest would again be normal, assuming that any change would occur at all, which is unlikely. If conception took place at time of such fatigue, we do not believe there would be any ill effect on the child.

Belladonna for Actors

To the Editor:—Do actors and actresses use belladonna in their eyes? Is it dangerous? What strength solution is used?

N. W., Oklahoma.

Answer.—It has been said that Cleopatra used belladonna in her eyes when Marc Anthony came to call, apparently with considerable success. The effect of the drug is to dilate the pupils and make the eyes appear more lustrous. In most persons the distant vision is somewhat blurred by its use, and in almost every one the near vision is made much worse, but this would not interfere with the actor moving about the stage. However, the bright foot lights would be more dazzling than to normal eyes, and the actor might not be able to avoid squinting, thus defeating the purpose of using the drug. The usual strength of belladonna solution for eye use is 1 per cent. The effect after one instillation lasts for seven to ten days. It is not dangerous unless glaucoma (hardening of the eyeball) or a tendency toward glaucoma is present. Then it is extremely dangerous.

Age Difference in Marriage

To the Editor:—I am 25 years old and am interested in a young lady 32 years old. Her mother has many times said that because of the difference in age there could not be real happiness in the future.

Now from the medical viewpoint or biologically speaking is there a severe disadvantage caused, enough so that marriage should be avoided?

G. E., Massachusetts.

Answer.—People differ so greatly in their attainment of psychologic, social, and even biologic maturity that a mere difference in ages by the calendar does not prove much. From a biologic point of view, the only objection that could be raised against the proposed marriage is that many of the woman's best years for childbearing are already gone. However, the age of 32 should certainly not make a normal family impossible. Contrary to what is often supposed, marriages in which the wife is considerably older than the husband are not necessarily handicapped in any way. Several careful studies found no statistical relation between the happiness of marriage and any combination of ages.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Birth Control

Your physician has at his command the most complete information on this subject.

Correct advice on birth control must be based on the requirements and needs of the individual patient, just as in any other medical problem.

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Who's Who in Hygeia

(*Continued from page 4*)

volume of the body, made notable contributions to the knowledge of clinical endocrinology, and devised the now widely used phenolsulphonephthalein test for renal disorders. As a military man, he was executive officer of the A.E.F. Medical Research Laboratories in 1917 and 1918 and later Lieutenant Colonel in the Medical Corps and Colonel in the Reserve Corps.

When MATTHEW R. KINDE, M.D., talks about the problems of the county public health director, as he does in "Health at the Crossroads" on page 10, he's telling the story from the inside. He served terms as director of the health department of two Michigan counties before becoming Field Director and Consultant in Medicine for the W. K. Kellogg Foundation at Battle Creek, Mich., whose public health program he writes about for HYGEIA.

The University of Michigan gave Dr. Kinde his medical training, and Vanderbilt University at Nashville, Tenn., added a special course in public health which enabled him to become successively director of the health departments of Barry and Calhoun counties. Dr. Kinde is a Fellow of the American Public Health Association.

Pathways to the Brain

(*Continued from page 37*)

dizziness and insomnia. In one group of Dr. Peet's patients, 51 per cent have been able to resume full-time work, and another 21 per cent have returned to part-time jobs.

The essential mystery of hypertension is still to be solved. Investigators are working hard to find a reliable medical rather than surgical treatment. But meanwhile, approaching the problem through the nervous system, neurosurgery provides the only sure method of arresting in its tracks this ruthless killer of middle-aged men.

Surgery for Worry and Fear—

Phineas P. Gage was a quarry foreman who died in 1860. He is remembered today because his brain is still preserved in a Harvard museum. A blast which went off prematurely drove a crowbar into Phineas' jaw and out through the top of his head. He lived for 12 years more, healthy in body. But his judgment was impaired, and he became dishonest, undependable, given to violent fits of rage. When Phineas died it was found that only the left pre-frontal lobe of his brain had been destroyed.

This was perhaps the first real evidence that the higher functions of the brain—intellect, reason, judgment—are in its extreme front. Farther back, approximately between the ears, lies the thalamus—source of the primitive emotions: worry, fear, love, hate, passion.

Presumably the thalamus is at war constantly with the higher centers in th pre-frontal lobes. Over the connecting nerve pathways within the brain it pours forth a steady stream of raw emotions which must be controlled and subdued by the reason or intellect. But sometimes the primitive force of the thalamus begins to dominate. The nerve pathways take on a fixed and dangerous pattern. Then the symptoms of certain mental disorders appear; agitated depression, anxiety, worry, fear, take a firm hold.

Dr. Egas Moniz, a Lisbon neurologist, determined to try the *surgical* treatment of certain mental ills. He proposed to change the pattern of the sick mind by severing the nerve pathways that link the thalamus with the pre-frontal lobes! He bored holes in the top of the skull of mental patients who had failed to respond to other treatments, inserted an instrument not unlike an apple-corer and cut the connective "white matter" in the frontal area.

(*Continued on page 76*)

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False Health Notions

(Continued from page 34)

a fourth of these CCC boys under consideration still believe that sore throat and diphtheria can be prevented by wearing red flannel around the neck and that backache always indicates the presence of kidney disease. There is need for reevaluation of the often inadequate, poorly conceived, impractical hygiene courses in the average public school. And let health education be offered by a teacher really prepared to stimulate and guide the children in healthy thinking and healthy habits.

Let us hope, too, by legislation or otherwise, that some means may be evolved for curbing the advertising misinformation now bombarding a helpless public. Panaceas for all ills come to us over the air, with pretty ladies in our magazines, with advertisements in our daily papers. They even come in sample packages in our mailbox. The boys in this study have accepted as health facts what are in reality only clever slogans twisted out of half truths by advertising writers.

While this study does not necessarily indicate that similar belief in false health notions might be found throughout the population in the same age brackets, the variety of home, school and community background represented in the group studied appears to make it a reasonable cross-section, and the inclusion of project assistants and CCC executives in the group would tend to raise its general educational level as compared to the whole population.

Our present world, our own country, needs as never before citizens with sane attitudes and strong bodies. Such programs as the Civilian Conservation Corps can only touch many of the problems involved in preparing our people for full defense and for the courage needed to find a way through our chaos. Let us hope that from such need as this study reveals a broad new program may develop by which all our men and women may learn to nurture the healthy body that must be precursor to a healthy mind, a healthy life, and a healthy world.



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Is Your Son Fit for Service?

(*Continued from page 39*)

Will you, as parents, see your son stamped as unfit, when by taking simple preventive measures you may be able to qualify him to take his proper place in our plan for National Defense? Pride of service should constitute the best plea for this plan.

With both plans, Prehabilitation and Rehabilitation, it is proposed to proceed, if possible, along lines that will not disturb the normal doctor-patient relationship. In other words, it is advised that the registrant first consult the family doctor and dentist and follow their advice, even if it involves clinic-hospital medical service.

On Oct. 9, 1941, Mr. Roosevelt expressed great concern over the lack of physical fitness of registrants as revealed in the most recent statistical survey. He issued orders and outlined in a general way a program for the rehabilitation of rejected registrants suffering from easily remediable defects. The deficiencies and defects of such registrants are to receive appropriate treatment by the doctors and dentists in the registrant's home locality. The President further stated that funds for this purpose will be provided as needed.

Rehabilitation plans are now being formulated, based on the President's desire that Selective Service assume the administration of rehabilitation of those registrants rejected from military service, but who, with correction of remediable defects, can later be inducted into the armed forces of the military service. The goal for the first effort in the Rehabilitation program has been set at 200,000 registrants of the first 900,000 rejected for physical and mental defects.

This, then, places squarely before you parents your responsibility for the health of your children in general, and in particular the health of your son and his fitness for military service in this time of national need and emergency. You can help your son to become fit by advice and counsel. Furthermore, by adopting a plan of annual periodic examination of your children, you can protect them individually, and in addition protect the oncoming generation as a whole from defects and disabilities which afflict our young men today.

The Selective Service feels, as a result of its findings relative to the health or rather the lack of health of the young men of military age, it is justified in making a direct appeal to the parents of the country for their cooperation in the improvement of public health.

As parents, you should take immediately the steps necessary to fit your son to take his proper place in the program of national defense. As parents, you should see that the health of all your children is accorded proper attention. As parents, you should adopt some plan to guard more effectively the health of the next generation. Prevention of serious diseases in the next generation may be effected through the current correction of minor defects, as they are revealed by periodic examinations of your children.

Your most immediate responsibility, however, is to help your son render himself fit to take his place in our program of national defense.

BACTERIA IN AIR

"Bacterial analyses of the air of a large department store have shown a marked correlation between the numbers of streptococci of respiratory origin recovered from the air and the prevailing rate of colds as indicated by the medical records of the employees," John C. Torrey and Michael Lake, New York, report in *The Journal of the American Medical Association.*

The two New York men say that their finding tends to substantiate the suggestion that the presence of one of the types of streptococcus may well be taken as an indicator of pollution of the air by discharges from the nose and throat.

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Professor Leyland Chooses His Subject

(Continued from page 23)

diseases attacking man, and just because we don't see persons dying of it in every family, we've lulled ourselves into believing it is no longer of consequence. In 1939, 61,184 persons died of tuberculosis in this country, and for every death there were several cases of illness from the disease."

"Against tuberculosis," continued the Professor, "we have no effective vaccine, no proven serum, no specific drug. Almost all the wonderful progress we have made in cutting down tuberculosis has been accomplished by better living conditions resulting in higher personal resistance and fewer sources of infection. Suppose the world receives an economic setback due to the war, have we any guarantee that tuberculosis will not again become a scourge? Personally, I believe that man has evolved a certain resistance to tuberculosis which will help him in harder times than we have known. But can I prove it? Dare we trust it? No, Mrs. Huntson, tuberculosis is one of the most important problems of today. It's a proven killer, as shown by the sad records of the past. At present it seems less dangerous, but even so, tuberculosis still kills two and a half times as many people as smallpox, undulant fever, typhoid, typhus, measles, scarlet fever, whooping cough, diphtheria, dysentery, meningitis and malaria combined! Of the diseases caused by living agents only pneumonia approaches tuberculosis in importance, and for pneumonia great strides forward have been taken in the form of satisfactory serum treatment and efficient drug therapy. But, pardon me, you didn't come here to listen to a lecture."

"I'm intensely interested, Professor," replied Mrs. Huntson. "What would you say are the important points in the fight against tuberculosis just now?"

"There were recently more than thirty journals in the world devoted primarily to tuberculosis. There are numerous institutes specifically studying the disease; some of our best scientists work in these institutes. The National Tuberculosis Association is one of the strongest and most wisely directed national organizations studying disease. Of course, you know about the Christmas Seal sale each year. Yet in spite of all this we need to learn more about tuberculosis. For example, years ago almost every one became infected with tuberculosis, although by no means all suffered from the disease. Now, less than half the population is infected. We don't know whether we're better off today than we were forty years ago as far as our resistance to the disease is concerned."

"Do you mean to tell me, Professor Leyland, that almost half the people today are infected with tuberculosis?" asked Mrs. Huntson.

"It's true," replied the Professor. "For instance, I have had tuberculosis for more than twenty years."

"You! Tuberculosis!" exclaimed Mrs. Huntson incredulously as she gazed at the tanned, rotund Professor, from whom health and well-being radiated. "I don't understand."

"Neither do I, Mrs. Huntson," agreed Doctor Leyland. "The tubercle bacillus is one of the laziest, most easy going and apparently kindly of dangerous microbes. It invades many different human bodies, and in each in whom it successfully lodges it brings about a change called sensitization. The tuberculin test will reveal sensitization. But for every one hundred of us who are invaded by tubercle bacilli to the point of sensitization, not quite two will suffer from recognized clinical tuberculosis. Why this reluctance on the part of the microbe to destroy and kill? Who will suffer and who will escape — and why? These are a few of the many questions we can ask. Bacteriologists can make a vaccine for any disease caused by a known microbe. Whether the vaccine will do any good or not is usually soon found out. Many vaccines have been made for tuberculosis, but are they effective, should they be used?

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Again, there are questions we can't answer with assurance."

"But surely science knows more about tuberculosis now, with all these doctors studying it, than was known years ago," ventured Mrs. Huntson as the Professor paused.

"Yes indeed, that is true," replied Leyland. "So much is known about the tubercle bacillus and the disease it causes that one cannot read all that is written on the subject. But I know of no other microbe concerning which there are more debatable points and as yet unsolved problems. For example, it is said that medical students and nurses suffer from tuberculosis out of proper proportion. Yet my investigations and those of others clearly show that the death rate from tuberculosis among doctors is only about a third of what we would expect from men and women of the same age. Does that make sense?"

"I'm sure I wouldn't know, Professor," replied Mrs. Huntson. "What are the other points about tuberculosis you think my group in Hermit Hills should hear about?"

"Justice cannot be done the tubercle bacillus in any one presentation, Mrs. Huntson," answered Professor Leyland. "But in addition to emphasizing the importance of tuberculosis as a dangerous disease and raising the question of whether we have any adequate defense against it should widespread economic and social misery overtake us, there are a few simple points that can be made in a single lecture. Let me see—" and Leyland paused.

"What are these other points?" prompted Mrs. Huntson.

"First," replied the Professor, "the importance of early and accurate diagnosis. I know of no disease in which this is more important than in tuberculosis, which in the majority of cases evolves very slowly. Suppose a patient becomes infected with tubercle bacilli, and that he is one who is going to have clinical tuberculosis. Do you know that it may take as long as two years before an x-ray examination of his lungs would indicate pulmonary tuberculosis, the most prevalent and important form of the disease? Even at this positive x-ray stage, he may not have any signs of illness. Another two or three years may pass before he begins to suffer the fatigue, pain in the chest, loss of weight, night sweats, cough or daily rise in temperature which proclaim the active tuberculosis patient. If he can be diagnosed as tuberculous before these signs of illness appear, it is comparatively easy to arrest the disease satisfactorily. A very few months of rest and treatment will suffice for such 'minimal' tuberculosis. On the other hand, after distinct symptoms are well established and the patient is 'moderately advanced,' or 'far advanced,' the disease is very difficult or even impossible to arrest. You see, therefore, the imperative need for the very early detection of tuberculosis; it means the difference between a more or less minor illness satisfactorily stopped and a serious illness—or even death."

"How can this early diagnosis be made?" asked Mrs. Huntson.

"The procedure is called case-finding," answered Professor Leyland. "The positive tuberculin test will sort out those who have become infected with the tubercle bacillus. Of these, scarcely one in fifty will show active tuberculosis. I happen to be one of the forty-nine, myself. A careful x-ray examination will reveal those in whom progressive tuberculosis exists. Any tuberculin positive person whose x-ray is suspicious or positive for tuberculosis, whether he is ill or not, should go at once under the care of a physician who thoroughly understands diseases of the chest."

"Does that mean that all persons who are tuberculin positive should have an x-ray?" asked Mrs. Huntson.

"It wouldn't do any harm," replied Leyland, "and theoretically, it is indicated. But the x-ray for the private patient is expensive. Certain ages, occupations and economic levels are more likely to produce tuberculosis than others. This is where we need the intelligent cooperation of groups like yours—to reinforce the efforts of local anti-tuberculosis societies to get mass surveys made of certain population units. Domestics form one such group, particularly if they are Negroes. We do tuberculin tests on grade school children not so much to find a rare child with progressive tuberculosis as to discover the tuberculin positive children. Each such child is a trail to a home in which may be discovered an asthmatic aunt or a wheezy grandparent who is really an advanced, dangerous, 'open' case of tuberculosis. Among certain underprivileged groups, tuberculosis is so common that it is the custom of some workers to x-ray without even doing a tuberculin test. You see, public health looks at society as a whole; to conquer tuberculosis we don't have to track down and isolate each case of the disease. We will ultimately eradicate it if each year we locate, isolate and treat more patients than acquire the disease in that year. Each case of tuberculosis arises from a previously existing one. Every case found and properly cared for reduces the possibilities for new infection."

"I can see the logic of your point, Doctor Leyland," said Mrs. Huntson, "But if my child were tuberculin positive, I would want him x-rayed."

"Of course you're right," said Leyland. "The last point I would want to make before your group is that society has so far failed in its social obligation to tuberculosis patients. Suppose a patient is the father of four children and earns too small a wage for proper living. He doesn't see a physician until he has 'moderately advanced' tuberculosis. He needs sanatorium care, and he should stay under such care for more than a year. What is going to happen to his family? Who is going to pay the bill? What about his rehabilitation after the disease is arrested? To 'cure' properly he must be at rest not merely physically, but mentally. When his wife visits him she should be able to tell him how nicely Sally, Mary, John and William are doing in school, and how well fed and happy they all are. His employer should drop in on him now and then with encouragement for his recovery and with the statement that when he comes out he will be assured of employment. Do you think this is what actually happens, Mrs. Huntson?"

"I'm afraid that isn't the picture in actual life, Doctor Leyland," soberly replied the lady, adding: "I can see now why you believe in tuberculosis as a major problem of health even today. I want you to come out to Hermit Hills and tell my group this story you've told me today."

"I shall be happy to do so," said Leyland.

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Delivering Doctors by Parachute

(Continued from page 31)

tection from strains, and straps under the feet transfer part of the shock of the opening parachute to the legs. A coil of light, strong rope is carried in the suit pocket to give the jumper a way of lowering himself to the ground in case he is caught in the branches of a tree. Finally, a midget short-wave radio set permits immediate communication with the pilot of the plane, the landing field and the hospital, in the event other emergency equipment is found necessary or the issuance of detailed instructions which will vitalize the physician's service to his patient becomes expedient.

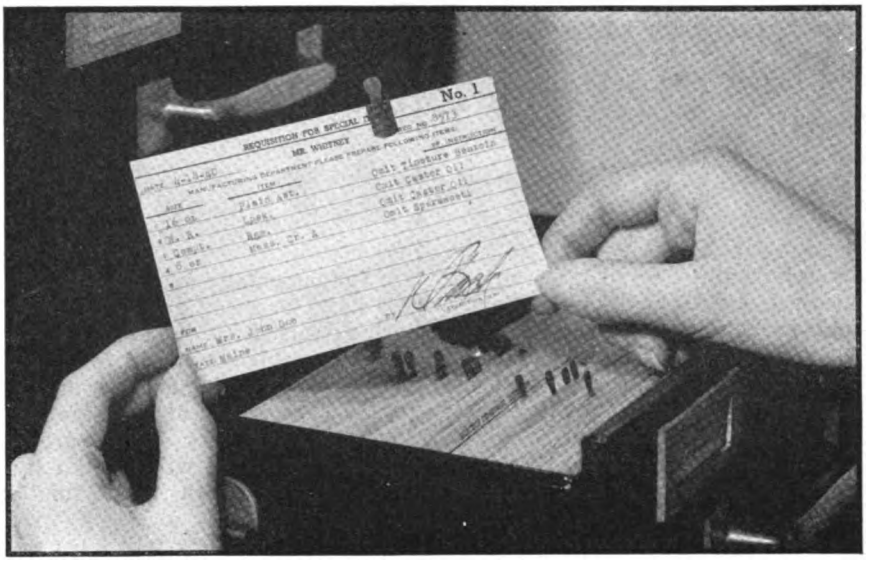
Among observations noted during the course of these experiments was the important fact that rips and tears seldom occurred in the silk canopy used. The parachute skeleton supports the weight and protects the surface, and there were no instances of a canopy catching, then slipping through the trees. This means that either the jumper comes straight through to the ground or is held safely suspended.

It was expected that the ordeal of jumping would result in a loss of energy, but fatigue was not noticeable. Thus the doctor suffers no ill effects and is physically capable of performing the most delicate operation, if necessary, immediately on arrival.

SELECTEES' SYPHILIS

"A rate of 45.2 cases of syphilis per thousand persons examined was found through physical examinations and routine serologic blood tests of the first million selectees and volunteers called for classification under the Selective Service Act of 1940," R. A. Vonderlehr and Lida J. Usilton, Washington, D. C., report in *The Journal of the American Medical Association.*

Seven states and the District of Columbia reported rates in excess of 100 cases per thousand. The rate for Negroes is consistently higher than that for white men in all the states.



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Civilian Morale in War

(Continued from page 42)

be reluctant to serve, passing the medical boards without difficulty and parading around in uniform. Such a situation may well create no small amount of organized resentment and discontent which may become a serious menace, if not a threat, to civilian morale.

An effort must be made by each and every community to organize its social and medical resources so that these rejected men will have an opportunity to receive such medical care as their disability calls for. Furthermore, in so far as it is practicable, these men should be given an opportunity to render some type of service directly related to the existing emergency. Only by some such plan will the man power of this country be conserved for active military service in the event that the war is indefinitely prolonged, and only through this organized community effort will the morale of the rejected 60 per cent be maintained and made available for the industrial needs of the war machine.

Children will become more important as a factor in maintaining the family morale during the war period. They will be called on to assume more responsibility and consequently will be expecting and perhaps demanding more freedom. The 16 year old boy who receives a weekly pay check and buys his own clothes, pays board, or contributes to the support of the household, will be less inclined to accept passively parental guidance than would this same lad had he continued to be dependent on his fifty-cent weekly allowance. He will be more independent in the selection of his friends and perhaps less concerned about the family's approval of the way he spends his leisure time. In brief, he will go through that normal phase of emancipating himself from family ties two or three years earlier than he would in normal times. This phase of resentment toward authority need not cause parents undue concern, for if their children's habits and attitudes established in early life are fundamentally sound, they will not stray far away nor make many serious mistakes. It is a period, however, which will call for much patience and understanding on the part of parents and not infrequently some guidance for both parents and children that will smooth the troubled waters in these family situations.

Here again society will have the responsibility of providing a youth program which will give due consideration to play, recreation and physical fitness. Such a program should include indoor games, outdoor sports, dances, music, educational centers, hobbies and other types of recreation, education and amusement. A precedent for such a program has already been established by the Civilian Conservation Corps and the National Youth Administration. Such national movements tend not only to safeguard the physical, mental and moral health of the American youth, but they are vital factors in building a morale that stimulates youth to assume the obligations and responsibilities associated with freedom. Providing intelligent and healthy ways of utilizing the leisure time of the youth of America represents the most adequate defense against the increase of juvenile delinquency, which invariably follows in the wake of war. The most important thing that can happen to the youth of America is to give them the feeling that they are needed, that they have a contribution to make in this national emergency that is of vital importance. This is a bit of psychologic strategy which the totalitarian states have capitalized to a remarkably effective degree.

The problems which are directly related to the fatherless home in normal times will be less acute during war if family morale can be maintained with the help of community organizations which provide children with interests and occupations during their leisure hours and a vocation which is directly or indirectly related to general war activities. The average American boy and girl will take pride in the fact that his dad is "doing his bit" for his country, and there is every reason to believe that he will fall in line and do his part, make the necessary sacrifices, and play the game squarely, just as he did during the depression. It is imperative, however, that these children be dealt with honestly and frankly in a manner that is becoming to the obligations which they are being asked to assume rather than to their chronologic age. They should be made to feel that their contribution to the privilege of enjoying a future in a free land and with the liberal opportunities which democracy provides is to make themselves worthy of the sacrifices that are being made by those in actual combat service.

Just at this time, when the civilized world is in such a chaotic state and when the normal expressions of healthy living are being disturbed by the emotional repercussions of war, the opinions, beliefs and feelings of children as reflected in their behavior are conditioned to a large extent by the opinions, beliefs and attitudes of those who make up the home, particularly the parents.

There is no logic in the argument that parents should not attempt to indoctrinate the child during the formative years on such questions as morals, patriotism, racial, religious and political problems. The minds of children cannot remain a complete blank until some one rings the bell and says, "Now you are old enough and wise enough to form opinions of your own." Children are too plastic, suggestible and imitative during their early years not to be greatly influenced by ideas generated by personal relationships. Children become Democrats, Republicans, Methodists, Unitarians, Socialists, or Communists, according to the political, social and religious atmosphere to which they have been subjected. If this is true, it is common sense that mature, logical convictions are passed on to children with all the reason and logic which their immature years are capable of grasping as to how these conclusions were reached. When parents have arrived at the conclusion that democracy, with all of its failings, represents the best form of government that civilization has been able

(Continued on page 73)

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Health at the Crossroads

(Continued from page 52)

sanitarian who may or may not be an engineer. There is a shortage of well-trained sanitarians as well as nurses. The sanitarian should be trained in modern scientific methods of improving the environment and in the safe production and handling of foods. He works with food handlers and producers as individual persons and as a group, advising them on food problems and in modern methods of preventing diseases contracted or spread through food products. He visits hotels, restaurants, dairies, resorts and all other places where food is produced or handled to assist the personnel of the establishments in delivering the best and safest products possible.

He works with families and municipalities to insure safe methods of sewage disposal in the community. He advises builders on methods of proper privy and septic tank construction and promotes the development of safe sewage treatment systems. The sanitarian works closely with boards of education and teachers in improving the school plants and in the use of community facilities for teaching children the value of a safe environment.

The sanitarian, too, is a problem solver. He knows the hazards to the community's health which may appear in its environment. He emphasizes the education of groups of people and assists them in correcting faulty situations which might lead to an outbreak of disease.

The health department is becoming more widely used by the community as a resource and is, in turn, making more intensive use of other persons and agencies who are striving toward the same objective -better community health.

WAR and MALE BIRTHS

The normal proportion of male births over female births was even greater in every European belligerent power during the last years of World War I and for perhaps two or three years afterward, according to *The Journal of the American Medical Association.*

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Bridget Goes to the Doctor

(*Continued from page 19*)

ness women needed help at home, so the next step was a domestic worker division. Even in those early days, Miss Adler was an advocate of physical examinations as an employment prerequisite.

"It costs too much," her clients told her. "If everybody did it and girls came to us with health cards, it would be all right. But to pay for a complete examination every time we change help—it can't be done."

Miss Adler dropped the idea—but only for the time being. Then the problem took on a sharp personal emphasis. Among her clients was a young couple whose first baby died from tuberculous meningitis, caught from a trained infant nurse. Somewhere in New York, too, she knew there was a 14 year old girl with a fully developed case of tuberculosis, which she had caught from a cook who had the disease for two years before her employer knew about it. Armed with these and other facts, she called on prominent physicians.

"If you haven't been able to persuade enough parents to take the initiative, why don't we tackle it from the other end? Get the employment agencies themselves to put on a campaign. It'll be good business for them to advertise that they can supply 'health certified servants'—and the workers themselves can ask for more money on the strength of a medical as well as a character reference."

"Go to it!" promptly replied Dr. Fairfax Hall. "I'll serve on the committee as one of your medical advisors."

Dr. Hall is chairman of the Committee on Contact Infections, American Academy of Pediatrics. He is a veteran campaigner. In New Rochelle, N. Y., he had just successfully emerged from a battle which developed when Westchester County physicians tried to introduce voluntary medical examinations, not only of domestics, but of grandmothers, sisters, cousins and aunts who fondled babies and often left diseases behind them. Back in New York, Dr. Alfred Fischer, chairman of a county medical society's sub-committee on physical examinations of domestic servants, was equally enthusiastic.

"We may have to work out some system so tests can be given at low cost for people who'll stand back on account of the expense, but we're behind you."

One member of the Child Welfare Committee of the Society said, "Parents have learned why they should forbid their children to call on a friend who has measles, but they still let their children throw their arms around seemingly healthy people, who, for all their parents may know to the contrary, can scatter tuberculosis and syphilis along with their kisses.

But employment agency heads in New York still had to be convinced before they would distribute the health cards prepared by the Bureau. They risked losing their clients, they argued, if they urged medical examinations for every employee. Housewives would go where bureaus weren't so fussy. Besides, they weren't at all certain it was necessary to have every maid "health certified."

Miss Adler promptly undertook to present a demonstration to employers and employees alike through her own Bureau of Part-Time Work. Henceforth, every applicant for a job was to be greeted with the question, "Have you had your medical examination yet?" No worker would be sent to a home without a favorable health card, acceptable for six months. To start the project, the city Board of Health agreed to cooperate for a limited period. Examinations for the time being would cost neither employer nor employee anything. Tuberculosis was made the spear point of the New York plan.

The publication of sensational figures on the prevalence of venereal diseases has given rise to a kind of "syphiliphobia" on the part of parents. Actually, the chance that a young child will contract syphilis, even if the nursemaid does give a positive blood test, is relatively slight, unless she has been quite recently infected. Even then she is not likely to infect others if she has had a few antisyphilis treatments. However, a

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temporary leave of absence is necessary, long enough for treatments to render the condition non-infectious. Treatments must be continued.

There are cases, such as that reported by Dr. Gaylord Graves of the Child Welfare Committee of the New York County Medical Society. One of his colleagues had a small patient with a syphilitic sore on her neck. An actively syphilitic maid had infected her when she kissed the little girl. Fortunately, instances of this kind are rare. Fortunately, too, the list of other diseases children are likely to acquire from adults is small. It is tuberculosis which is the arch foe of childhood.

Of course, it is not always the cook or nurse who is the unwitting host. The grandmother who coughs unremittingly and calls it "asthma," the school bus driver, the janitor, the teacher, parents themselves—all may spread the disease without even suspecting they have it. It is estimated that about eighteen thousand, or 2 per cent of the school teachers in the United States are tuberculous—and still on the job.

Employers calling at the Bureau of Part-Time Work were advised that although infection cannot be transmitted unless tuberculosis is open, even a closed, latent case may become active. They were told that maids and nurses are likely to be in the age group from 15 to 25 years, in which group the curves of death and sickness from tuberculosis rise sharply. Statistics from other communities where medical examinations for domestics had been going on were compiled, such as that in Knoxville, Tenn., where in one year 571 cases of syphilis, 67 of active tuberculosis and 5 typhoid carriers were discovered among workers (largely Negro household helpers) and taken out of circulation.

Over the radio, before women's clubs, and through the press, Dr. Hall, vice-chairman of the Bureau's Committee on Health Tests for Household Workers, and its chief medical advisor, carried on the educational campaign. He urged that every parent, relative or other person in a household where there were children should be tuberculin tested and x-rayed, if positive, at least once, since children acquire primary tuberculosis infection almost exclusively from adults.

As for the applicants for jobs themselves, the reaction of compe-



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tent and jolly Theresa was typical of the majority. Married, with a son of her own, she liked the idea of a complete medical examination for her own sake. When little Julia and Bobby accompanied nurse Theresa to the clinic they announced loudly, "Mama's going to have a health card too!" As a matter of fact, the request for health examinations by an employer often stimulated like demands from the employee. When a maid said to Mrs. Akron, "Who'll protect me in your house?" Mrs. Akron answered quietly, "My doctor. My husband and I have just had our annual examination and I'll be glad to show you the report."

Dr. Fischer, speaking for the county medical society's sub-committee on physical examinations for domestic servants, estimates that several thousand such mutual examinations have taken place in the office of private physicians this past year.

Of the first 178 white workers sent to the Board of Health clinics by the Part-Time Bureau, 92 returned with health cards furnished by Miss Adler. Four were questionable, one already employed as a child's nurse. Two proved later to have active tuberculosis. One, grateful that she found out her condition in time, began taking treatments immediately at a "rest farm" Dr. Hall found for her. The other disappeared--today she is probably spreading disease in the homes in which she is employed.

The last census indicates there are one and a half million women houseworkers in this country. If the percentage uncovered by the Bureau holds good—two plus in every hundred—it means that about thirty thousand cooks, maids and nursery governesses are likely to be infected with tuberculosis. With these results as a basis, and with the experience of the Part-Time Bureau with the clinics and employees as a criterion, the Committee decided the time was now ripe to expand--and to ask housewives to pay at least a share of the costs.

When Miss Adler explained the project to the New York Household Placement Association, comprising forty-three of the leading commercial employment bureaus for domestic workers, forty-two of them agreed to distribute pamphlets describing the Committee's objectives with bills to their prospective and current clients. One of them refused. Twenty-three agreed to post notices in their offices, and to make appointments for workers where employers requested health cards. Then the campaign was launched throughout the city.

To the Domestic Workers Union, to the houseworkers' influential "Staff Club," and to individual persons, Miss Adler and her associates explained the advantages of an annual or semi-annual medical checkup. The workers were frankly told employers might eventually be persuaded to pay more for the services of a worker who carried a "Health Card" along with her character reference.

Meanwhile, last fall the Community Service Society, one of the leading philanthropic organizations, offered the facilities of its Murray Hill Health Service to the project for those housewives who were not prepared to spend the examination fees of approximately $10. At its headquarters on Park Avenue, organized originally for the use of white collar workers, the Service gives domestic workers a lung x-ray, a Wasserman test, and a complete physical examination at a cost of $5 to the employer. Of the first twenty-eight examined, four had syphilis, two were tuberculous. All were glad to avail themselves of low charge treatments at the Service.

To bring down costs to the employer even more, the Health Service gives group tests, at a somewhat cheaper rate, when the Bureau sends sixteen applicants at once. Meanwhile, Dr. Fischer's Committee is endeavoring to work out some arrangement with county roentgenologists which will bring a single film chest x-ray exposure within the reach of almost every one at a time when the load will become too heavy for the Murray Hill Health Service to carry on a partially subsidized basis.

"One Bureau with one placement department could not solve the whole problem, naturally," says Miss Adler. "But with others doing their share we felt we might be able to point a way for communities where similar campaigns have lagged."

Inquiries received from all parts of the country—from organizations like the Alameda County Health Association at Oakland, Calif., and the Medico-Chirurgical Society at Montreal—seem to bear her out. The flood of letters asking for details of the plan in New York was so great that the Committee decided to print its pamphlet, "Health Tests for Household Workers," in quantity; it has since been distributed, gratis, throughout the United States, through women's clubs, the National Council on Household Employment, Rotary, Kiwanis and other similar organizations.

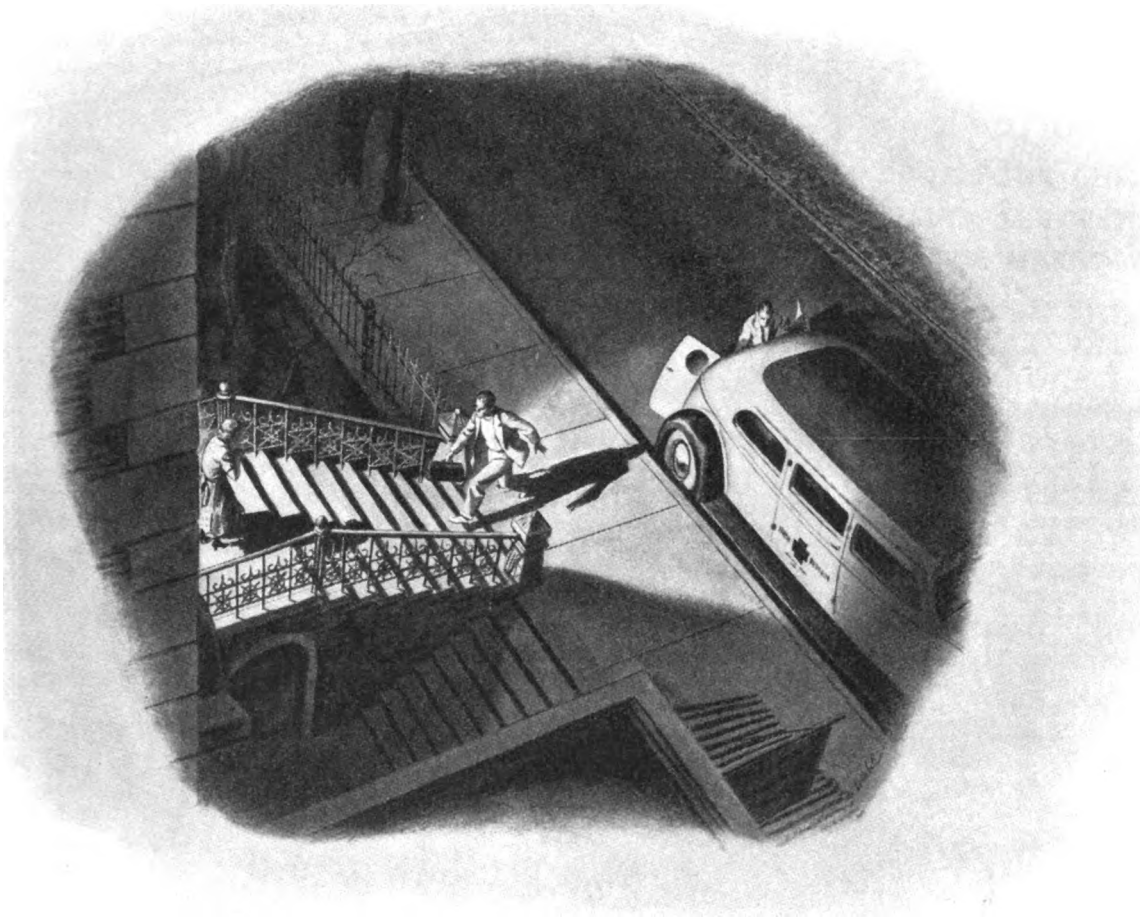
No attempt will be made to secure mandatory legislation in New York. On the whole, the medical profession has been opposed to such state laws as North Carolina has passed. The United States Health Service has upheld the stand of the American Academy of Pediatrics that household employees should not be discriminated against in a fashion which has been proved to arouse bitter resentment. The slow, methodical campaign of education that will overcome prejudices is the answer, they say.

"Of course," says Dr. Hall, "the health card is not a cure-all in New York or anywhere else. Nor does it mean that a worker is free from all infection forever. Possibly we shall have to rely on the annual rather than the semi-annual examination, simply because men and women are not willing to add more expense to their health budget. But even one examination is better than none at all."

As Dr. Hall points out, the health card can never be an assurance to the employer that a domestic servant is entirely free of infection--for any period—since an infection may be contracted within a few weeks, or even days, after the examination. But semi-annual or annual examinations for a large majority of household employees would provide a measure of protection never before enjoyed by the employers and their families. While the servant with a health card might not be 100 per cent "infection proof," the one without any card could be avoided as an unnecessary hazard.

The whole subject of household work needs a shake-up and the application of modern efficiency methods. While women have been clamoring for a share in public and political questions, this particular home health problem has been lying neglected on their doorstep.

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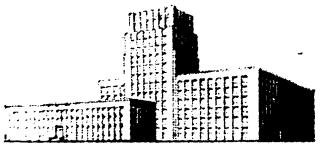
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It was this training while an intern that helped to make your doctor the sure, self-reliant man you know today—the man whose decisions are ever tempered by broad experience and mature judgment—the man who can still split a second, if he has to!

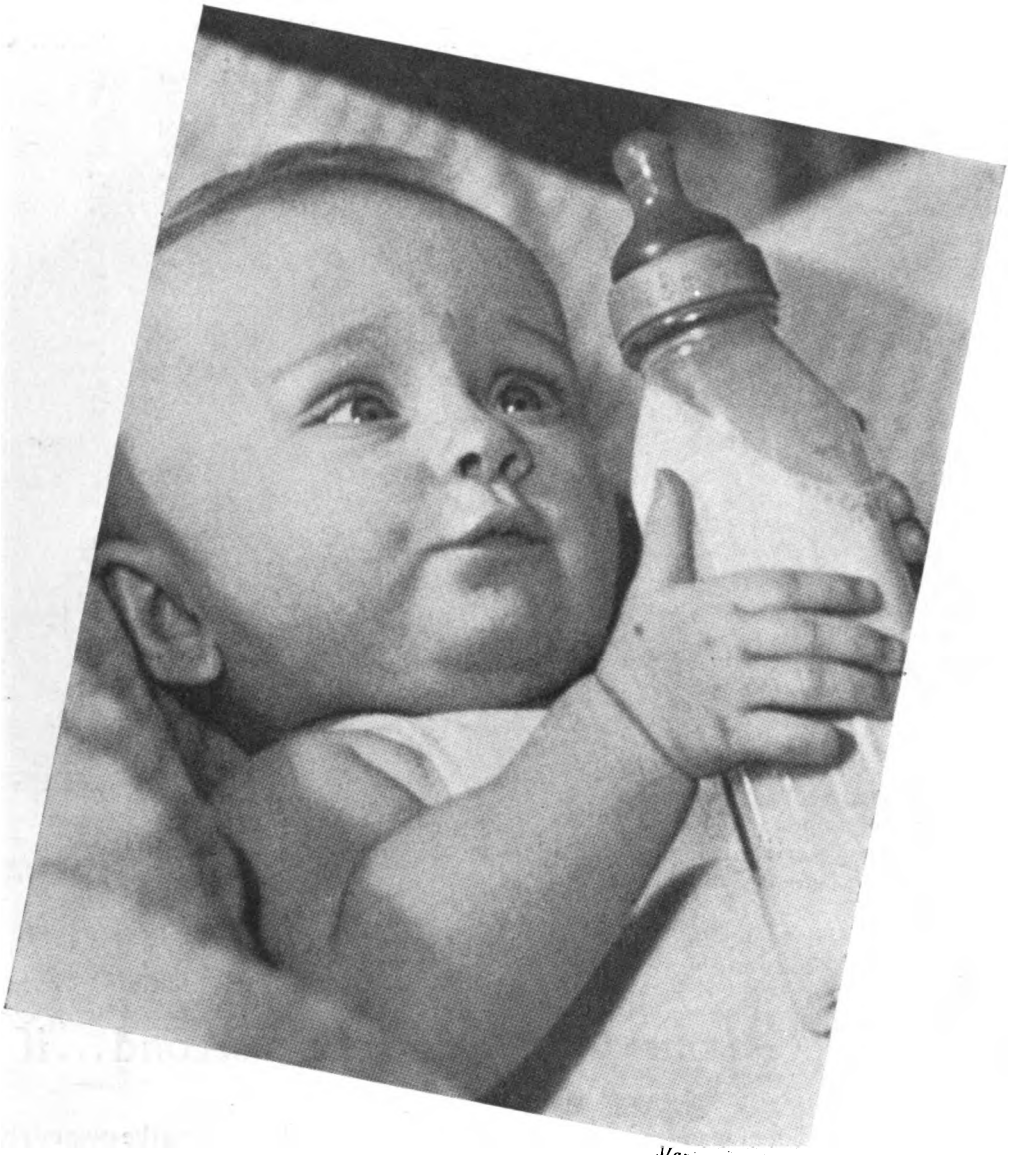
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Marian Aldrich

Complementary Feeding

By FRANK HOWARD RICHARDSON

ONE OF THE REASONS breast feeding is not practiced more widely than it is at present is that mothers often think of it as something they can manage themselves. Artificial feeding, they concede, is a professional job, to be undertaken and carried through by a physician specially trained for the task. But they see no reason why such a simple matter as nursing a baby should call for anything more scientific than a willingness to let Nature take its course plus the combined knowledge of the mother, the friendly nurse from around the corner and Aunt Hannah, who had ten children and lost only five of them.

As a result of this misconception of the importance of breast feeding and failure to appreciate the technical knowledge and wide experience its management calls for, this life-giving and health-promoting measure frequently terminates suddenly and permanently. Granted an opportunity to apply his knowledge and experience to this problem, the well informed doctor can forewarn his patient and frequently avoid such premature terminations. There are two factors in which the physician's help is particularly essential: complementary feeding and manual expression.

From time to time reference is made to the giving of a complementary (sometimes wrongly called supplementary) feeding to the nursing baby, and the inference may be drawn that if a baby is given part

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breast milk and part artificial food from a bottle, he is not breast-fed. Many of the older authors speak of three types of infant feeding, breast feeding, artificial feeding and mixed feeding—a mixture of breast and bottle feeding.

As a matter of fact, it has been found that whereas it is perfectly possible for a great many mothers to nurse their babies entirely, with no outside aid from artificial feeding whatsoever, there are many times during most lactation periods when a little aid from some other source makes the mother's job immensely easier. When for any reason she has not quite enough milk to satisfy the baby, the offering of a formula that would be appropriate as a substitute feeding is just sufficient to tide the baby over until an adequate supply on the mother's part is available.

If the bottle is used in this way, it is called a complementary feeding, or completing feeding. This is entirely different from the procedure formerly employed of offering a substitute or supplementary feeding in place of a breast feeding, in the mistaken belief that the mother's milk was thus conserved. We know now that this was one of the surest ways of drying up the maternal supply, for exercise is quite as important in the case of the lactating glands as it is in the case of the muscles. Strength is the result of exercise, power can not be stored up in resting muscles and milk cannot be conserved by glands that are not at work producing it in response to a call on them.

Apparently the baby who is always nursed first at his regular feeding periods and then allowed to fill up by taking as much as he wishes of a suitable complementary feeding gets all the benefits he would have received from the maternal milk alone, plus the very obvious advantages that come with an adequate amount of nourishment. Hence doctors no longer speak of "mixed feeding" but consider the baby who is fed in this way as being truly a breast-fed baby.

It will readily be seen that if this course is pursued, the physician is an essential factor in the picture. Until or unless the time comes when a physician is no longer considered necessary for directing the feeding of the artificially nourished baby, he will also be important in breast feeding. Nor will his function be mainly that of writing a suitable formula, as it is in artificial feeding; in breast feeding he is dealing with the highly developed function of secretion and its utilization for one of the most important of all medical problems—the nourishment of a human life.

There is one other function that can be discharged efficiently and adequately only by the physician. That is the teaching and supervision of manual expression. While the mother who wishes to utilize this procedure for the good of her baby and herself should have it demonstrated by her doctor, it may be interesting for her to see a description and explanation of it in print. It is such an important feature of supervised breast feeding, both as a test of whether any more milk is available toward the end of a nursing and as a means of increasing the flow and the eventual supply by what the dairyman calls "stripping," that it should be learned by every nursing mother, even though some may never need to employ it. This explanation may seem a little complicated—another reason why it should be demonstrated and taught by the attending physician and why the first attempts of the mother to carry it out should be under his supervision. It is so simple and easy to do, when thus explained and demonstrated, that any one can learn to do it satisfactorily in a minute or two.

The ball of the first or index finger and the ball of the thumb of one hand are used to grasp the opposite breast, just back of the pigmented area surrounding the nipple, called the areola. Finger and thumb are brought together with a gentle but firm pressure through the intervening tissue, which is pulled forward at the same time.

The exact spot at which the thumb and finger should be applied cannot be predicted in the case of any one person. This is not necessary, however, for the reason that when the exact spot has been reached by the opposing thumb and finger, milk will be seen to spurt in a number of tiny jets or streams, in all directions. It is not at all exceptional, when the pressure is applied at exactly the right spot, to see this stream reach a distance of four, five or six feet, or even more.

If it is found, after the simple technic has been acquired, that the

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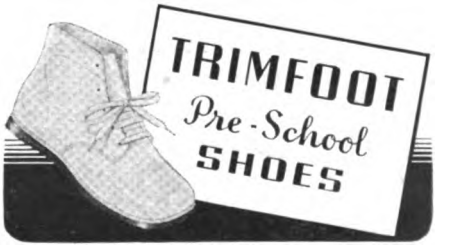
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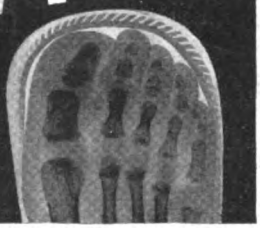
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milk issues not in jets but only in drops, or if it does not come at all, one of two causes may be responsible. Either the milk is not there to be expressed by the hand (that, of course, is the meaning of the term "manual expression"), or else the right knack is lacking.

If the latter is found to be the case, a little practice, together with the assurance that it can be done easily and satisfactorily, is all that is necessary. If, however, no milk is there, or so little as to be insufficient to claim and retain the baby's interest, the procedure should be continued for a minute or two. This is the "stripping" that has been referred to, and it is highly important as a means of stimulating the lactating glands to do their work adequately.

It is frequently surprising, even to the physician who has had long experience with this amazing phenomenon, to see how quickly these glands will respond to this treatment, if it is persisted in. It is not at all uncommon to find that even after a week or two of neglect, and the complete weaning of the baby, this treatment brings back secretion to a point where only a little complementary feeding is required to nourish the baby.

A great help in bringing this about, or in maintaining natural feeding in the first place, is the reassurance that the experienced physician can give, backed up by the confidence his experience merits. Not the least of the factors in the diminution of a natural supply is the worry and anxiety caused by the feeling of uncertainty. This is of course greatly heightened by the continual crying of a baby who is not getting enough to eat.

The doctor's assurances are important in overcoming such worry and anxiety. No less important, however, is the fact that he can quiet the justifiable complaints of the baby—expressed in the howls that are his only means of making his wants and discomfort known—by supplying him with all that he needs by complementary feeding. The combination makes an almost perfect "galactagogue," as the doctors call anything that will cause the flow of milk.

Although galactagogues have been eagerly and sedulously sought by inquiring scientists and practical physicians through the centuries, only two have been found, and these are not the drugs or the glands that have been advanced time and time again with the claim that this or that was an efficient stimulator of milk secretion. The two galactagogues are inexpensive and effective—rest and food.

Lack of sleep, lack of rest, overwork at home or abroad, anxiety over a hungry baby or over her inability to produce enough milk to satisfy him are the most prolific destroyers of a nursing mother's milk production. They must be eliminated if natural feeding is to be maintained in the majority of cases, yet it is astonishing how often they fail to inhibit the continuance of nursing, which frequently persists in spite of extreme fatigue.

Improper food is perhaps just as serious. Of course, insufficient food is bad, both from the standpoint of nourishing the mother and from that of making it possible for her to furnish a complete milk, but it is not a frequent cause of trouble. The disturbing factor about food is that too much is oftener at fault than too little! In this land of plenty, with an over-abundance of good crops and with charity to be had for the asking, semi-starvation or even moderate deprivation is rare. Stuffing, on the contrary, and especially stuffing that is urged on by ignorant friends and advisers with the best of good intentions, is many times the cause of the premature termination of nursing.

Beer, ale, Scotch oatmeal or gruel, chocolate-malted drinks, high caloric feedings—to mention only a few of the concoctions with which inoffensive nursing mothers are bombarded by well meaning friends—are excellent means for producing an excess of fat that it may take months or years to remove through strenuous reducing measures. They are worse than useless as aids to nursing, however. The doctor will assure the mother, who sadly needs such protection, that if she will drink three glasses of fresh milk daily, the rest of her diet may safely be left to own choice, with due regard to the avoidance of an excess of sweets, and a reasonable intake of vegetables and fruits. She need not become fat in order to produce an abundance of milk for her baby. With the physician's guidance, she may usually be asured of an adequate supply of milk—with the satisfaction of knowing that her baby is receiving proper nourishment.

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Civilian Morale in War

(Continued from page 64)

to create up to the present time, and that it has contributed more to the welfare of human beings and added more to the sum total of their happiness and efficiency than any other form of government, why should they not implant these ideas in the minds of their children? Can it not be taken for granted that the idea of democracy is fundamentally sound? Imperfections lie in the methods and machinery with which it is operated, but this does not affect the ideals for which it stands.

Ideologies are important only in so far as they serve the needs of human beings and permit them to enjoy the privilege of progressing toward a desired goal. This goal among other things should be a happier and more efficient life, giving them courage, confidence and a sense of security that comes when individual rights are restricted only for the welfare of the group. Such a goal appeals to old and young, but there is probably no common road over which every person will pass in order to reach this goal. A blind allegiance to any one ideology is neither necessary nor desirable. As the world moves on and changes take place, new thoughts, fresh ideas are needed. A democracy permits of such changes in thought and action.

Inasmuch as man is a gregarious animal, sociable, suggestible and imitative, he finds for his own comfort and security that he functions best as a member of the herd, whether it is the prehistoric tribe or a highly civilized community. As Trotter has pointed out, "Man will not only be responsive to the herd, but he will seek the herd and their environment as his natural habitat."

The dependence of the person on the group and the effect which the community exerts on individual morale are exemplified in the instinctive desire of people to cling together in times of impending disaster and for particular persons, organizations and institutions to provide the demand for this group security. The church, settlement centers, social service organizations, the Red Cross and psychiatric clinics are all well recognized ports which are sought in time of trouble.

It would, therefore, seem only natural that in a period of national crisis civilian morale would find a strong sustaining force if a community organization might be put into operation with the objective of maintaining community morale. Such an organization would inform its members of the effect of rumor and propaganda. It would aid in keeping young children at school, and provide programs for health, recreation and work. Members of the community known to be in need of psychiatric help would be directed to clinics.

Hysterical reactions spread quickly in time of disaster. If a time comes when there is need for leadership because of military activities, such an organization would assume this responsibility under the direction of proper authority and would contribute a most valuable service.

Committees on morale might be organized along the same plan as the politician uses to organize his ward and precincts, with some responsible person as leader. Nothing is more important to the community during a period of impending danger than leadership which will unify the individual members into a group that will feel, think and act as one person who is physically well coordinated and mentally well adjusted. There is much about civilian and family morale which can be learned only from experience, but there are also many problems with which the civilian will be confronted during the war which will differ not so much in fundamental character as in the suddenness and unexpectedness of arrival and in the fact that many other persons will be battling the same problem at the same time. Unpreparedness is often the demoralizing aspect of a crisis. Security will be enhanced if there is a feeling that some adequate preparations have been made to combat the threat. Many will be the problems of civilian and family morale during a war but our democratic form of government is well suited to meet the psychologic needs of its people.



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BOOKS ON HEALTH

Your Career in Nursing

By Cecilia L. Schulz, R.N. Cloth. Price, $2. Pp. 205. New York: McGraw-Hill Book Company, Inc., 1941

This is a book of current interest. It deals with an enormously important subject from a restricted point of view and is written in a style which, though entertaining, will hardly give it a permanent place in literature of this field. The book is informative but unfortunately is flavored with propaganda.

An excellent feature of the publication is a comprehensive and graphic presentation of the fields open to the graduate nurse.

VERONICA MILLER.

Toughen Up, America!

By Victor G. Heiser, M.D. Cloth. Price, $2.00. Pp. 228. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1941.

With a title designed to catch the eye of the defense-conscious book-buyer, and material organized to the same end, this is a fair book on healthy living.

A definite effort is made to utilize the defense emergency and the obligations of the citizen to his nation and to "a world to free," as a spur to healthier living. It is well written and contains much useful information, but can hardly be esteemed an outstanding contribution to the literature about personal health and how to live.

W. W. BAUER, M.D.

What Price Alcohol?

By Robert S. Carroll, M.D. With preface by Adolf Meyer, M.D., LL.D., Sc.D. Cloth. Price $3. Pp. 362. New York: The Macmillan Company, 1941.

This is a hopeful book on a subject usually viewed with great pessimism. One or two other books have appeared recently which speak of the treatment of alcohol addiction rather optimistically. While, however, the optimism of these other books is grounded in an underestimation of the problem, Dr. Carroll's hopefulness derives from sound considerations.

The author recognizes not only that there is no specific cure of alcohol addiction but that the diversity among addicts is so great that "successful therapy for the ordinary alcoholic demands a catholicity of approach quite beyond the average psychiatrist's interests and a complexity of treatment not available in the typical institution."

The realization of this great diversity brings with it an elasticity of treatment. And the adoption of this principle carries the promise of a considerable increase in the success of treatment. However the author's hopefulness rests not so much on any given treatment but rather on a diffusion of the understanding of alcohol addiction. "There was no cure for tuberculosis a generation ago, there is none today, but that semi-universal disease is now diminishing as the result of medical understanding. So we rightly anticipate the future lessening of alcoholism, our country's second most serious economic problem."

Dr. Carroll's foremost interest is treatment. He has had forty years of experience in this field and has developed a deep understanding of the requirements of the addicted person. He sees great value in placing the patient in an environment of acres for cultivation, gardens and lawns to be cared for, and into a setting of "comfortable competition." He finds, however, that all this cannot make up for the lack in educational evolution which seems to be common to all those who succumb to alcohol. Treatment first must be reeducational. What the nature of this reeducation should be depends on a study of the personality, background, development and assets of the individual patient. Generally, the patient must be led to accept the principles of self-denial not only with regard to alcohol but also the habits which may lead back to addiction.

Sedatives and hypnotics are not required in this scheme, but the use of certain medicines for the relief of depressions caused by "auto-intoxication" is permissible.

Much space is devoted to the description of the effects of indulgence in alcohol. The author, however, is not interested in these effects in the usual sense of this term, but rather in terms of total behavior. The attitude toward life and the sense of moral values as modified by alcohol addiction receive much of the author's attention. All this is amply illustrated by case histories.

While the descriptions of these changes are excellent, few students of alcoholism will agree with the author on his surmises about the mechanisms by which alcohol brings these changes about. Since, however, the merits of the book rest on the understanding and treatment of the patient, it is not essential to engage in a critique of the author's theories about the mechanisms.

E. M. JELLINEK.

Mine Eyes Have Seen

By Alfreda Withington, M.D. Cloth. Price, $3.50. Illustrated. Pp. 311. New York: E. P. Dutton & Co., Inc., 1941.

Many physicians today are writing the interesting stories of their eventful professional lives. Dr. Alfreda Withington was one of the early women graduates of a medical school in this country. She matriculated in 1883 in the Woman's Medical College of the New York Infirmary, a school which had been founded by the sisters, Drs. Elizabeth and Emily Blackwell, in 1868. She points out the difficulty which these women encountered in getting into a medical school. After graduating, Doctor Withington traveled in Europe studying in Vienna, Prague and other medical centers, and then located in Pittsfield, Mass., where she practiced for many years, except for a short interlude in 1907 in Labrador assisting the late Sir Wilfred Grenfell in his great humanitarian work among the fishermen. Doctor Grenfell says in the

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introduction to this book that Alfreda Withington was the first volunteer doctor of medicine who came to help him and she paid her own expenses for doing it. Doctor Withington returned to Pittsfield. She became interested in Red Cross work and applied for service in France in 1917. Returning to the United States in 1921, like many others, she found it difficult to adjust herself again to the old way of life in Pittsfield. She answered an advertisement in *The Journal of the American Medical Association* for a woman physician for settlement work in the remote Kentucky mountains, all calls to be made on horseback, and was accepted. The picture of these English descendants deep in the Kentucky mountains is good, and the last section of the book, beginning with the chapter entitled "Proud Hearts and Lonely Mountains" is especially interesting.

JOHNSON F. HAMMOND, M.D.

Mental Disease and Social Welfare

By Horatio M. Pollock. Cloth. Price, $2. Pp. 237. Utica, N. Y.: State Hospitals Press, 1941.

This excellent book on an important subject comprises a series of intensive original studies and research regarding social life and mental disease. There are sixteen chapters beginning with the social significance of mental disease followed by the expectation of mental disease, outcome of mental diseases, economic loss on account of mental disease in 1931, the depression and mental disease in New York State, general paresis, manic-depressive psychoses, hereditary and environmental factors in manic-depressive psychoses and dementia praecox, mental disease in the United States in relation to environment, sex and age, 1922, the future of mental disease from a statistical point of view, what happens to patients with mental disease during the first year of hospital life, a statistical study of 1,140 dementia praecox patients treated with metrazol, mental disease in Peru, alcohol in mental disease before, during and after prohibition, thirty years of alcoholic mental disease in New York state and finally is the paroled patient a menace to the community? Here is much valuable factual information for the neuropsychiatrist, the research worker in psychiatry, the post graduate in psychiatry, the medical student and the social worker. The entire study is a real contribution containing much information, and is highly recommended.

THEODORE T. STONE, M.D.

Corporal Punishment

By Herbert Arnold Falk. Cloth. Price, $2.10. Pp. 162. New York: Bureau of Publications, Teachers College, Columbia University.

This book is one of the "Contributions to Education" series published by Teachers College, Columbia University. It is a study of corporal punishment in the schools and communities in the United States, from colonial periods down to the present. The study is divided arbitrarily into four principal periods—namely, the colonial, the new nation, the expanding industrial era and the current era of social change. For the earlier times, its sources are current literature; for the present, a questionnaire has been used. The study is overbalanced by excessively detailed documentation of the earlier chapters in which there is wearisome repetition of chapter and verse regarding cruelties practiced in the schools and communities of earlier days. Although it appears to be assumed that corporal punishment is still widely practiced in the schools, this presentation appears to prove only that it is still legal and that many, if not most modern educators, while opposed to corporal punishment, are disposed to admit its necessity in certain circumstances. There does not appear any proof which convinces this reviewer as to exactly how much corporal punishment actually exists in the schools today.

W. W. B.

NOTICE

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E. P. Dutton & Co., Inc., 300 Fourth Ave., New York City.

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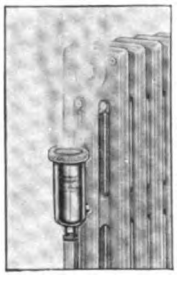
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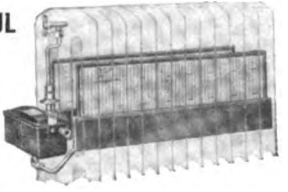
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Pathways to the Brain

(Continued from page 58)

Patients, he reported, were relieved of their exaggerated worry, fear, anxiety and melancholia. The operation was particularly successful in cases of "agitated depression."

Thus psychosurgery was born in 1936. Drs. James W. Watts and Walter Freeman of George Washington University made improvements. They perfected an instrument called a leucotome, which is a thin, hollow shaft containing a rotating blade. Through holes bored in the temples, the leucotome is pushed deftly through the brain, and a few turns of the blade separates the white matter. Since the brain itself is insensitive to pain, the Freeman-Watts operation is performed under a local anesthetic.

In this country psychosurgery has been performed on several hundred patients afflicted with abnormal fears. Results are said to have been good in about 65 per cent of cases, fair in 20 per cent and poor in 15 per cent.

Hic!—

Comedians have long known that hiccups, usually only a mild and passing annoyance, are one human affliction that is always good for a laugh.

Separating the chest from the abdominal cavities is a tough, tentlike muscle called the diaphragm. Controlled by the phrenic nerve—which traverses the chest and connects with the main "trunkline" high in the neck—this muscular structure moves up and down rhythmically in the breathing process. But the phrenic nerve is vulnerable and exposed to many untoward factors all along the line. Psychic or emotional disturbances, chemical irritations and a number of diseases and functional disorders can send abnormal impulses traveling over it and cause the diaphragm to contract violently and spasmodically. These are the hiccups. The familiar *hic!* is the result of the sudden intake of air into the larynx and the closure of the vocal cords.

The hiccups last until that stimulus or irritation is removed from the phrenic nerve. Once in a great while the hiccups may defy treatment, and persist for hours, days and weeks. The victim becomes increasingly distressed, irritable, weakened, exhausted, unable to take nourishment or even get to sleep. Then hiccups are not comedy, but may be fatal.

Desperately, the doctor summons the neurosurgeon. One of the simplest of operations may avert the final tragedy. The phrenic nerve, running obliquely across the back of the neck, is easily accessible. One small scalpel stroke will sever it. But if the nerve is severed the diaphragm becomes paralyzed, causing lung collapse. So the neurosurgeon cuts it, and the mysterious hiccup impulse, origin unknown, is interrupted. Then the surgeon reunites the severed ends of the nerve. With luck, the hiccup doesn't occur again.

To millions of Americans who have their hiccups and get rid of them the easy way this will sound like a drastic measure. It is. But it may also be the difference between life and death. Even with the lowly hiccup the last hope may lie delicately under the blade of a neurosurgeon's knife.

Conquest of Pain—

Pain of incurable disease can be such persistent, unending, unbearable torture that victims often look forward to death for final, merciful relief. Doctors sadly administer drugs which interrupt the prolonged agony with spells of tragic stupor.

Today the neurosurgeon declares it is not necessary to choose between the gruesome alternatives of intractable pain and drug addiction. Victims of incurable disease can live out their days without drugs and without suffering. The neurosurgeon can shut off pain completely and finally!

Every pain impulse, wherever it originates, must travel up the main spinal "trunkline" on its way to the brain. When the pain cannot be cured or eliminated at the source, the surgeon offers this final recourse: interrupt the *pathway* of pain. This operation has been performed in innumerable cases of incurable disease. The operation is performed *above* the point where the nerves of the painful part of the body enter the spinal column. Only a small incision is made in the nerve cable, and great care must be taken to cut only the pathway of pain, and not the motor nerve. Some 200 surgeons throughout the country are successfully performing the operation.

During the operation the patient is pricked lightly with a pin-point near the site of the pain. When he can feel only the presence of the pin-point, and not the pain impulse of the pin-prick, the surgical objective has been attained. He has been deprived of nothing but his sense of pain and temperature in that portion of his body. His tactile sense, or feeling, is left intact.

The Suicide Pain—

Trigeminal neuralgia, sometimes called *tic douloureux*, is a nervous disease of obscure origin; its pain is the most acute and maddening known to man. Intense paroxysms of pain in one whole side of the face recur unexpectedly at intervals of hours or days. They may be brought on by a gust of wind or even a slight movement of the face muscles. When he is free of pain, the "tri-gem" victim lives in constant dread of its recurrence—afraid to talk, chew, swallow, or wash his face. Between pain and fear he may be driven to mental collapse or suicide.

Medical treatment of this obscure and harrowing malady is discouraging and uncertain, but today, with the patient seated in a modified dental chair, the neurosurgeon makes a small incision on the side of the face, between eye and ear, and severs the fifth or "great nerve" of the face near its root. The pain of trigeminal neuralgia is gone forever!

Much neurosurgery thus is mercy surgery at its highest. Says Dr. Byron Stookey, chief neurosurgeon of the famous Neurological Institute of New York: "The prime duty of the neurosurgeon is to relieve pain. If it were more widely known that relief can be obtained for the duration of the patient's existence, more physicians would no doubt avail themselves of the neurosurgeon's service."

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Indirect or semi-indirect illumination reflects most of the light from the ceiling and upper sidewalls, giving these Cleveland Heights youngsters a clear, shadow-free light that is diffused throughout the room.





Old fashioned illumination may result in eyestrain for these young children in a Cleveland Heights, Ohio, schoolroom (above).

A Threat to Healthy Eyesight

By LESTRE H. BROWNLEE

IN A SMALL HUT in the Russian hinterlands, peasants strain their eyes to do several nightly tasks beside a small wood fire that yields its light reluctantly. A man mends a tool, a woman mends some clothes, several children play on the floor. The boon of electric lighting is unknown to them. And because of insufficient and inefficient illumination, they are wearing out their eyes.

In a large city in our modern America, a man mends a tool, a woman mends some clothes, several children play on the floor—all needlessly straining their eyes because of insufficient and inefficient illumination. They know the boon of electric lighting; yet they are wearing out their eyes.

In the commonness of electric lighting in America lie both the cause of indifference toward it and its universal effectiveness. Despite the many ways in which light is used, we have neglected, until comparatively recent times, to find out how to use it to conserve our eyes, to facilitate our study and to accelerate our work. If we are able to see, little attention is given to the adequacy of light. And our indifference toward seeing is a serious threat to the health of our eyes. The greatest threat to healthy eyes lies in the poor lighting facilities to be found in many of our classrooms.

There are reasons for pointing the finger of accusation at our halls of learning. The reasons may be found in the results of surveys made by the Illuminating Engineering Society, Commonwealth Edison Laboratories and Westinghouse Electric Company. Working independently, they found out these indicative facts: that only 3 per cent of the babies born begin life handicapped by nearsightedness, that during the pre-school years this number increases to 7 per cent, that elementary schools pull the total up to 9 per cent. However, this number jumps to 24 per cent in high schools and 31 per cent in colleges.

A survey on commencement day at college would reveal that 40 per cent, or two out of every five, have defective vision. If we sat at the commencement exercises and watched 40 out of each 100 boys and girls hobble up on crutches to get their diplomas, we would feel certain that faulty physical training, or some disaster, had caused serious inroads on their health. How much of a pair of good eyes must we pay for an education?

The foregoing statistics will bear some explanation, which may well

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start with the evolution of seeing. For centuries, the eyes evolved under natural outdoor illumination, adapting themselves to the extreme ranges of lighting values from the thousands of foot-candles of brilliant sunlight to the scant one-half foot-candle of moonlight. However, during this period most work was done outdoors in the daytime, at comparatively long range vision. Seeing requirements, for the most part, were casual and did not require long concentration. Under these conditions and for these conditions, the eyes developed until recent times.

What a contrast modern living habits afford! Today, we do the greater part of our living indoors. Millions of people spend their working hours doing daily tasks in places having less than 1 per cent of the illumination found outdoors in the shade of a tree. We scowl for long hours at small objects or finely printed pages at short range, causing a great strain on the irreplaceable eye muscles. Children are trained to pore over minute details, and the demand on their young eyes is having a telling effect.

That the combination of difficult eye tasks, long hours, poor seeing habits and insufficient illumination is unnatural is made evident by the fact that eye examinations of people who live largely out of doors show no prevalence of defective vision. Since certain factors of the present "eye-work formula" are constants, the variables must be changed to bring about the correct results.

We cannot hope to do much about the type of eye tasks that present day schooling demands of children, other than to use larger print with a higher degree of contrast in school books. It may be possible also to devise a system of rest between study periods to reduce the period of long concentration, and we realize that faulty vision can be corrected by the use of the proper type of eye glasses as prescribed by eye specialists.

However, we do have complete control over the amount of light provided, and in this respect we would do well to emulate nature's lighting methods. Most outdoor light does not come direct from the sun; if it did, the glare would be so intense as to make it impracticable. Sunlight is reflected by means of dust particles in the air, giving light of softer quality with sufficient illumination. Whenever it is possible to harness sunlight for classroom study, it is most desirable to do so, but few of our modern classrooms receive enough light in the sections farthest from the windows, even on bright days, to provide adequate insurance against children's eye strain. On dark days, the lighting need is obviously more critical.

Of course, the amount of light that enters the classrooms through the windows can be controlled by planning sufficient window area and using proper window shades and blinds. But when daylight is deficient, the deficit must be made up by adding artificial light. It is here that we should try to emulate nature.

Several methods are recommended by the Illuminating Engineering Society and approved by the American Standards Association; indirect lighting is one of these. In this system, 90 to 100 per cent of the light from the luminaires is directed to the ceiling and the upper side walls, from which it is reflected diffusely to all parts of the room. This method makes the entire ceiling a lighting source, and the ceiling should be of a white or light colored mat finish with a high reflection factor. The lighting units, which may have either opaque or luminous bottoms, should be such that they can be kept dust free—little dust and dirt can absorb an amazing amount of light. Also, inside-frosted lamps of the correct wattage should be used to obviate streaks and shadows on the ceiling. This type of lighting gives a clear, shadow-free light that is diffused evenly throughout the room and is best for general classroom work.

The semi-indirect is any system of lighting which emits 60 to 90 per cent of the luminaire output toward the ceiling and upper side walls, while the rest is directed downward. Since this system also utilizes the ceiling as the main source of light, the same considerations as for indirect lighting should be observed for ceiling finish and good maintenance characteristics. These are the two types recommended for use in rooms devoted to instructional purposes because of their freedom from glare, troublesome reflection and shadows. These should emit an intensity of 30 foot-candles of light in all parts of the room.

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Since no one can be relied on to determine by visual observation alone when more light should be added to a classroom or when artificial lighting could be spared, it is advisable to have each classroom equipped with a photo-electric tube which controls the lighting by switching on supplementary lights when the amount of illumination falls below the prescribed minimum.

What dividends can be expected for children as a result of increased watchfulness over their eyesight? There will be a minor increase in lighting costs for better classroom lighting. However, this cost is lessened immeasurably when we consider how much more health our lighting dollar is buying. It is obvious enough that in a year's time, we could save a surprising amount of money if we bought less food, or food lacking in nourishing content. But money saved at the sacrifice of health is money irrevocably lost, and once eyesight is lost or weakened, it is rarely regained.

With better light, the seeing task is easier because minute objects are enlarged, contrast is heightened and the ability to see is accelerated. Since the seeing task is easier, the burden on the eyes is lessened. Thus, better lighting is an important agent in conserving vision and keeping the eyes healthy. In the case of defective vision that cannot be corrected or has not been brought to normal, the Illuminating Engineering Society has found improved lighting an invaluable assistance for specific tasks. Better light helps poor eyes even more than good ones and many times keeps eye defects from becoming worse. Results of research show that reading under 1 foot-candle of light caused a 23 per cent decrease in convergence reserve of the ocular muscles after one hour, while the same hour's reading under 100 foot-candles of illumination caused only a 7 per cent decrease in convergence reserve of the ocular muscles—less than a third the amount of fatigue!

There are other ways that better lighting aids health; science has found that eyestrain affects the whole body. Because there is such an intimate connection of the eyes with the brain and the nerves, the ill effects of difficulty in seeing are transmitted throughout the system. Many headaches, backaches, nervous disorders, digestive troubles, blurring vision, dizziness and other disturbances can be traced to faulty eyesight.

Although at present it is impossible to measure accurately the effects of better lighting on the bodily reserves, significant experiments show that lighting affects parts of the body remote from the eyes. One experiment showed that a nervous muscular tension is exerted throughout the body when the eyes are used under poor lighting facilities. This tension may be observed sometimes in the contracted brows and set expression of some one trying to see in a dim light. Measured at the fingertips, it was found to decrease markedly with the increase of illumination. In 1 foot-candle of illumination, the muscular tension of the subject while reading was 63 grams; in 10 foot-candles it was 54 grams; in 100 foot-candles it was 43 grams. Thus it is apparent that better light conserves bodily and nervous energy.

Another experiment conducted by the Illuminating Engineering Society, involving many subjects and more than a million observations, showed that there was a lesser effect on the rate of heart beat of subjects using good lighting facilities than of those using poor facilities. Subjects reading for one hour under 100 foot-candles of illumination registered a decrease in rate of heart beat of 2 per cent; those reading for one hour under 1 foot-candle of illumination showed a decrease of 10 per cent. Thus the test showed that the operation of the heart is affected by arduous eye work; as improved lighting increased the visibility of the task, the effect on the heart was diminished appreciably. Strange as it may seem, this research proves that we see with our bodies as well as with our eyes! We must be concerned about our children's health as it is affected by the arduous eye tasks of modern education. We may live in modern America, with America's boon of electric lighting, but we must remember that the torch of civilization cannot begin to illuminate the way if it is a dim torch, robbing our children and future citizens of their eyesight!



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Medical News

OF THE MONTH

Spitting of Blood and Tuberculosis

The possibility that the spitting of blood, known as hemoptysis, which accompanies certain cases of tuberculosis of the lung may be controlled by the use of synthetic vitamin K is suggested by R. F. Sheely, White Haven, Pa., in *The Journal of the American Medical Association.*

An investigation showed that the prothrombin or blood clotting factor in patients with hemoptysis was deficient. Vitamin K is known as the antihemorrhagic vitamin. He found that in 106 patients with tuberculosis of the lung a significant prothrombin deficiency existed in 51, the concentration being less than 59 per cent of normal.

The administration of vitamin K, both by mouth and beneath the skin, appeared to be a likely factor in the control of hemoptysis in 4 patients in whom a prothrombin deficiency had been found.

It is suggested that the prothrombin concentration should be determined in every case of hemoptysis associated with tuberculosis of the lung.

"Dangerous Mechanical Medicine"

Labeling a device which on the deposit of 10 cents in a slot gives a person his blood pressure and pulse rate as "dangerous mechanical medicine," *The Journal of the American Medical Association* has declared editorially that "Regardless of the quality of the work done by the machine, the whole idea is unsound and psychologically dangerous to the human being."

"Recently some sixty drug stores in the city of Chicago," *The Journal* said, "have added to their equipment a device called the Cardi-O-Meter, which enables any person who will put his arm in a strap and deposit 10 cents in the slot to get a record of his blood pressure and of his pulse rate. This is not the first time that various schemes have been developed for measuring the blood pressure by nonmedical agents who collect a dime. . . .

"Americans are great believers in gadgets. The time may yet come when some ingenious mechanic, working in a machine shop, will promote a contraption designed to furnish a complete physical examination. . . . Indeed, just another step will carry the promoters to the provision of a complete x-ray picture of the chest and of the gastrointestinal tract following the dropping of some coins in slots. Brains, judgment and skill may then be relegated to the scrap heap of unessential accessories."

New Technic for Treating Certain Forms of Cancer

A new technic for treating radioresistant forms of cancer of the mouth, pharynx and larynx with x-rays or radium, which appears to be more effective than other methods of external irradiation now in use, has been reported in *The Journal of the American Medical Association* by Max Cutler of Chicago. He calls it the "method of concentration."

His method has been in use only three and one-half years, and thus nothing can be said of the permanence of the results, he says. It has been established however that certain forms of cancer of the mouth, pharynx and larynx which failed to respond to all other forms of external irradiation have shown marked regression and in many instances have disappeared completely under his new technic.

The technic involves the administration of an increasing daily dose of x-rays or radium through a diminishing opening of the apparatus so that the more radioresistant portion of the cancer in the center of the lesion receives a much larger dose than the outer edges of the lesion. When the size of the opening in the apparatus remains constant the outer edges of the cancer and the adjoining tissues are likely to be seriously damaged when the dosage required to treat the center of the cancer effectively is used.

Controlling Reactions to Liver Extract

That definite, temporary reduction of reactions to the injection of liver extract into patients with anemia was effected by the administration of the drug histaminase by mouth two days before and on the day of injection has been reported by C. B. Taylor and D. W. Hilger of Minneapolis in *The Journal of the American Medical Association.*

The authors' report is based on their experience with 2 patients with pernicious anemia who acquired severe sensitivity to parenteral (into a vein or under the skin) administration of liver extract.

Although severe reactions to liver extract administered by injection into a vein or under the skin are relatively infrequent, they none the less have presented a serious problem in treating patients with anemia when they did occur.

Preventing Skin Irritation from Adhesive Plaster

Painting the skin with certain solutions before the application of adhesive plaster proved to be an effective means of reducing irritation, Robert F. Legge reports in *The Journal of the American Medical Association.*

The author's observations, made on 46 different persons, showed that painting the skin with compound tincture of benzoin, merthiolate or metaphen (the latter two substances being combined with alcohol and acetone) before the adhesive was applied lessened the number of reactions. The investigator reports that while painting the skin with any one of the three solutions reduced the number of reactions, the skin treated with the merthiolate solution "will show fewer reactions than skin treated with either of the other two solutions."

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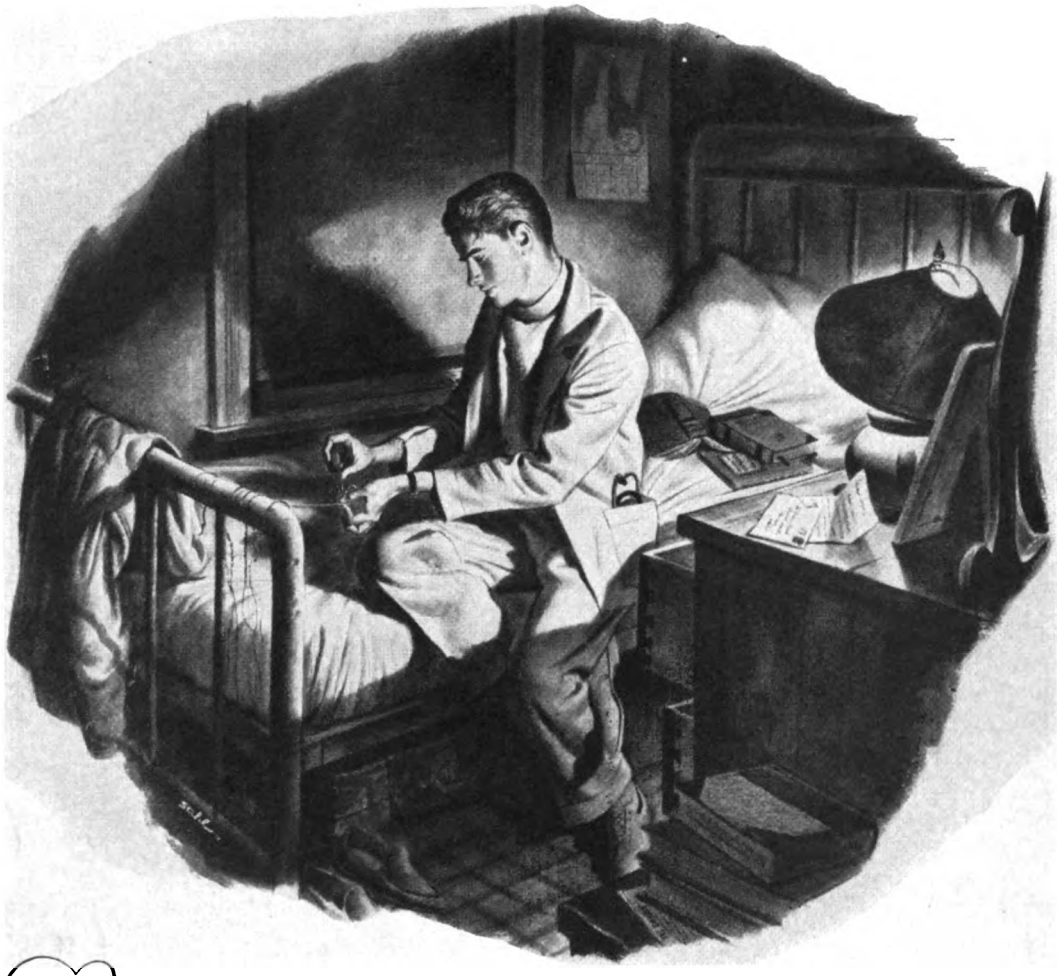
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In many skills, your doctor trained himself

After your doctor was graduated from medical school he learned, for himself and by himself, many skills that textbook and classroom cannot teach.

Take a surgical knot, for example. His studies may have told him how such a knot should be tied, but only through his own persistence was he able to master the necessary art of tying one deftly and quickly with thumb and fingers.

Only he himself could train his sense of touch to tell him the shape, size and position of the vital organs which can be felt under the surface of the skin, and to find meaning in the strength and rhythm of a pulse. He alone could train his sense of hearing to interpret the sounds that come from heart and lungs; his eyes to read the significance of the expression in your eyes. Your skin, your structure, your posture may reveal evidence of certain conditions which he has learned to read, often at a glance.

Typical of your doctor's deep interest in his profession is the fact that he acquired these skills. And because he possesses them, together with a thorough background of medical knowledge, it is important that you rely only upon him for aid and counsel in all matters of health.

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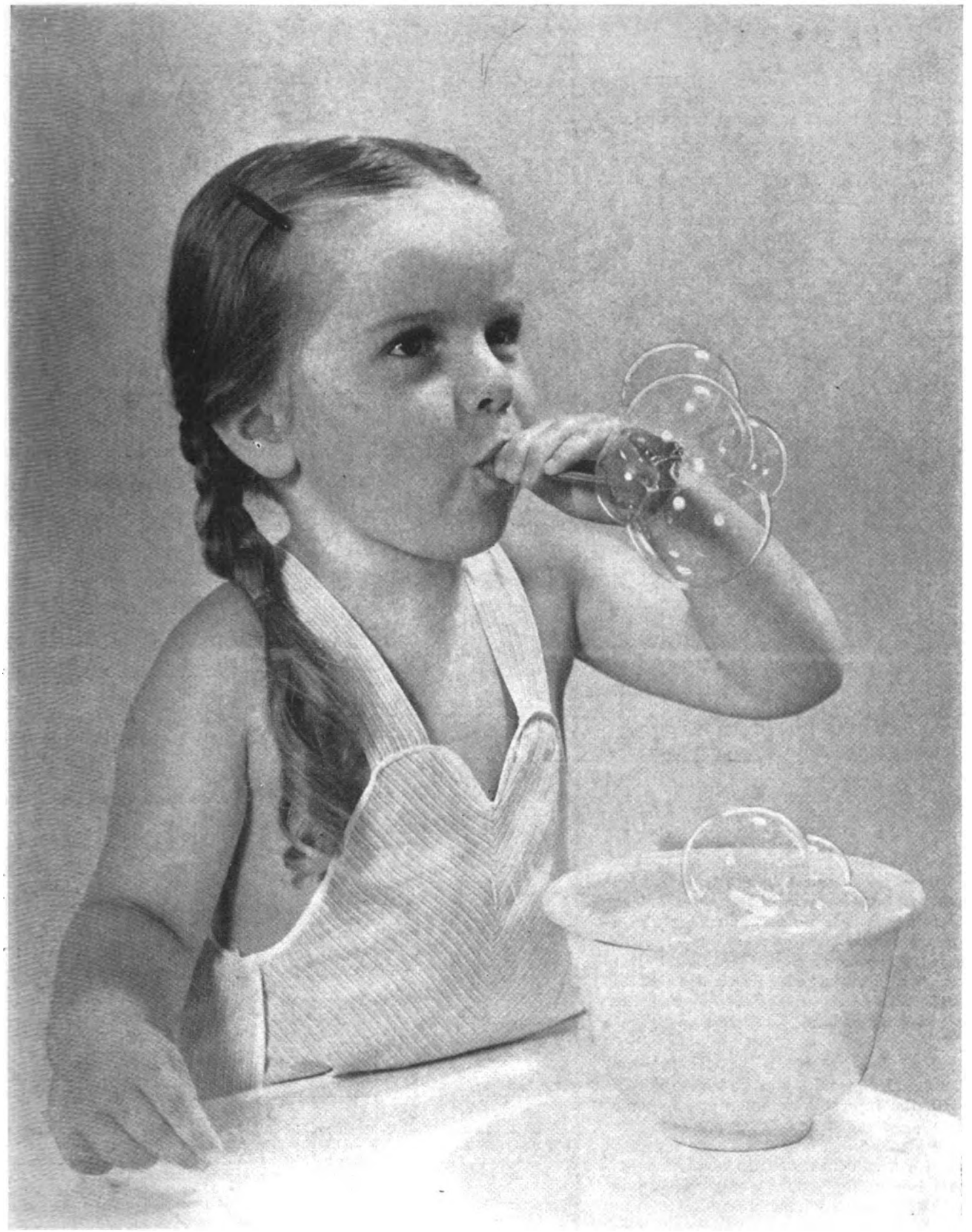
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BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

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FORECAST

Some ninety million Americans go about their daily chores at the office, at home or at school suffering from one or another kind of sore feet, ranging from mild disorders like calluses to serious deformities like fallen arches. A part of the national foot-ache can be traced to ill-fitting shoes, but the major responsibility rests squarely on the sufferers themselves. The shocking extent of the public's vanity and ignorance about shoes is revealed in "Worst Foot Forward," by Robert Maris, in the March HYGEIA.

National defense boom towns in nineteen states and the Territory of Hawaii will shortly have much needed additional hospital facilities under plans now being carried out by the federal government. Providing for about 2,500 new patients a day, the government's hospital construction program is described by E. K. Gubin in "Hospital Facilities for Boom Towns."

Back in 1933, four small boys—brothers—and their mother shut themselves into an apartment in a voluntary quarantine which has had far-reaching effects in the elimination of one of the most dreaded diseases of childhood. The experiment was to prove, once and for all, that whooping cough is caused solely by the pertussis bacillus, and that it can be prevented by injections of a powerful vaccine.

Louis W. Sauer, M.D., tells the story of this and other experiments in "Whooping Cough Joins the Preventables."

Why do most families resist instinctively when it is proposed that an autopsy be performed? Does an autopsy mutilate the body? Is the procedure contrary to religious precepts? Is it really important to scientific progress in medicine? Is it gruesome? These and other oft-recurring questions about autopsies are discussed in "They Shall Not Die in Vain," by R. M. Cunningham, Jr.

If war should bring disaster to your community, would you be able to help with the injured? If some one in your family were to fall from a stepladder and break a leg, or cut a finger severely with a bread knife, or tip over a saucepan of boiling water, would you know what to do—or what not to do?

"Do You Know Your First Aid?" by Katherine F. Wells, presents an ingenious test which will give you some idea of the accuracy of your present knowledge and judgment—and probably improve them!

HYGEIA

THE HEALTH MAGAZINE

535 N. DEARBORN ST., CHICAGO, ILL.

Published and copyrighted, 1942, by the American Medical Association. Edited by Morris Fishbein, M.D.

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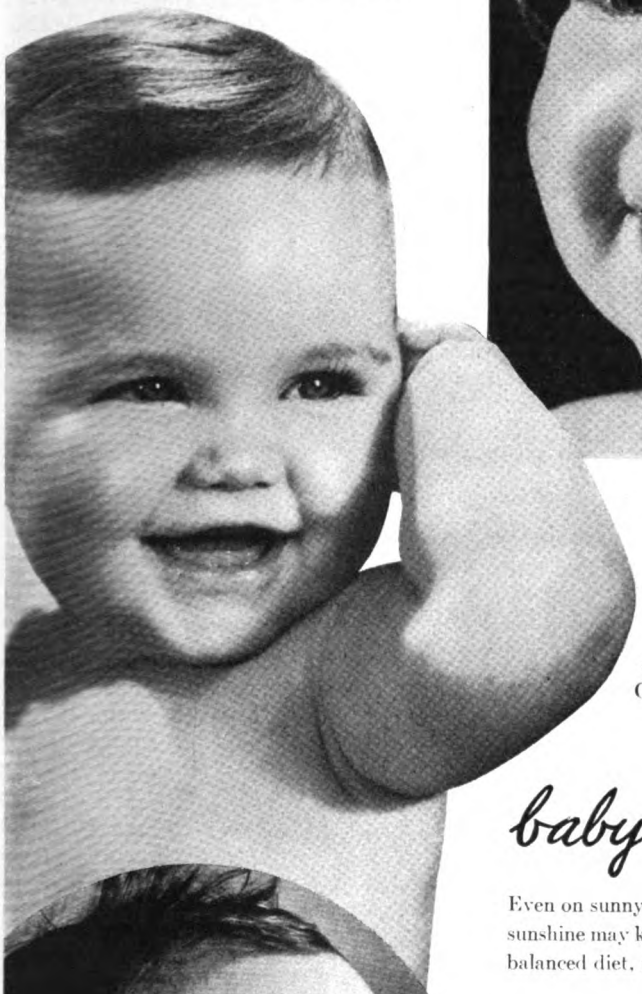
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Why a well-shaped head is important!

In the first year, baby's head grows as much as during the rest of his life. How essential it is, then, to provide Vitamin D daily to help build a well-shaped head. For Vitamin D regularly, start now and give your baby Squibb Cod Liver Oil.





a fine full chest too

At 9 months, he's building a fine full chest, a strong back. Lucky baby! To help his frame develop right, important to fine posture in the years ahead, mother regularly gives extra Vitamin D — Squibb Cod Liver Oil every single day. Do the same for your baby, start Squibb's now!

baby needs help

Even on sunny days, smoke may filter out more than one-fifth of the light. Too little sunshine may keep baby from obtaining the Vitamin D he needs. In addition to a well-balanced diet, give Squibb Cod Liver Oil daily.



Always look for this seal . . .

Be sure to get your money's worth when you buy cod liver oil. Remember, it's the vitamins you are paying for. That's what does your baby good. Each teaspoonful of *Squibb* Cod Liver Oil gives him *twice* as many Vitamin A and Vitamin D units as a cod liver oil which meets the minimum requirements of the U. S. Pharmacopeia. Look for the Squibb seal. Buy Squibb Cod Liver Oil for *your* baby. Now at any drug store. . . .

The priceless ingredient of every product is the honor and integrity of its maker.

SQUIBB COD LIVER OIL

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"The Adcomber"

looks at Hygeia ads

Your baby has a big building program on this year—working full time to build a well-shaped head, a fine full chest, a strong back. Is he getting the essential materials for the job? If he needs an extra quota of Vitamin A and D, here's a timely tip: Squibb's Cod Liver Oil gives EXTRA UNITS! Page 83.

●

Be fresh . . be fragrant . . be lovely . . but . most of all—BE YOURSELF! *Select* your perfumes and cosmetics as you do your gowns and hats—to suit your individuality. A Luzier's cosmetic consultant will help you make a beauty-wise selection . . . Just drop a card to the address on page 139.

●

NOW! Air cushioned diapers—8,800 tiny air pockets woven into every CHIX Gauze Diaper. Makes them softer, more absorbent. . . . They wash easily, dry easily, keep baby drier, help prevent chafe. Want a sample? Note the offer, page 143.

●

Have trouble with MILK digestion? . . . Just *rennetize* it! In other words, drop in one tiny tablet from the tube you carry in purse or vest pocket . . . Easy!

TRY IT FREE—SEND COUPON, PAGE 126.

●

"I wasn't asked—" gripes a two-months-old between howls "but I'm telling 'em *what I think of these scratchy, skew-gee woolens. Maybe if I keep up the song and dance Mom'll go out and buy me some cozy, soft Nestlings that* fit. *I understand they've been making them since Grandma was in training panties." (Details, page 147.)*

●

If one wants a smart figure she really ought to look up the "controlled uplift" brassiere, page 144. That separate adjustment feature gives you real command of the charm situation—and COMFORT!

●

Just you wait till the younger set finds out their famous friend of "Bedtime Stories" is boosting KIX! (See inside back cover.) Because when Thornton W. Burgess likes a thing, boys and girls will soon be clamoring for some of it on THEIR pantry shelves . . . Mighty easy breakfast idea, too—and nutritious!

●

DRINK a quart of milk?! Every day?! What a program for a busy mother to promote! Carnation suggests a smart detour: let the young 'uns EAT it . . . in cooked foods, on fruit and cereals. . . . Makes 'em round, rosy, growing up to glamour—like the lass on page 121.

THE ADCOMBER

Who's Who IN HYGEIA

JAMES A. TOBEY, LL.D., author of "The Ghost of Sylvester Graham," page 124, has been a contributor to HYGEIA since the first year of its publication. He is nutrition director of the American Institute of Baking, New York City, and lieutenant colonel in the Sanitary Corps, United States Army. A graduate of the Massachusetts Institute of Technology, Dr. Tobey now gives lectures there and at Harvard University on public health law. He is a member of the New York Bar and has served terms as a city, state and federal public health officer. His popular health column appears in 600 daily and weekly newspapers throughout the country.

R. L. LEE, who reports Kansas City's accident prevention program in "Home Defense Against Accidents," page 106, writes from Long Beach, Calif., that there just isn't anything interesting to write about him. To prove it, he adds hastily that he comes from the South and is a distant descendent of General Robert E., that he attended several colleges but learned more as a newspaper reporter writing everything from dogfights to editorials and ultimately graduating to book reviewer, dramatic critic, feature writer and associate editor, that he has traveled all over the United States and lived for a time in most of them, and that he prefers the west coast but likes traveling better than living anywhere.

You'll be glad that Mr. Lee paused in Kansas City long enough to investigate and write about the work which has been so successful there in reducing the toll of home accidents.

MADELIN BLITZSTEIN, who tells how a number of Philadelphia's industries have been finding "The Man for the Job" (page 110), feels thoroughly at home investigating and reporting a scientific procedure: her father is a physician, her brother-in-law a physicist, her brother a dentist and her stepson a writer and composer. Mrs. Blitzstein herself has been a reporter for twenty years; her first job, on the Philadelphia *Inquirer*, was back when women were rare in the newspaper business, and women's salaries rarer. She turned free lance writer twelve years ago, and except for one short lived attempt to go literary as editor of an "arty" magazine, she's stayed pretty much with scientific subjects.

"The Man for the Job" illustrates the scientific method at work on the practical, vital problem of industrial manpower.

Telling us that we must "use our heads to conserve our hearts" ("Healthy Hearts for the Middle Aged," page 90), O. P. J. FALK, M.D., speaks from an experience which has seen many a useful life handicapped or terminated in mid-career by the tragic advent of heart disease. The response to a recent paper read before a state medical society inspired him to formulate these suggestions for sane living in the "middle years."

Dr. Falk is a member of the faculty in the Department of Internal Medicine of St. Louis University, a Fellow of the American College of Physicians and the American Therapeutic Society and a frequent contributor to the medical literature on cardiovascular diseases.

Faithful to his own precepts, Dr. Falk relaxes from the exacting routine of professional practice, teaching and writing on frequent, solitary horseback rides and sailing excursions.

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Will Her Knight Come Riding?

To your little girl, life may be a wonderful fairy story. She is so sure it *will* be . . . that she will be as lovely as mother when she grows up . . . that her Prince Charming will come riding by one day . . . that they will live happily ever after.

But when she really grows up, she may discover . . . as perhaps you did . . . that life can be needlessly cruel.

Poor vision . . . a fault your child may never suspect . . . can be a tragic cause of heartbreak in later life. Defective eyesight may hold her back in school . . . make her tasks more difficult . . . actually keep her out of the fun and romance you want her to have.

Be sure her eyes are normal now! Have her eyes examined! Only then will you know that she is not handicapped, for she herself may never suspect it!

It is so important that you do know, for you want her to have every advantage. And the most priceless advantage of all is good eyesight!

HOW DO SOFT-LITE LENSES HELP YOUR EYES?

Soft-Lite Lenses are scientifically designed to benefit eyes which are over-sensitive to glare. They do this by controlling the amount of light which reaches the eye, putting tired eyes upon a "light-diet." Because of their scientific nature, Soft-Lite Lenses do not alter color values. They are ground to prescription and are often prescribed for children as well as adults.

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Camp Maternity Supports are scientifically designed to give you the extra support you need . . . *without pressure or constriction!* They help relieve strain on your back muscles so that you don't tire so easily. And they make you look better . . . because they help control your balance during the change in posture.

Why don't you ask *your* doctor about a Camp Maternity Support? It's the garment obstetricians everywhere prescribe! They are, of course, *never* sold by door-to-door canvassers!

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LETTERS FROM *Readers*

Beg Pardon

To the Editor:

While the article, "A Threat to Healthy Eyesight," by Lestre H. Brownlee in the January issue of HYGEIA is interesting and constructive, its effectiveness may be lessened by a number of inaccuracies.

All the specific researches in seeing and hundreds of others cited in this paper were conducted in the Lighting Research Laboratory of the General Electric Company. Instead of giving proper credit, Mr. Brownlee credits other sources which have contributed little or nothing along these lines . . . his neglect in giving proper credit cannot be overlooked or excused.

We appreciate the value of papers of this kind and only wish that a few simple corrections could have been made and proper credit had been given.

MATTHEW LUCKIESH, Director
Lighting Research Laboratory
General Electric Company
Nela Park, Cleveland

We regret Mr. Brownlee's failure properly to credit the invaluable research in visual tasks and lighting of Dr. Luckiesh and his staff. Our apology for HYGEIA'S *part in contributing to this error is offered.* —ED.

Lo! The Poor Indian

To the Editor:

I notice in your November issue that Mr. Donald A. Laird makes the statement that "no Indian child reaches the same standard of braininess as a white child or an intelligent Negro."

I wonder where Mr. Laird finds evidence that he considers adequate to justify such a statement. I have spent more than twenty years in the public schools and have found nowhere in my experience evidence which would remotely justify Mr. Laird's statement. My own experience leads me to the conclusion that there is no basic difference between the Indian's raw material of intelligence and the whites'.

Indians have spoken one language in their homes and received their education in what is to them a foreign language without sufficient effort being spent in their schools to make English a natural medium of expression. Where this handicap is being overcome by our modern educational methods we see little difference between Indian and white children. There are the same variations in individual capacity within the group as one would find in any similar white group.

WILLARD W. BEATTY
Department of the Interior
Office of Indian Affairs
Washington, D. C.

To the Editor:

The statement made by Donald Laird in the November issue of your magazine in answer to the question, "Are Indians brainy?" has caused me some concern because of the false inferences that are likely to be drawn from it. The casual reader is likely to accept what appears in your magazine because of your reputation for scientific accuracy and caution in the medical field.

I should be glad to bring to the attention of my students any statement you wish to make about the article or the subject in question.

ARTHUR HILLMAN
Central YMCA College
Department of Sociology
Chicago, Ill.

To the Editor:

The statement in my HYGEIA article was based principally on the work of the late Thomas R. Garth of the University of Denver. Dr. Garth liked to believe that environment was largely responsible for the Indians' poor showing on stand-

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ard intelligence tests, but even an optimistic evaluation of his results shows that better environment raised IQ's only about 5 per cent above the tribal average. Confirming evidence is in the monographs published by Columbia University.

I suggest that the sociology students be referred to chapter 2 of "Genius in the Making," by Herbert A. Carroll of the University of Minnesota (McGraw-Hill, 1940), which provides a summary of the facts on which the statements were based.

DONALD A. LAIRD, Ph.D.
Middle Haddam, Conn.

Sewage Disposal Method

To the Editor:

The article, "Sewage Treatment and National Defense" in your issue for December draws attention to the "non-biological odorless process" of sewage treatment. Would you be good enough to advise me where further information may be secured on this method of treatment?

GEORGE D. ARCHIBALD
Office of the City Engineer
Saskatoon, Saskatchewan

Mr. Archibald and many others who inquired about this process were referred to Sherman Stivers, 1340 G St., N.W., Washington, D. C. —ED.

She Likes It

To the Editor:

Four months ago I suffered a nervous breakdown, partly due to hard work as a nurse. I feel I must tell you how much your magazine has helped me; I find it so interesting that I keep each issue. I would like to subscribe for 1942.

KATHLEEN FORD NOLL
Charleston, W. Va.

Pathways to the Brain

To the Editor:

I have just read the article in the January issue called "Pathways to the Brain" and I think it is near the top in a long list of very fine articles. I learned many things reading that article. Thank you again for publishing such a fine article. I would like to express my appreciation as well to Lois Mattox Miller, she did a fine job.

MRS. OTTO WILBARGER
Maumee, Ohio

Motor Accidents

To the Editor:

I am very much interested in the article on safe motoring in the November HYGEIA. Your illustration shows one of the reasons why there are so many fatalities and serious injuries: There are too few police officers and ambulance drivers who know anything about first aid. Through hospitals, I believe something could be done to make sure every ambulance driver and helper does know how to handle the situation. There is a lot more to driving an ambulance than racing through the streets with the siren wide open.

W. C. BOARDMAN
The Kansas Electric
Power Company
Lawrence, Kan.

False Health Notions

To the Editor:

I have read with interest the article "False Health Notions," by George A. Walker and Eleanor Saltzman in the January issue of HYGEIA. Would it be possible for me to secure a copy of the false health notions from which their test was compiled? I am interested to see if our pupils and staff would respond to this test in a manner similar to that found by the authors.

JOHN RUTHERFORD, Principal
Stevens School,
Wenatchee, Wash.

Any other schools feel the urge to test their pupils' health knowledge?—ED.

School Library

To the Editor:

We received our first copy of the HYGEIA Magazine which is presented to our school by the Pennsylvania Department of Health. I enjoy reading HYGEIA and derive a great deal of helpful information from it. I shall turn the magazine over to our librarian, and she will post it on the library magazine rack, where, I am sure, it will be used often by the boys and girls in our high school.

We appreciate your kindness in giving us this subscription.

WARREN N. BUTLER, principal,
Downingtown High School
Downingtown, Pa.



. . . for the flag you honor!

V . . for the man you're cheering!

V . . for the Vital Things entrusted to women! Things that build morale—for fighting men and home folks! Things like fresh, wholesome complexions, free of cosmetic irritation and clogged, ugly pores.

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Done? . . . Well done! IT IS IMPORTANT!



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Blonde..... Brunette..... Auburn.....

NAME.....H-2-42

ADDRESS.....

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Ewing Galloway

Out of an unseen quarry evermore
Furnished with tile, the fierce artificer
Curves his white bastions with projected roof
Round every windward stake, or tree, or door.

—Emerson.

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FRESH AIR

THE AIR WE BREATHE has always intrigued observers interested in good health. At one time it was believed that man's blood vessels were filled with air, because they seemed empty after death. As knowledge of the human body increased and chemists began to understand the nature of the chemical gases which compose the air, these unfounded ideas lost ground and finally were abandoned. Then came the relatively modern era in which fresh air was considered curative in some diseases, notably tuberculosis and pneumonia; in the latter case cold air was for a time regarded as of great value. There was also a period, within the past fifty years, when air containing the breathed-out products of human metabolism was considered poisonous by reason of minute quantities of unfavorable matter, especially carbon dioxide, which it was supposed to contain. Night air is even today wrongly regarded in some quarters as mysteriously dangerous to the human health. The well known fresh-air fiend is still with us.

Modern understanding of the atmosphere is based on vast accumulation of scientific knowledge, chemical, physical and physiological, which indicates that some of the old-time beliefs may have had some basis in truth, though not for the reasons commonly held. The air is now recognized as a possible carrier of infection, of irritating gases from improperly burned fuel, and of dusts and pollens which may cause hay fever, asthma and allied conditions, possibly including cancer of the lung.

The unpleasant effects of air in badly ventilated places are not due to carbon dioxide or mysterious organic poisons, but to lack of motion, inadequate or excess humidity, and unpleasant odors. Carbon dioxide is now recognized as harmless in the proportions in which it occurs, and essential as a stimulus to the nerve center controlling the function of breathing. Proper temperature, humidity and air motion are recognized as the essentials of comfortable and healthful ventilation; these can be attained by artificial means when necessary, including heating, cooling, agitating and washing the air to remove dusts and other undesirable floating matter such as pollens. Air pressure can be used to overcome excessive rarefication, or oxygen inhalers can be used, as for divers or aviators. Oxygen, the essential element in the air for human respiration, has been put to numerous uses in medicine, notably in the treatment of lung disorders.

Fresh, clean air at proper temperature and humidity and in gentle motion without strong drafts is a real contribution to the health and comfort of man. For the home, small office or factory, where air conditioning may be too costly, ventilation can usually be achieved by the judicious control of heat, moisture, and window ventilation. A temperature of 68 to 70 degrees Fahrenheit is usually recommended, with humidity more than 40 and less than 60 per cent. Pans of water on radiators will evaporate considerable amounts of water in a heated house, if the pans are broad and flat. Evaporation can take place only from the surface, no matter how much water is present.

Complete change of climate may sometimes be advised in certain diseases to improve the comfort of the patient even where it is not expected to be curative. Such a change, and the climate to be chosen, are matters for the doctor's decision in accordance with the needs of each patient.—W. W. BAUER, M.D.

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Healthy Hearts for the Middle Aged

By O. P. J. FALK

STRESSES AND STRAINS incidental to the wear and tear of human existence fall particularly on the heart's muscular structure. This musculature in turn is dependent on the integrity of the coronary arteries for adequate blood supply to bring it nourishment and oxygen and to carry away waste products.

As the years go along, there occurs in some people a thickening of the walls of the coronary blood vessels that supply the heart muscle. Unfortunately, this thickening occurs at the expense of interior caliber of the vessel, so that it cannot carry as much blood as formerly, although the heart may actually require *more* blood, particularly if it has become enlarged from any cause—such as the presence of high blood pressure. Then again, the ravages of time may produce roughening or irregularities in the inner lining of these arteries, from deposits of fatty substances or fibrous tissue. Such conditions as these further tax the capacity of the coronary vessels to carry sufficient blood to the heart muscle, particularly when it may be laboring under the increased demands of overweight, emotional stress, physical strain or prolonged fatiguing effort. As we pass the meridian of life we must learn to conserve our cardiac energy. In other words, we must use our heads to conserve our hearts. The following list of suggestions will help to serve this purpose and should be kept in mind in the conduct of everyday life:

1. Attempt to establish a balanced plan of living with sufficient sleep (at least 50 hours a week) and adequate leisure periods. Recreational pursuits should be of a character not to produce shortness of breath, chest pains or undue exhaustion in those who have such tendencies, particularly after late maturity.

2. It is best to avoid stressful exercise of any type immediately following a meal. The popular rules for swimming after the ingestion of food should be observed for other forms of vigorous exercise.

3. Establish and maintain some well balanced, moderate exercise program suited to middle age needs. Regular walking, riding, golfing, skating or badminton constitute practical and suitable types of exercise. It is interesting to speculate on just what influence the replacement of man's habit of walking by increasing use of the motor car may be having on the increase in middle age heart disease we are witnessing today.

4. Learn to do things in a leisurely fashion. Train yourself to act with studied tranquillity, to go places with less feeling of hurry and push. The few minutes saved by fast driving are probably unimportant in the long run. People who accomplish most are not in a hurry.

5. Try to cultivate the art of complete muscular relaxation. To do this one need take only a few minutes several times a day. It is an art that must be practiced, much as one learns to play the piano. A little thought given to relaxing the muscles of the arms, legs and throat, and relaxing the tension of the tongue on the palate or teeth, will go a long way toward insuring the complete muscular relaxation so effective in preventing fatigue in general and conserving cardiac strength as a consequence.

6. Avoid unnecessary effort which sacrifices the hours of rest and recreation every middle aged person needs in order to conserve cardiac strength for the long pull over the years ahead.

7. A balanced dietary program is important, but special emphasis should be placed on moderation in the size of meals and on a quiet and unhurried manner of eating. The inordinate consumption of caffein drinks is not favorable, nor is the immoderate use of alcohol or tobacco conducive to optimum cardiac

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Ewing, Galloway

Riding is recommended as a suitably moderate form of exercise for the balanced plan of living recommended for those in the middle years of life. A philosophy of tranquillity is essential.

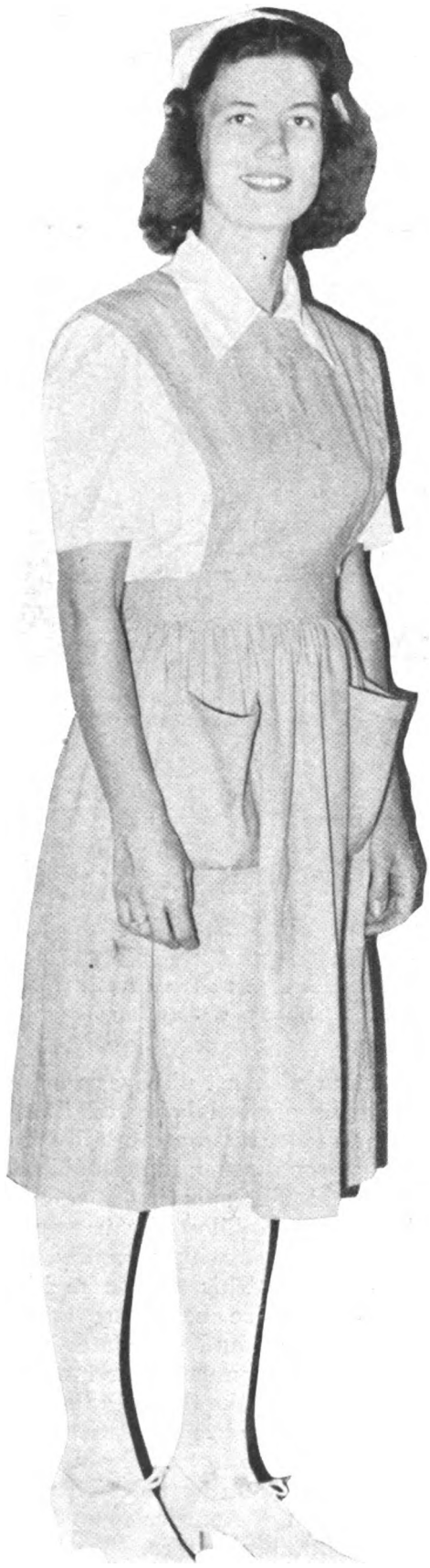
integrity. There is evidence that fat, concentrated starches and sweets are undesirable, particularly in the presence of overweight.

In general, it is well for a person past middle life to cut down on fats, particularly cooked greases and fat meats. Even butter and cream should be taken in moderation—2 or 3 pats of butter and 1 or 2 tablespoons of cream are sufficient to fulfil the average daily requirement of those in late maturity who tend to be overweight.

Eating 2 or 3 fresh vegetables a day (including a leafy one), a portion of fruit, a moderate amount of lean meat, an egg, and 2 glasses of milk or a portion of cheese is essential in order to maintain a well balanced dietary program that will insure adequate vitamin and mineral intake.

8. The prevention of heart disease is based on sound principles of well balanced living, with emphasis on moderation, equanimity and conservation of energy through the middle and later decades of life. The adoption of a more tranquil and protective philosophy is important, particularly to those with a family history of heart disease. This entails making every effort and sacrifice necessary to get along with one's family and associates with broad tolerance and maximum understanding. In other words, we must take the path through life in our stride and realize that more can be accomplished in the long run by a quiet and well ordered plan than by the high pressure method so typical of America today. Let us "emote" less and think more. *We must use our heads to conserve our hearts!*

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More Hands for

Biggest and most useful role of women in civilian defense is that of nurses' aide. To relieve the shortage of nursing service in civilian hospitals, the Red Cross is prepared to train 100,000 volunteers

By GEORGE BAEHR

WOMEN ALL OVER AMERICA are asking what they can do to help in the nation's preparation for the crisis that looms ahead.

To those whose time is not fully occupied by business or home duties the United States Office of Civilian Defense, a government agency charged with guiding civilian activities in the national emergency, has an answer.

The OCD, taking a leaf from England's record of unpreparedness, is examining every aspect of our lives to find ways in which civilians may help build a defense against the menace that now hangs over every man, woman and child in the United States, the menace to our right to live as free Americans. Opportunities that the planning agency has unearthed range from preparing school lunches to practice in extinguishing incendiary bombs—from teaching American history to driving an ambulance.

When the armed forces of the United States began to expand as a result of the alarming rush of events in Europe, there was an immediate call for nurses. The Army needed them for hospitals in training camps. The United States Public Health Service needed them to go to the aid of states in which mushroom communities suddenly appeared around new or expanded industrial centers and in areas about Army cantonments. As a result of this sudden drain on the country's supply of nurses, hospitals, clinics, health and welfare agencies soon began to report that they did not have enough to carry on their services.

To conserve the time, skill and energy of graduate nurses, the American Red Cross and the Medical Division of the Office of Civilian Defense have combined forces to organize the Volunteer Nurses' Aide Corps throughout the country and have set as their objective the training of 100,000 aides within a year.

The course of study has been adapted from one already being used by the Red Cross. So urgent is

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the Nurse!

the need that the time of training has been shortened from 100 to 80 hours and the subject matter of the course has been revised to meet national defense needs. The first thirty-four hours of the course, consisting of lectures and demonstrations, are to be given in the local Red Cross chapters headquarters or any other suitable place. After this the aides go into hospitals, carefully chosen as training centers, for actual practice three hours a day, five days a week for a total of forty-five hours. Then there is an hour of examination. The whole course is finished in seven weeks.

If war or a domestic disaster comes, the nurses' aide will be in the front line of action. Hospitals all over the country are rapidly organizing emergency medical units according to plans laid down by the Medical Division of the Office of Civilian Defense. In each squad that forms part of a unit will be found one or more nurses' aides standing at the side of the doctor and nurse, one of a life-saving team. Such a unit did yeoman service at the great dock fire in New York last summer. Similar ones have borne the brunt of first aid service in the bombed cities of Britain.

Every nurses' aide must take the standard Red Cross first aid course for civilian defense before her first year of service is over. This is in addition to the eighty hours in the nurses' aide course.



The nurses' aide serves with doctor and nurse as one of a life-saving team. Aide Jane Womack does hospital work.



Routine duties, such as temperature observations, may be performed by the nurses' aide to relieve the nurse.

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Jane Womack, in new Red Cross nurses' aide uniform, delivers food tray to a hospital patient.



Tasks performed by the nurses' aide are many and varied — she is an "assistant nurse."

The volunteer nurses' aide will never take the place of the nurse. Her very title emphasizes the fact that she is an assistant, not an independent worker. As the Red Cross instructions say, the function of the nurses' aide is "to give more hands to the nurse."

What are the tasks that a volunteer nurses' aide may safely perform? They are many and varied. The Red Cross and the Office of Civilian Defense have issued a specific list of them, subject to the approval of the individual hospital or agency that uses the nurses' aides. If any hospital or organization wishes to add any duties to the official list, however, it must first consult the Red Cross.

Some of the thousand and one things that a nurse usually does in a hospital do not actually require a professionally trained person to handle them. They do demand a practiced hand, though. With the training given under the defense program and under the supervision of a nurse, an aide may keep the patient's surroundings in order, help with equipment and supplies and do many little things to keep a sick person comfortable and cheerful.

The official list shows the aide making beds, taking care of personal belongings, giving baths and shampoos, preparing patients for meals, feeding helpless ones, taking care of supplies, arranging flowers, helping patients to and from the x-ray or other treatment rooms, sometimes even helping with dressings and bandages when there is no danger of infection. These are only a few of the things an aide may do to help a nurse.

Dispensaries and clinics, where patients, besides being ill, are often unhappy and frightened, sometimes unable to speak or understand English, offer special opportunities to the volunteer. She may help the new patient to register, the one whose English is inadequate to understand what is said and done. Interpretation of clinic rules and instructions may save many errors and keep patients coming to the clinics until their treatments are finished. Here, too, the nurses' aide may help record the doctor's notes, keep the rooms in order, clean instruments, clean and mend rubber gloves and make inventories.

When the nurses' aide goes to a community health agency outside a hospital she may help with nursing and clerical duties approved by the organization, always provided she works under the supervision of a qualified nurse. She may not do anything that resembles giving a treatment, such as a hypodermic or an enema. She may make home visits for nurses to obtain information or to give routine instructions, but not for nursing or teaching purposes. In short, the program will allow no lowering of nursing standards through substandard work done by those who have not had the nurse's technical education.

(Continued on page 120)

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The list of aide's duties includes making beds, helping patients to and from treatment rooms—



—giving baths and shampoos, taking care of personal belongings and helping with bandages.



The nurses' aide must have at least a high school education; she must be physically able to stand hard work and mentally flexible enough to work under close direction.

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Teaching the Human Touch

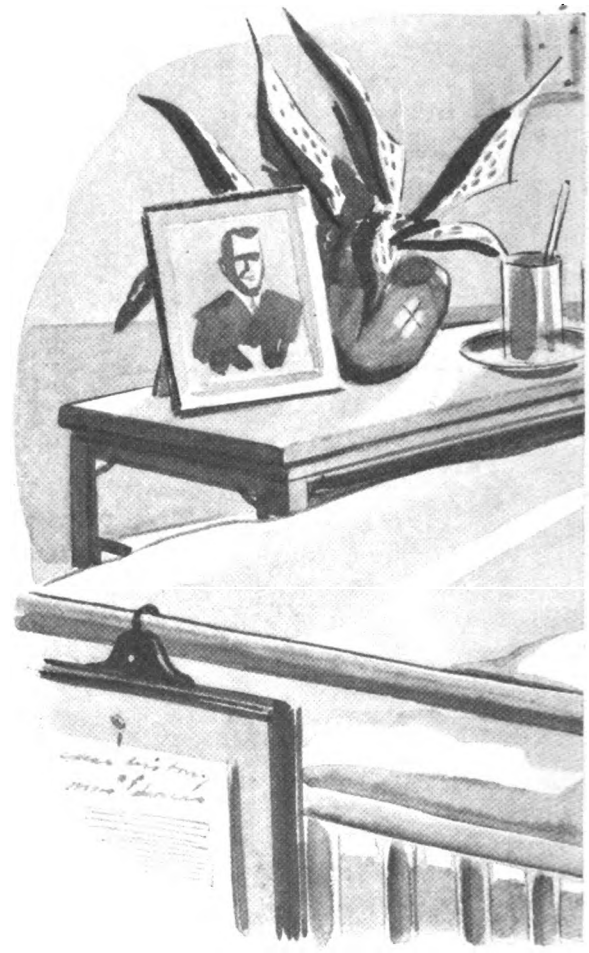
Rewritten by R. M. Cunningham, Jr., a recent report in the Journal of the American Medical Association describes a new, unique effort to emphasize the social importance of sickness

TEACHING INTERNS to ask "How's your home life?" as well as "Where does it hurt?" is not specifically an objective of the intern training program at Boston's Beth Israel Hospital, but that's the general idea. As doctors in private practice, former interns say the hospital's emphasis on the social aspects of illness has helped them to a keener understanding of their patients, a quicker development of the human touch that most people need and appreciate, and a better knowledge of the important part economic factors may play in illness and convalescence. Many believe that their whole medical experience has been enriched by this unique effort to teach young doctors that the practice of medicine is the care of sick men, women and children rather than simply the treatment of sickness.

Recognizing that the medical student has to concentrate on the scientific study of disease and crowd a vast accumulation of technical knowledge into the undergraduate years, originators of the plan ten years ago saw that it was becoming increasingly difficult for the student to see the patient "in all his dimensions." Internship, they felt, provided the ideal opportunity to awaken the student's interest in hospital patients as people.

Deliberately, physicians and social workers at Beth Israel Hospital formulated a program to compel the intern's attention to considerations commonly neglected in his previous training. Through a routine which was made as much a part of his duties as taking medical histories and reporting the progress of treatment, the intern was required to investigate the social background of each patient, probe the relationship of the social situation to the disability causing hospitalization, study the patient's attitude toward his own illness and its effect on his home life, and anticipate the effect on home and family of whatever plan of care is indicated for the illness.

Details of the program as worked out during the past ten years by Ethel Cohen, director of social service at the hospital and assistant in medicine at Tufts College Medical School, and Dr. Harry Derow, instructor in medicine at Harvard Medical School and a member of the hospital's visiting staff, are described in an article which appeared recently in *The Journal of the American Medical Association.* Briefly, the program provides that the intern shall acquire through his own efforts a comprehensive social knowledge of each patient in

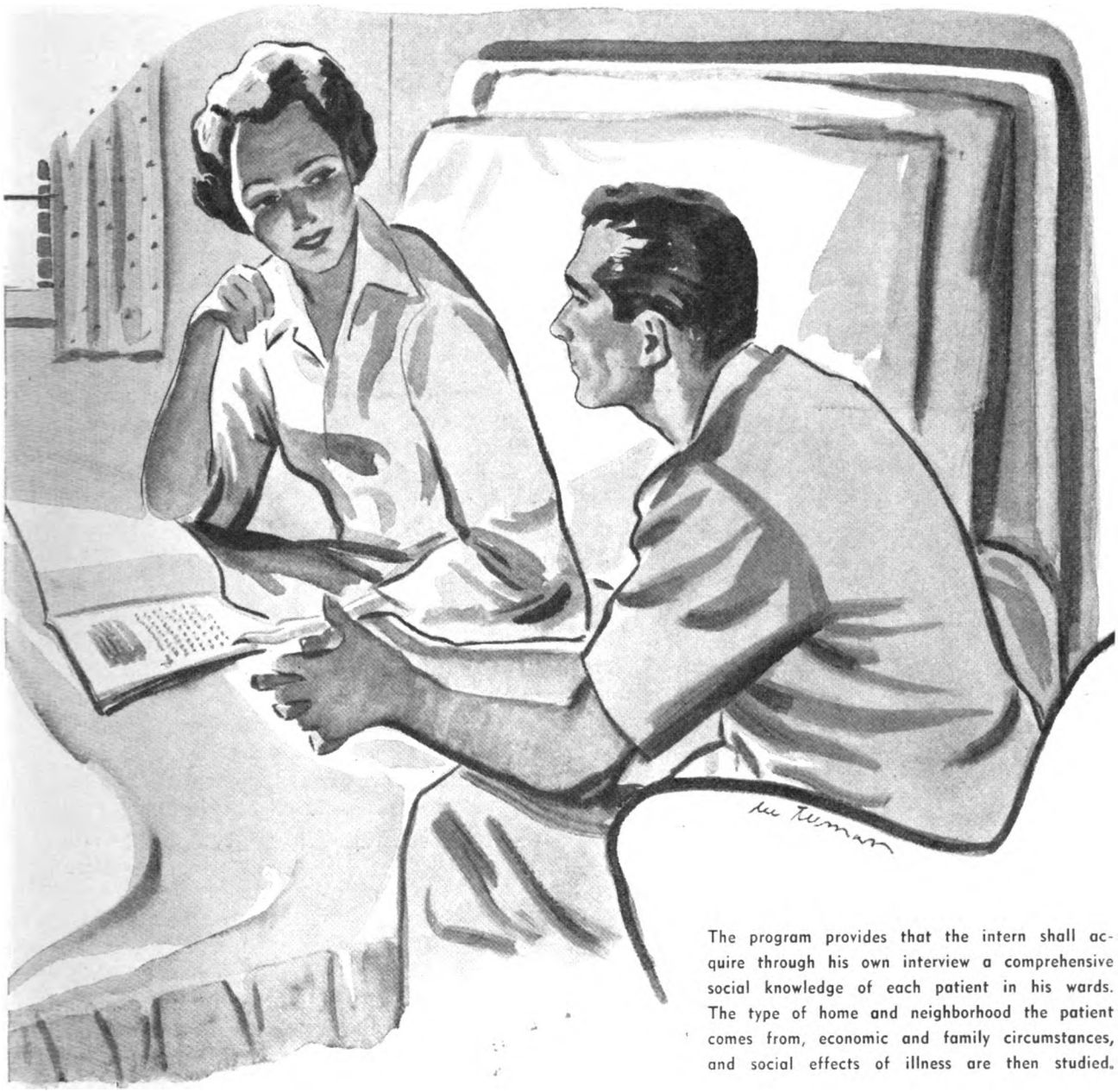


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his wards, discuss the social aspects of each case during weekly "medical social ward rounds" with a resident physician and medical social worker, and participate in the planning of a practical program of after-care considering the social as well as the medical needs of the patient.

Interns are not always adept at first at exploring the social environment from which the patient has come to the hospital and to which he must be returned. Miss Cohen and Dr. Derow tell of one case in which an intern reported that his initial investigation revealed these facts: The patient was a dietitian earning $135 a month until a few months prior to her hospitalization. She was living at a private club and maintaining her son in a private school. Assuming from this story the existence of adequate savings or independent means, the intern concluded reasonably that a social problem was not present.

The social worker, however, was trained to suspect information gained easily from ward patients, who are frequently fearful that the true facts of their economic circumstances may prejudice the type of care they receive in the hospital. In this instance, she felt that the reports of club *(Continued on page 128)*



The program provides that the intern shall acquire through his own interview a comprehensive social knowledge of each patient in his wards. The type of home and neighborhood the patient comes from, economic and family circumstances, and social effects of illness are then studied.

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GLAUCOMA

The suffering caused by glaucoma and its tragic consequences may usually be prevented if early symptoms are recognized and correct treatment is undertaken at once. By ARTHUR A. KNAPP

OF ALL THE SERIOUS DISEASES of the eye, glaucoma is the most prevalent. It claims many victims, but most of its ravages can and should be prevented.

Glaucoma is the term applied to a variety of conditions, with abnormally increased pressure within the eye as a symptom common to all of them. Normal pressure in the eye is that degree of pressure which the tissues of the eyes are able to withstand without any interference with vision. What is meant by pressure within the eye? Briefly, the eye may be compared to a rubber ball filled with water. If more water is added, the pressure of the liquid within the ball rises, and it becomes harder. So with the eye; if the pressure of the liquids in it increases, the same result is apparent, and the condition is known as glaucoma. The hardness is always damaging to an eye, but what is normal pressure for one person may be abnormal for another, depending on the structure of the eye.

Four centuries before Christ, the Greek physician Hippocrates recognized glaucoma. As a matter of fact, its name dates back to that period; the word "glaucoma" is derived from the Greek word meaning "sea-green," the color of the pupil in eyes which have lost their sight through this disease. From ancient times to this day, that name has been retained. Sometimes, however, glaucoma is referred to as "ocular hypertension," which means high pressure in the eye.

Glaucoma may be classified into three great groups: primary, secondary, and congenital. Acute inflammatory glaucoma, a subdivision of the primary form, is that dreaded sudden attack of glaucoma unhappily known to many who have been stricken. It is more frequent in women than in men and may be expected between the ages of 35 and 70, although exceptions are frequent. Thin, wiry and emotionally unstable persons are more prone to an "attack," and 75 per cent of the victims are far-sighted. Some families have shown glaucoma for five generations.

When a patient tells of glaucoma in the family, exhaustive tests are made to determine the presence or absence of the malady. It is surprising how often very early glaucoma is discovered. Such early discovery is much to the patient's advantage, for it is in its early stages, and then only, that most of the tragedy of this serious eye trouble may be avoided.

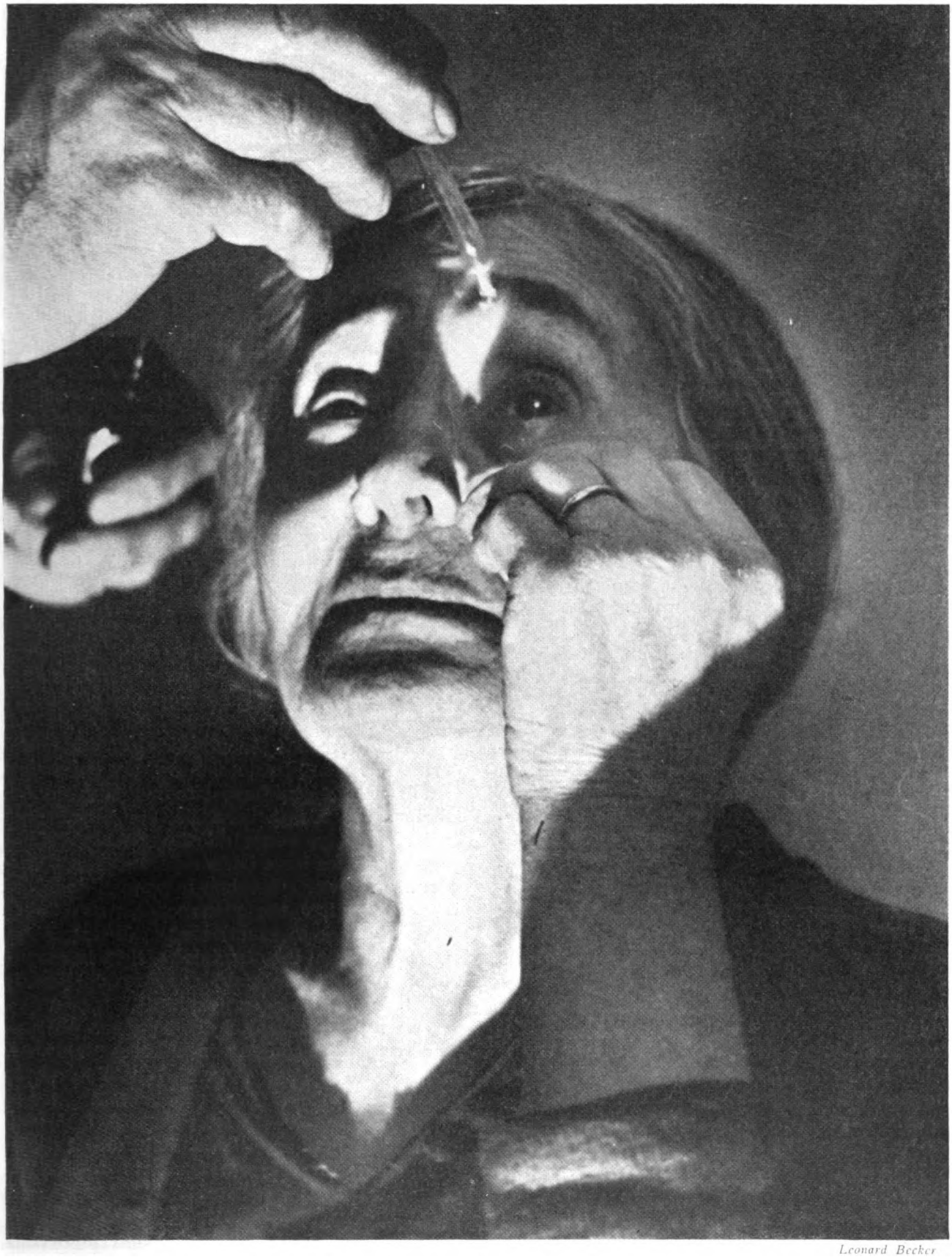
Acute Glaucoma

Most cases of acute glaucoma are preceded by "prodromal attacks." These are mild, warning attacks of pain in and around the eye, accompanied by redness, usually lasting from one to three hours. There may be a rainbow halo around lights, headache and tears. These danger signals should be heeded. Nature displays a warning red light; should the red light be passed, months may go by without a recurrence. Finally, there is no subsidence, and when this occurs a full-blown attack of glaucoma is present.

This is one of the most dramatic and explosive of eye catastrophes. Generally, the patient is blind and has excruciating pain. The affected eye is intensely bloodshot; it discharges tears and shows a swelling of the lids. The pressure within is raised, and the globe feels hard to the touch.

Drops are prescribed for treatment of the first warning signs. Unfortunately, the eye doctor seldom sees the patient in this stage. The physician is dependent on the patient's history for his diagnosis at this time, since the eye may present no evidence of heightened pressure. When glau- *(Continued on page 144)*

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Leonard Becker

Drops are prescribed for treatment of the first warning signs — mild attacks of pain in and around the eye, redness, a rainbow halo around lights, headache and tears. Chronic patients may be kept comfortable for years using only drops.

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Troubled with Dandruff?

Millions of Americans suffer the inconvenience and annoyance of dandruff and waste their money on "cures" offered by manufacturers whose advertising claims have brought about a widespread misunderstanding of the nature of dandruff

By LOIS MATTOX MILLER

DO YOU HAVE DANDRUFF? Advertisements persistently want to know—and the answer is usually "Yes." Dermatologists estimate that dandruff attacks 75 to 95 per cent of American scalps.

What *is* this puzzling and persistent nuisance? Is it a more or less normal condition, or is it an infectious disease? Is it a forerunner of baldness? Is it potentially serious, or should it be classed as a petty annoyance?

Advertisers have done much to confuse these issues in the public mind. There is a disease, known to doctors as "seborrhea dermatitis," in which a discharge from the infected sebaceous glands collects in thick scales on the scalp, produces sores, itchiness and even baldness. There is also a "sticky" type of dandruff, in which the dandruff scales are moistened by an oily scalp condition. Certain hair-tonic and antiseptic advertisers have dramatized the resemblance between seborrhea and oily dandruff to heighten the dandruff scare.

Seborrhea is a matter for the doctor. Fortunately, it is rare—only two tenths of one per cent of the people ever have it. To imply that simple dandruff is a form of seborrhea is to be deliberately misleading.

There are several forms of dandruff, but the only widely prevalent one is that which doctors call "simple dandruff." The untidy little white flakes that shower upon almost everybody's coat collar are dried bits of scalp. Simple dandruff is a continual flaking of the top or "horny layer" of the skin.

What causes this excessive flaking? Medical researchers are as baffled over the true cause of simple dandruff as they are over the deeper mysteries of the common cold. The great French hair-and-skin specialist, Dr. Raymond Sabouraud, blamed a bottle-shaped germ called *Pityosporum ovale*, which he found between the dandruff scales. But other investigators found the "bottle-bacillus" swarming in scalps untroubled by any form of dandruff! So doctors still lack an open-and-shut case against any "dandruff germ."

It is believed that other factors than germs play a part. Your scalp is a pretty good barometer of your general health. Rich food, excessive use of tobacco and alcohol, lack of sleep, overexertion, and nervous strain are common suspects.

Then there are the mysterious, vital endocrine glands. Doctors have observed that small babies can have simple dandruff, but serious scalp infections do not occur until after puberty, when all the glands become active. Cases have been reported where dandruff and even seborrhea in women have disappeared after the menopouse, when some endocrines cease functioning. All dermatologists agree that the glandular system has something to do with scalp conditions. Exactly what, is disputed territory.

But if the causes of dandruff are obscure, the results are sometimes embarrassingly evident. What can one do to check the shower of scalp flakes? Of what value are advertised preparations—"hair-tonics" and "dandruff cures"? Doctors are weary from answering this one. Bottled preparations don't "cure" dandruff; they may do

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Harold M. Lambert

One shampoo a week — with proper soap selected to suit the condition of the hair and scalp—seems to suffice for most people. Washing the hair twice a week does no harm.

some harm; at best they're a waste of money! Scarcely a month passes in which the Federal Trade Commission does not crack down on some manufacturer for advertising that his preparation will "cure" dandruff, "get at the root of the trouble" or "penetrate the hair follicle and annihilate the germ." Such claims are not only false and misleading; they are scientific impossibilities! Some preparations do dissolve dandruff scales—but so does soap and water.

A few "tonics" contain ingredients that are definitely harmful to the hair and scalp. Most, however, are made up of oil or alcohol, water, coloring matter and scent. Yet even such a "harmless" hair-tonic can complicate the very dandruff condition it purports to "cure." Too much alcohol is bad for a dry scalp; too much oil is bad for an oily scalp. In any event, such preparations are never bargains; the bottle often costs more than its contents.

Can you "cure" dandruff? "No," says the doctor; "but you can keep it in check." If the hair is naturally oily, shampoo with tincture of green soap, an inexpensive fluid obtainable at any drug store. If the scalp is dry, use one of the superfatted soaps which may be purchased at the drug store. Never rub soap directly on the hair; it's harder to rinse out afterward. Shaved into flakes and dissolved in water, ordinary white soap is as satisfactory as any prepared liquid shampoo. Medication in soaps has scant value: for one thing, the ingredients are never on the scalp long enough to have any real effect; for another, it is impossible to prescribe one medication suitable for all scalps.

One shampoo a week seems to suffice for most people. But washing the hair twice a week or oftener will do no harm. Rinse several times to remove all the soap; then be sure that the hair and *(Continued on page 141)*

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A report of the National Committee for the Resettlement of Foreign Physicians, published in a recent issue of The Journal of the American Medical Association, briefed

DOCTORS

By ROBERT MARIS

A PHYSICIAN with a foreign-sounding name faces ruin in a small town in the East because of a vicious, uncontrollable rumor that he is an alien spy. Another's practice disappears with the spread of a preposterous whispering campaign that he dispenses "slow acting poison" in his prescriptions!

Fantastic as it may sound, these are actual incidents reported by field investigators for the National Committee for the Resettlement of Foreign Physicians, which attributes such gossip to prejudice, unfriendliness and unwillingness to make allowance for the period of adaptation and assimilation necessary to transform an immigrant into an American. Fortunately, such ocurrences are rare. For the most part, émigré physicians who have located in small towns or villages are nicely assimilated. They are members of Rotary, Kiwanis, the Grange, or the volunteer fire department; their wives are active in women's social and civic organizations; their children are bringing friends home after school. They are "of" as well as "in" their communities, and if this is less generally true of foreign physicians in the larger towns and big cities, the problem is in no sense peculiar to doctors of foreign birth; the difficulties of starting a new practice in a big city are well known to many a native son of unquestioned ability!



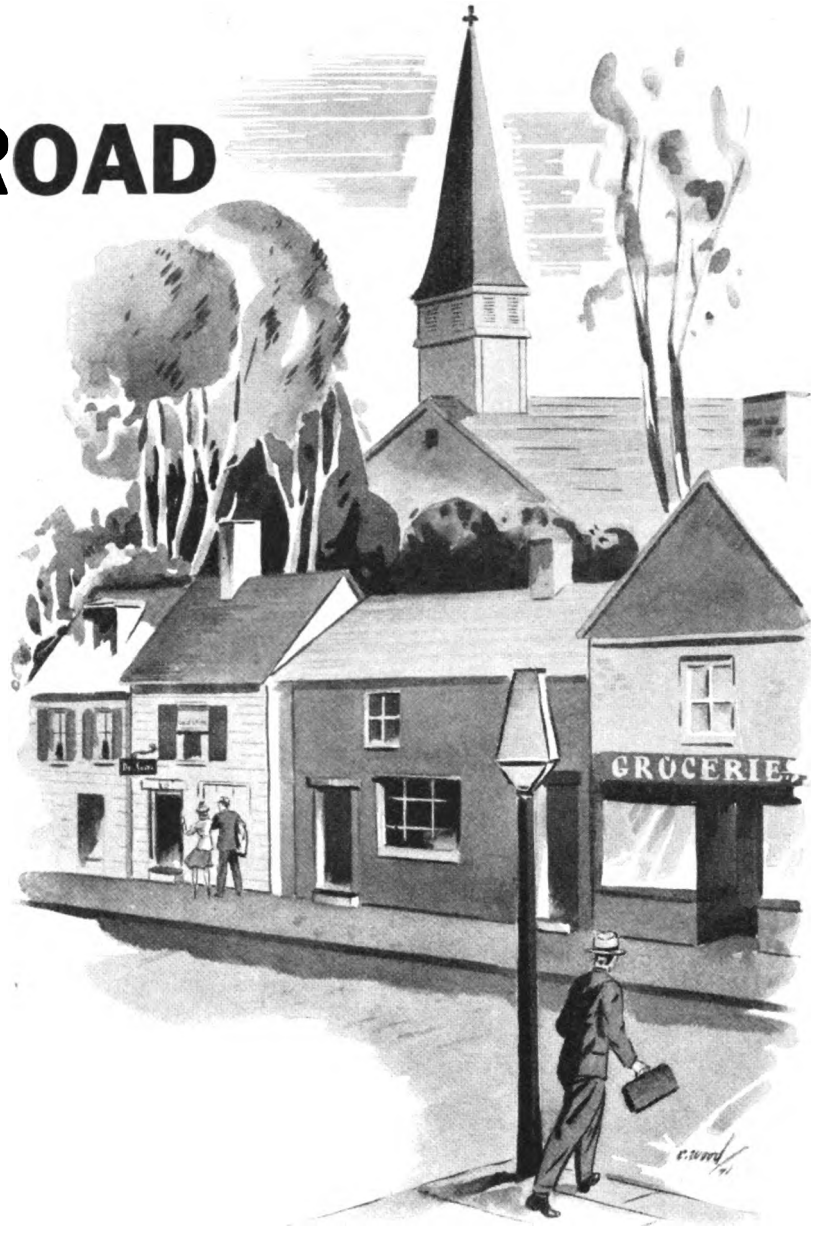
Unfriendliness is rare in American towns; most émigré doctors are well assimilated.

It is popularly supposed that the country is overflowing with physicians who have emigrated from European countries in recent years, and that these "refugee doctors" have disrupted the practice of medicine for Americans—particularly along the Eastern seaboard—in our larger cities. According to United States Department of Labor Statistics, the total of immigrant physicians admitted to the United States during the years 1933 to 1940 was 5,056, or about the number usually graduated from American medical schools in a single year. Moreover, the Committee for Resettlement of Foreign Physicians has sought conscientiously to make certain that as many as possible of the newcomers are located in communities really needing additional medical service, with the result that the populations of a number of small towns in New York, Ohio, Illinois, California, Colorado, Maryland, New Jersey and Virginia are enjoying better medical care, in many respects, than they have ever had before.

In a recent report covering the two years of its operation, the Committee pointed out that whereas in 1906 there had been 1 physician to every 625 persons in the United States, it is estimated that in 1940 there were more than 800 persons for every physician! In addition, the report emphasizes that the present national emergency is requiring greater and greater numbers of physicians for Army, Navy and

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from ABROAD



The Committee has sought to make certain that the newcomers locate in communities truly needing additional medical service.

other government services, that sudden shifts in civilian population to defense industry centers have created shortages of physicians in certain areas, and that the tendency in recent years for young medical graduates to seek professional laurels in urban communities has left enough room in the smaller towns for all who have come from Europe since the beginning of fascist aggressions.

The Committee was formed two years ago when thoughtful physicians considered the possibility that incoming doctors might congregate in the eastern cities even though the need—and their greatest opportunity for happiness—lay elsewhere. They realized, too, that the new arrivals would need assistance in meeting the requirements for registration and licensure established to protect American communities from incompetents, that only by long term planning and careful organization could the services of immigrant doctors be utilized to produce the best results for the public, the medical profession of America and the émigrés themselves. Specific objectives of the Committee, then, were to evaluate the eligibility of individual émigré physicians to practice medicine in the United States, to assist those who were found competent in preparing for examinations and for American medical requirements, and to further their resettlement in places where medical services were needed.

The report published in a recent issue of *The Journal of the American Medical Association* by Drs. David L. Edsall and Tracy J. Putnam, respectively chairman and vice chairman of the Committee, indicates that more than 4,000 physicians have been registered for Committee assistance, which begins with the provision of facilities, *(Continued on page 140)*

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Stephen Deutch

Can Varicose Veins

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MEDICAL EDUCATION and outdoor sports which expose the body to public scrutiny are making men and women more and more self-conscious about their physiques. Many are loath to allow their extremities to be uncovered because of unsightly varicose veins, ulcers and pigmentation that the eyes of the curious may stare at. Besides, if these people participate in any outdoor activities their legs tire easily, and there is always the possibility of injuring the varicose veins, causing phlebitis or varicose ulcer. There is no doubt that the number of patients seeking treatment for varicose veins in the spring results not only from their wish for permanent relief, but also from the fact that for vanity's sake they wish to have presentable legs for summer bathing. Many women who suffer from varicose veins wish to enjoy a stockingless summer. Women far outnumber men in receiving treatment for varicosities.

Whatever the reason the patient seeks treatment, she should decide early to undergo examination—even at the very first sign of a varicose vein. It is a far better policy to obtain early advice and prevent the addition of more varicosities than to wait until the entire leg is studded with varicose veins. There are methods of prevention, but some of the prominent causes of varicose veins should be discussed to provide a fuller understanding of the preventive measures.

Varicose veins appear to affect whole families, for many women recall that their mothers and grandmothers suffered from the same disorder. In reviewing this familial tendency, it might be found that all three generations had many pregnancies and thus were more prone to develop varicosities. Often one hears from men that their fathers suffered from varicose veins because long hours of standing were required in their occupations. In such situations, the proper procedure is to visit the physician to determine what can be done to prevent a repetition of the same disorder.

Obesity, whether caused by an endocrine or dietary disturbance, is prevalent among patients suffering from varicose veins. Satisfactory results from treatment in this type of case can only be assured if measures to institute weight reduction are likewise prescribed. If no attempt is made to overcome the factor of obesity, recurrence of varicosity is likely.

Varicose veins frequently are first evident when a patient begins to walk about after a long illness. This is due to the fact that the patient's leg muscles are weak, the vein walls have lost their elasticity and the skin is relaxed. The change to standing position under those conditions and with the return of the pressure in the veins has caused the blood vessels to dilate. Unless measures to counteract the change of posture are adopted, these veins will develop into true varicosities. Before such a patient is allowed to leave his bed an elastic stocking or bandage should be placed on both legs from the foot to the knee. Essentially this will give the added support that is necessary until the legs have once again regained their former strength.

Phlebitis, or inflammation of a vein, whether superficial or deep in the leg, has been noted as a cause of varicosities. Often a vein will reopen after phlebitis has subsided, but if it should become permanently closed other veins must function in its place, and a compensatory dilatation of surrounding veins may occur. Thus it is im- *(Continued on page 154)*

Early diagnosis to permit proper preventive measures and correct treatment are vital factors in the management of varicose veins. The result for patients who undergo the treatment is so gratifying that those suffering symptoms of varicosity should not hesitate to seek medical advice

By BERNARD BEHREND

Be Prevented?

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Home Defense

IS YOUR HOME ACCIDENT PROOF?

Since many home accidents are caused by defective furnishings and poor household management, the following check list is suggested for detecting the most common causes of home accidents. Place a check (V) on the line next to the question when the answer is "YES" and a circle (o) when the answer is "NO."

——Are stairs well lighted (lighting unit controlled from a point reached before the light is needed)?
——Are handrails provided on stairs (especially cellar and attic)?
——Are stair rugs fastened and free from wrinkles and curled edges?
——Are gates placed at the top of all open stairways and porch steps if babies are allowed to crawl around?
——Are stairs kept clear of toys, marbles, pencils, mops or other objects?
——Are attic, basement and garage kept clear of rubbish?
——Is a stand provided for the electric iron?
——Is outdoor radio antenna equipped with a lightning arrester?
——Is First Aid equipment kept in accessible places?
——Is medicine cabinet above reach of all children and all poisons segregated and carefully marked?
——Are separate metal cans provided for ashes and rubbish?
——Are fire resisting guards in front of all woodwork close to heat?
——Are oily mops and rags kept in a metal container?
——Are inflammable liquids such as kerosene kept in tightly closed metal containers and away from heating systems and hot pipes?
——Are steps and walks kept free of ice?
——Is there a fire extinguisher in the house?

KITCHEN:—
——Are sharp tools kept in separate compartments and out of reach of the children?
——Are matches kept in tin boxes and out of reach of children?
——Are gas cocks adjusted to turn smoothly but not too easily?
——Are gas connections made with solid piping?
——Are stoves equipped with pipes to chimneys?
——Is stove (especially oven) kept free of food grease which may catch fire?
——Are electrical fixtures in good repair (including wires)?

LIVING ROOM:—
——Are incombustible ash trays provided for smokers?
——Is there a screen for the open fire place?
——Are scatter rugs equipped with pads to prevent slipping?

BATHROOM:—
——Is handrail provided for help in getting out of bath tub?
——Is rubber mat provided to prevent slipping in bath tub or shower?
——Is hot water faucet controlled to prevent scalding?
——Are electric lights controlled by wall switch to prevent shock?

NURSERY:—
——Is baby crib provided with high sides and the railing sufficiently close to prevent baby pushing head through partitions?
——Are a small table and chair provided for baby to prevent using a regular chair?
——Is furniture steady and made with round corners?
——Are toys of tested and safe nature?
——Is nursery carefully lighted with attachments which cannot be handled by the child?
——Is provision made for sanitary use of baby's effects?

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Against Accidents

By R. L. LEE



Authenticated News Photo

In spite of close attention to safety features by manufacturers, mechanical devices and appliances can never be 100 per cent accident proof. The price of carelessness may always be accident!

SHUDDERING at the horrors of war, inhabitants of the United States have been prone to felicitate themselves on being safe in their own homes, forgetting that in one year home accidents have killed 33,000 persons, caused 4,850,000 disabling accidents—of which 140,000 resulted in permanent disability—and cost many millions of dollars. In five years these accidental deaths have totaled 167,000, with injuries and property losses mounting accordingly. In our ardor for national defense against foreign foes, this grisly home accident toll should not be overlooked or given only sporadic attention.

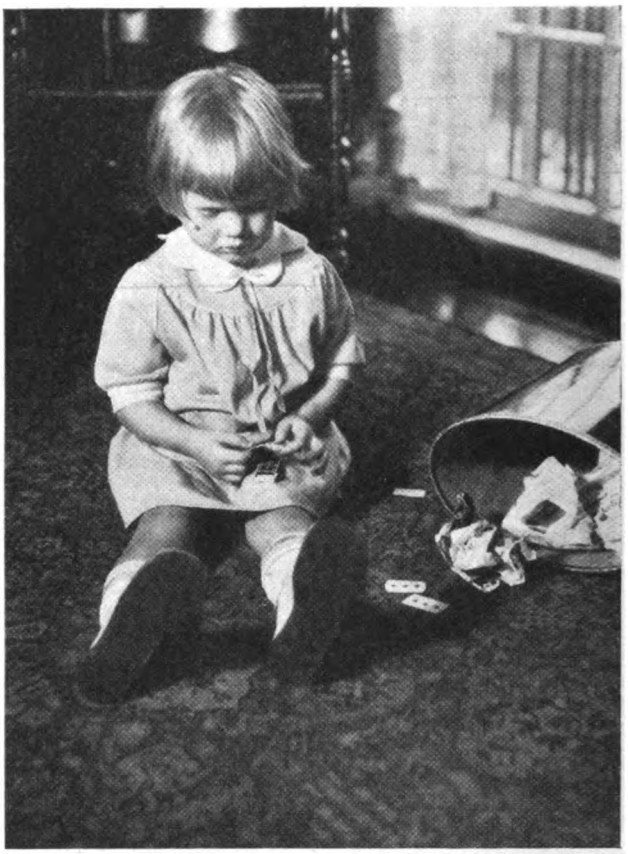
Outstanding defense work against these tragic disasters in our midst has been accomplished by Rosamond Losh, director of the Children's Bureau of Kansas City, in a continuous campaign which has reduced by half the number of children killed in home accidents. With parent and civic

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Acme

Oily accumulations of waste or rags are a constant fire hazard — according to the Kansas City check-list, a metal container for rags should be provided.



Authenticated News Photo

A dreadful accident may be in store for this child, who can't be expected to fear the razor blade which Father threw carelessly away into the wastebasket.

cooperation, Miss Losh has supervised thousands of volunteer workers in a constructive program to vitalize home-safety instruction, to stimulate interest in home-safety equipment and to make possible city-wide inspections. Her safety precautions often combat illness as well as accidents and make for better health and home conditions generally. The department of sociology in the Kansas City Junior College has shown its approval by requiring all its students to engage in this activity.

The following suggestions indicate Miss Losh's line of attack and are of value to any community planning for greater home safety.

1. Determine how many fatal and serious accidents are occurring in homes, learn how and where they have occurred and whether or not they are on the increase.

2. Get actively and cooperatively behind a safety campaign 365 days in the year.

3. Secure the cooperation of local civic and social organizations.

4. Conduct home-safety classes. National Safety Council lesson are helpful.

5. Arrange for a home-safety speakers' bureau to provide speakers for short safety talks before social and civic clubs.

6. Arrange a force of workers for a city-wide, house to house canvass to distribute and explain the home-safety inspection blank and to award window stickers when conditions warrant.

7. Provide home-safety exhibits and demonstrations which consist of the known devices for insuring home safety.

8. Give a series of radio talks to set forth the needs of the movement and outline the proposed procedure. Request radio audience to send in safety suggestions to be read on the next radio hour.

9. Select some desirable homes for home-safety demonstration purposes.

10. Make use of the safety education and safety equipment which the power and light company in your community has developed.

This ten point plan can be carried out under the direction of the local safety council or some other *(Continued on page 129)*

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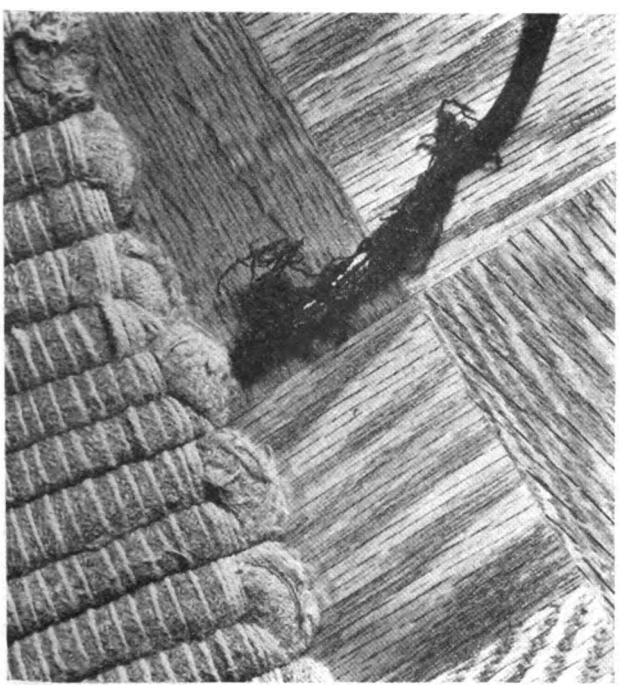
WATCH for THESE!

In Kansas City, volunteer safety workers are on the alert to discover and eliminate the careless practices responsible for the kind of accidents that result in nearly 5,000,000 disabling injuries in the United States every year. These pictures show a few of the more common ones. That such accidents can be prevented is proved by the Kansas City program, which has halved the annual toll since 1938



Authenticated News Photo

To make certain that inquisitive children won't come to harm, safety-minded housekeepers provide a place for everything, keep everything in place.



Acme

Lamp cords should be placed against walls, not out in the room where they may trip somebody's toes; a worn or frayed cord may be a dangerous fire hazard.



Acme

The neglect of a hot iron is so spectacularly foolish that it is popularly believed to be extinct as a cause of fire. Studies show that it isn't, though.

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Cab drivers are selected for adaptability shown in "horse sense" intelligence test.

The Man for the Job

By MADELIN BLITZSTEIN

WHEN A MAN APPLIES FOR A JOB, he is usually required to answer a few questions about his age, his birthplace, his experience and his nearest relatives. But, in the opinion of Dr. Morris S. Viteles, Associate Professor of Psychology at the University of Pennsylvania, these routine inquiries and the replies to them do not even begin to give either the applicant or the prospective employer a genuine insight into the kind of work which is to be performed or the fitness of the man for the job.

Dr. Viteles is a pioneer in what he calls the science of work. For more than twenty years, he has been exploring the highways and byways of man's will to work. He has taken trips abroad innumerable times to find out how the French, the Czechs and the Russians employed industrial psychology in building up their factories and their laboratories. He has written articles and books on matching men for jobs, and he has tried out countless tests and examinations to arrive at what he considers a good formula for the two-fold problem of making the worker happier at his task and increasing productive activity.

Nor is Dr. Viteles a man of academic experience only. While he has gone on teaching

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classes at college and keeping his post as head of the Vocational Guidance Clinic at the university, he has put his theories to practical use to such an extent that he has become well known as a trouble-shooter in man's conquest of the machine.

Only recently he received a grant from the National Research Council for research in aeronautics, the idea being that Dr. Viteles will come out of his latest studies with a set of tests that may lead to the improved selection and training of student pilots. Dr. Viteles is learning to fly, so that he will be able to tackle this new subject with a thorough knowledge of its requirements.

In the past, Dr. Viteles has had signal success in a variety of fields, ranging from taxicab driving to electric power stations. But whether he is developing tests for the selection of motor vehicle operators or examinations for stenographers, he always keeps two principal factors in mind: the work to be done and the man who is to do it. For he is certain—and his views today are backed up by years of successful performance—that only if these two aspects of the job are dovetailed can there be efficiency in production and happiness on the job.

Years ago, Dr. Viteles established for the Milwaukee Electric Railway





The work to be done and the man to do it must be carefully matched for efficient production and happiness on the job. Cab driver applicants must meet physical as well as mental requirements (above); but most significant are the standards applied through practical tests to determine temperamental suitability — and the two-day road test given under working conditions.

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and Light Company his first practical test for the hiring of motormen. The results were so good, as shown in the decrease of accidents, the noticeable cutting-down of employee turnover and the lowering of fatigue that the science of industrial psychology got a big boost there and then. Since that time, Dr. Viteles' talents have been felt in many other companies, but it is in the two Philadelphia firms with which he is now actively connected that the most striking results have occurred. One is the Philadelphia Electric Company and the other is the Yellow Cab Company.

It may be puzzling at first glance to see how preliminary tests can tell very much about a taxicab driver. But figures about the driver of the Yellow Cab Company show such a contrast to other companies in other cities that there can be no argument. Cab drivers stay on the job in Philadelphia an average of ten years, compared to sixteen months in New York and a year in other cities. And the courtesy of the Philadelphia cab driver has been remarked on by even such an outstanding anti-Philadelphian as the Manhattan city editor, Stanley Walker.

The tests to which all drivers must submit are not easy to pass. Of those men who apply, only one out of eight is considered sufficiently qualified to take the second part of the test after he has answered the preliminary questions. Only 60 per cent of those who take the final examination succeed in passing it with a high enough mark to qualify for a job.

While no applicant is taken if he is below 23½ years of age or over 35, men between 28 and 33 are considered ideal as a result of studies made on hundreds of cab drivers. All applicants must pass a standard life insurance physical examination. Married men are given twice as high a score as single men, and widowed or divorced men with dependents fall somewhere between the married and the single. Divorced men without dependents are not considered preferable to single men, and those applicants who complain of domestic troubles are not looked on with favor. The applicant who states that he is happily married and a devoted family man gets preference over the bachelor who may have had more years of experience.

In addition to this kind of information on the preliminary examination, there is also what Dr. Viteles calls the "horse sense intelligence test." Typical of the "horse sense" questions is this one:

If your cab broke down and no other cab to which to transfer your passenger was in sight, and your passenger refused to pay his fare because you did not take him to his destination, what would you do?

(a) Hold him till a policeman came?

(b) Beat him with your crank handle until he paid?

(c) Ask him to give you his name and address and allow him to go?

(d) Allow him to go, but follow him until you found a policeman whom you could ask to arrest him?

Another question which is put to the applicants is this:

If you suspected a man loaded with bundles of being a bootlegger, what would you do if he hailed your cab?

(a) Drive by as though you did not see his signal?

(b) Pick him up and drive him to the nearest police station?

(c) Tell him that you cannot carry him unless he assures you he has no liquor in his bundles?

(d) Pick him up and carry him to his destination?

Other "horse sense" questions test the applicant's ability to make change with rapidity and ease, his powers of observation, and his attitudes toward red lights. In these "horse sense" tests, grammar and high school graduates frequently make better scores than college men.

If the applicant passes the preliminary examination with a total score that is satisfactory, he takes a road test for two days. In that time his ability to drive, to park a car, and to fix minor parts in an automobile is tested, as well as his knack for helping customers in and out of cabs and his knowledge of the city. His final instructions are to see unaccompanied women to their door if he drives them home after dark, and to watch out for fingers and feet when he is closing doors. He is then ready to be a cab driver on the streets of Philadelphia—for an average period of ten years!

Over at what Dr. Viteles calls the "human engineering laboratory" at the Philadelphia Electric Company, things are somewhat different. As Director of Personnel Research at this plant, Dr. Viteles devised a series of tests for examining substation operators, by means of which tests switching errors due to the human factor were reduced 90 per cent in a period of five years. *(Continued on page 132)*

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Pulling Teeth Without Pain

Modern dentistry has taken most of the terror out of extractions—the choice of a proper anesthetic can usually render operations about the face and mouth painless. By following a few simple rules the patient himself can help the dentist keep care of the teeth free of pain. These are explained **By R. REED SMITH**

PAUL REVERE is known to every American as an outstanding horseman and patriot, but few are aware that he was also a dentist. He ran announcements regularly in the Boston Country Journal to the effect that he would serve "Those who found it necessary to have teeth drawn and replaced with false ones." With the meager equipment and drugs at his command in those days, he was considered a good dentist. However, he was unable to relieve the pain of "drawing" teeth, for that ability was still unknown.

Faulty Folklore

Modern dentistry has robbed our conversation of the faulty folklore and tales of terror connected with the extraction of teeth. These yarns of terrorism and personal heroism in the dental chair have been largely handed down from Colonial days. By the judicious selection of anesthetics, dentistry today can usually render the extraction of teeth and other operations about the face and mouth painless.

There are two methods by which dental operations are rendered painless—namely, gas and local anesthesia. Since there are some definite contraindications for the use of gas, never insist on its administration if your dentist considers a local anesthetic better for you. In the case of heavy drinkers, for instance, gas is not considered advisable, though it is widely and safely used for many types of patient.

Local anesthetic (blocking) is used far more extensively than gas, and great improvements have been made both in the drug itself and in the method of injection. Novocain is the drug that is usually preferred; a good nerve block with the new novocain solutions will completely black-out pain, and what is of equal importance, do it with absolute safety. These new drugs do not cause a rapid change in blood pressure as the older solutions sometimes did. The old bugaboo of not being able to stand the needle injection is now a thing of the past. Every dentist has access to several new and potent solutions known as topical or surface anesthetics. In most cases this surface anesthetic is swabbed on by a little cotton applicator, and in two or three minutes the needle may be inserted without any pain.

X-Rays Aid Dentist

When the time arrives for extraction, let your dentist first x-ray your teeth. If they are diseased the x-ray will reveal the exact area of infection. X-ray will also aid in the actual extraction work, since it tells the dentist the definite positions of the roots and the density of the bone holding the teeth.

Do not wait until you are driven to the dentist by pain and soreness. The entire extraction procedure can be performed with a minimum of pain if it is started when the gums are in good condition. If they are sore and painful, however, *(Continued on page 126)*

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ACNE

By MAURICE J. COSTELLO

ACNE IS A CHRONIC inflammatory disease of the oil glands and hair follicles. The name is specifically applied to the common pimples, blackheads and pitted scars occurring in the oily skins of adolescents of both sexes. Acne is prevalent between the ages of 12 and 25 and is the most common eruption of that period.

The pimples and blackheads occurring especially on the face, and also on the chest, back, shoulders and arms, comprise the commonest type of acne, referred to as acne vulgaris. This eruption is frequently associated with a skin condition known as seborrheic eczema, in which dandruff or an oily scalp may be found. Itching, redness and scaling behind the ears are also characteristic.

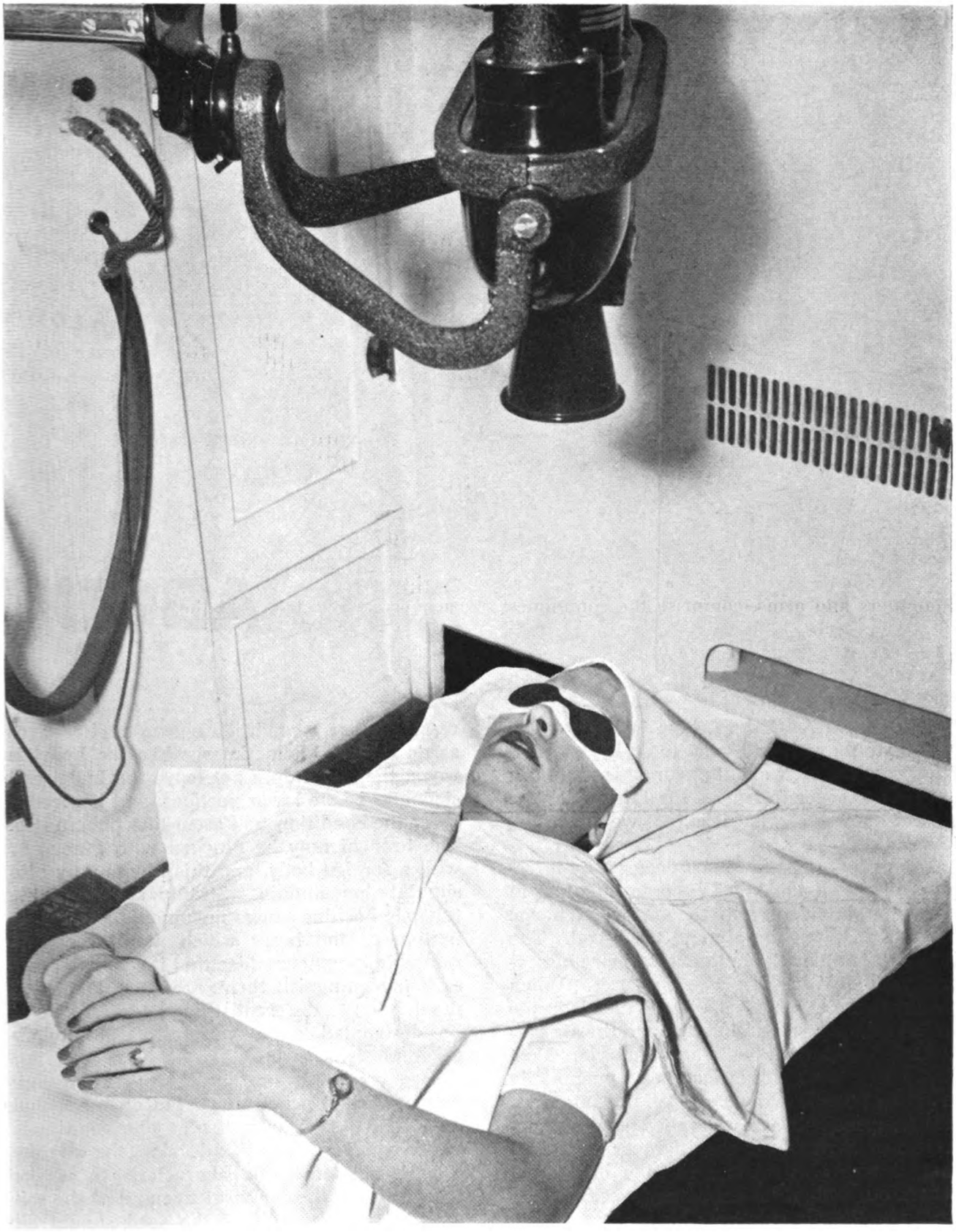
The early lesions of acne are the blackheads, or comedones, which are tiny plugs consisting of fatty material from the oil glands mixed with scales from the wall of the hair shaft. The plugging of the hair follicles and the blackheads are not caused by dirt, as is commonly supposed, but by the chemical changes which occur as a result of exposure to the air. The idea that acne is caused by uncleanliness is false; patients suffering with this condition as a rule are meticulous in the care of the skin, thoroughly washing the affected areas frequently. As a matter of fact, the physician often must caution the acne patient to avoid unreasonable efforts of cleanliness. Infection takes place in the skin because the blackheads act as foreign bodies, developing into pimples and pustules. Bacteria, principally the acne bacillus and the staphylococcus, are found in the plug; they may be contributing causes of acne. Excessive and constantly renewed secretion of the sebaceous glands and lack of oxygen form an ideal medium for the growth of these germs. Pitted scars develop, and the resulting disfigurement depends on the depth and severity of the infection. Certain persons suffering from acne who have a tendency to excessive scar formation develop disfiguring lumps which may be permanent unless treated with x-rays soon after they appear. This tendency is found especially in Negroes, and when these lesions occur on the nape of the neck they are extremely difficult to treat successfully. The tendency to form scars in severe acne is so common that the early application of x-rays is almost imperative.

There are many causes for acne, but the most plausible theory advanced is that which explains it as a result of imbalance of the glands of internal secretion. The sex glands, particularly, seem to have a definite influence, because it is at the time of puberty and adolescence in both sexes that this condition is most apt to occur. At this time all the glands and functions of the body are in a state of overactivity. Acne may also make its appearance at times other than adolescence, when there is temporary derangement of the endocrine system. Abnormalities in fat and carbohydrate metabolism, as well as constipation and anemia, appear to play less important roles.

Acne rosacea, commonly referred to as rosacea, occurs in men and women, usually over 40 years of age. It is an eruption of the face resembling in some features the acne of adolescence. It is seen on the flush areas of the face, in the middle vertical third, including the nose, cheeks, chin and the skin between the eyebrows. The secondary infection in rosacea is accounted for by the presence in the hair follicle of the same bacteria as are found in acne, and by a parasite, which may be only a coincidental finding, known as the demodex.

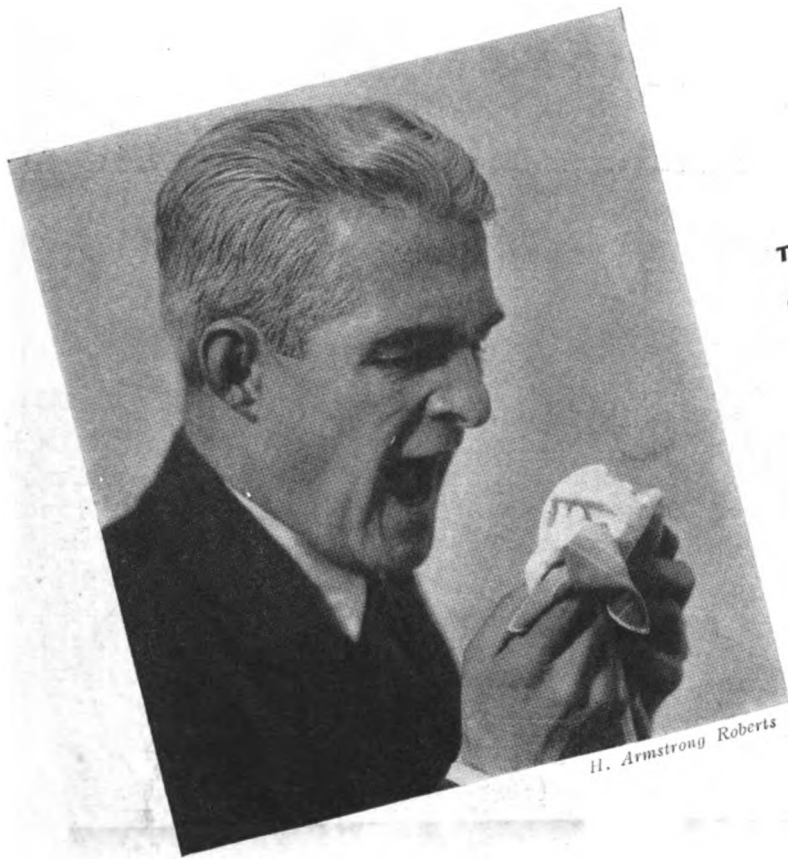
Rosacea is a manifestation of a constitutional condition in *(Continued on page 149)*

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The commonest type of acne is characterized by pimples and blackheads which occur especially on the face and also on the chest, back, shoulders and arms. X-ray treatment is indicated when the blackheads are numerous, large and hard.

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H. Armstrong Roberts

The best way to avoid the dangers of pneumonia is to stay away from crowds and avoid chilling the extremities. When the disease strikes, early and accurate diagnosis aids treatment

By JESSE G. M. BULLOWA

ABOUT

HOW TO AVOID IT, how to know when you have it and what to do if you get it are the facts about pneumonia that most people are eager to learn. First, however, we should know just what it is that we are trying to escape.

The pneumonias are fevers caused by infections in which the lungs become inflamed in a way that interferes with the normal exchange of gases between the air and the blood. The infection is attributable to one or more of several varieties of bacteria and viruses. When the lungs are inflamed, the blood vessels in the walls of the air sacs are dilated and the air sacs are filled with fluid, cells and bacteria. Most frequently, the exciting causes of pneumonia are one of the 50 odd varieties of pneumococci, less frequently one of a number of other bacteria and a virus. It should be remembered that closure of the air sacs may be due to causes other than inflammatory disease. For example, the air sacs may be blocked as the result of a stoppage of the normal circulation through their walls. This happens when a blood vessel in the lungs becomes plugged, as occurs in some varieties of heart and blood vessel disease, a condition known to physicians as an infarct. Sometimes, when the heart is weak, the blood does not leave the lungs and stagnates in the lower portions, and if there is fever the condition will seem like pneumonia. The bronchi may be plugged with mucus or with a foreign body, and this illness may also simulate pneumonia. Strictly speaking, the tubercle bacillus causes pneumonia, or inflammation of the lungs which may so closely resemble the pneumonias that it requires great skill to distinguish them. Because the treatment is quite different, this condition should be designated as a variety of pulmonary tuberculosis.

Two conditions are necessary to produce pneumonia—a penetrating seed or germ, and a receptive soil, or patient. The conditions under which pneumonias develop, the way the seed is scattered, the characteristics of the seed which make for virulence and of the soil which favors growth of the seed should all be examined.

Pneumococci are present in the upper respiratory passages of many people without doing harm. Because they grow on suitable

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PNEUMONIA

culture media, it is possible to collect pneumococci for identification by microscopic examination, which may readily be done because each pair of pneumococci is surrounded by a capsule. The capsules swell when brought into contact with a serum prepared by injecting rabbits with this organism. The pneumococci are given numbers, depending on the serums with which they swell. Numbers were assigned by the original workers with this problem or by those who discovered new types.

If people are in close contact, talking, coughing or sneezing, they will spray one another with droplets of moisture which may contain disease-producing pneumococci. The number of bacteria present may vary and differ in their virulence or capacity to produce disease. Some people will receive only a few germs, which will be destroyed by the tissues of the respiratory tracts, while others may receive a large dose with which the body cannot cope. In some cases, of course, the germs are a variety which does not produce disease in man.

There are other methods by which the pneumococci are spread, especially from patients with disease. A patient may distribute the germs to those about him by coughing and thus spreading droplets on the hands or clothing of others or contaminating dust particles in the air. The sputum or discharge from the lungs, a thick, rubbery, rust-colored mucus, is coughed up and this may soil his hands, clothes or utensils. Those who come in close contact with him may then soil their hands and carry the germs to the upper respiratory passages of others, either directly or indirectly. Thus the nurse or the family may become carriers of the disease. The circumstantial evidence is very strong that the organism has been received from one patient and carried to another, because it may be identified by its pneumococcus number. Nurses have carried a pneumococcus from one patient to another in the wards when precautions to prevent cross-infection were not employed. A patient who has had one germ, responsible for his pneumonia, may have a new portion of the lung involved, with a different organism responsible, which may sometimes be traced to another patient or to a carrier. In well managed infectious disease hospitals, the

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patient's care is individualized to prevent this; a change of gown and a careful scrubbing of the hands after the care of each patient is mandatory. In the home, those entering the sickroom should cover their clothes with a gown, a kimono or hoover apron and scrub their hands before and after each visit. Visitors may bear a different variety of pneumococcus and convey them to the patient by spraying (in coughing or speaking) or by hand. If the respiratory tracts of members of the families of patients ill with pneumonia are examined for germs, those in close contact with the patient may harbor the culprit pneumococcus and may continue to carry the germ for a long time after the patient has recovered, and yet they may remain perfectly well. Sometimes members of a family become carriers because one person has carried it into the home, yet no one becomes ill with pneumonia. Most of the family may remain well, and one member may have only a sore throat or cold for a short time. They may carry the pneumococcus for months without harm to themselves. Just why this should be true is a matter which engages the attention of many research workers throughout that part of the world which is still civilized. By increasing resistance and by lessening exposure to disease, pneumonia may be avoided.

Defense Activity

Why do avirulent bacteria become virulent? It may be explained by the fact that the tissues become changed. The mucus membranes become more susceptible and permit the passage of the germs because some virus or submicroscopic, disease-producing substance destroys the protecting surface cells and opens the tissue spaces to invasion. Resistance to virus disease in those who have had one attack is developed by rapidly induced activity of the defense mechanisms. This activity may increase protective substances in the blood or in the cells of the mucus membranes, which rapidly multiply and form a thick defense wall. They do this better for the practice obtained by previous experience. We know, for instance, that in swine the virus of influenza alone does not produce an illness, and that the bacillus of influenza separately does not produce severe illness; the combination, however, may prove to be deadly. Patients who are carrying a virulent pneumococcus may be safe until they acquire a cold or some other virus. Healthy mucus membranes secrete substances which destroy or neutralize some viruses. Viruses and bacteria do not thrive in an acid medium, and when the mucus membranes are congested they become more alkaline and are thus better culture media.

Crowd Diseases

Because the viruses and bacteria are spread from person to person, the diseases they produce are called crowd diseases. The best way to avoid the combination of viruses or bacteria is to avoid unnecessary crowds and to avoid the congestion of the head which follows chilling of the extremities, as when we get our feet cold and wet, by wearing rubbers and changing promptly from wet shoes. Alcoholic excess and exhausting work also reduce resistance, as does a marked change of temperature of the body surface. Chilling and respiratory congestion may be caused by inadequate clothing, especially in exposure to winds. When evidence of infection is present, the highest degree of resistance should be maintained and the least possible strain should be placed on the body; this is best attained by rest in bed and ample food.

Some believe that crowd diseases may be avoided by destroying the virus or bacteria while they are still in the air, when there is no direct person to person contact. Such a method of protection has been successfully utilized in preventing the transfer of respiratory virus diseases among infants; it may be accomplished by making a barrier of ultraviolet light rays. Some newly devised substances (aerosols) are harmless when breathed, and used as a spray may destroy viruses in the atmosphere.

Inoculations

Some workers believe that instead of destroying the invader, it is better to fortify the people exposed by the use of vaccines or inoculations of killed or weak bacteria which increase resistance by training the cells to resist the disease when it is encountered. It has long been known that one attack of some diseases can often confer protection against another attack. This is done successfully for diphtheria, smallpox and others.

It seems difficult to know just how to accomplish this purpose in the case of the pneumococci, because the number of species is so large and the resistance may be only for a specific type. The evidence for *(Continued on page 127)*

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Well-known educators say:

"Girls have often suffered physical and mental harm because they have not learned in advance the nature and hygiene of menstruation. Here is an opportunity for the schools to perform a very real and vital service to society."

Grateful mothers say:

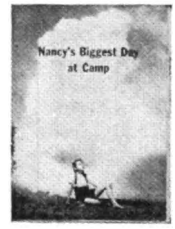
"We are indebted to the teachers who give our daughters wholesome, accurate information on a subject which most of us cannot explain adequately."

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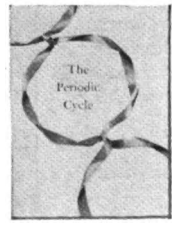
Every term, more and more teachers are awakened to the need for menstrual education in the school system. No matter what you teach—Physical Education, English, Home Economics, Mathematics, or Hygiene—you are almost certain to be faced with questions about menstruation from your girls.

The Modess Program of Menstrual Education will help you answer their questions easily and naturally. It was planned and written with the advice and assistance of both teachers and doctors. Teachers who have used it sum it up this way:

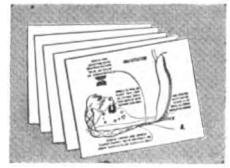
"The Modess Program of Menstrual Education recognizes a definite need—and fills it!"



For younger girls: "Nancy's Biggest Day at Camp" is a new and modern version of the simple facts of menstruation. The story is told in a way that young girls like to read—and it has been praised highly by the many teachers who have used it.



For older girls: "The Periodic Cycle" explains menstruation in a more adult and scientifically detailed manner. Yet it is written very simply and is easy for the high school girl to understand. With it, use the anatomy charts described below.



Six Menstrual Anatomy Charts which provide illustrative material for the text of "The Periodic Cycle." They are considered invaluable by the teachers who have taught menstrual facts to girls of high school age.

Now—these new Teaching Outlines:

Teachers who have used the Modess teaching aids effectively for their own girls, have collaborated in the preparation of these two Teaching Outlines. One is for use in preparing young girls to meet their first menstrual experience. The other is designed for presenting fundamental, scientific facts of menstruation to girls of high school age.

"They look to you for straight facts"



ALL THIS MATERIAL IS FREE—MAIL THIS COUPON

The Personal Products Corp., Dept. B-37, Milltown, New Jersey

For Students: Please send me:
.... copies of new edition of "The Periodic Cycle,"
.... copies of "Nancy's Biggest Day at Camp."

For Teachers: ( ) Please send me also the set of Menstrual Anatomy Charts. (Distribution of the charts is limited to teachers who use "The Periodic Cycle" in their classes.)

Name .....

Address .....

City ..... *State* .....

Order as many copies of the booklets as you need so that each girl may have one to keep.

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I consider syphilis the most urgent public health problem in this country today—*

THOMAS PARRAN, M. D.
Surgeon General of the United States Public Health Service

**Excerpt from the book, THE SHADOW ON THE LAND, by Dr. Parran.*

THE FOLLOWING cardinal principles govern the control—and, let it be hoped, the eventual eradication—of syphilis:

1. Prompt recognition of syphilis is vital. Today, no one need remain in doubt as to whether or not he has syphilis. No one should be fearful of seeking medical advice about syphilis. The disease is contagious and can be contracted innocently.

If there is the slightest suspicion that syphilis has been contracted, action should be taken *immediately*. A thorough medical check-up, including a blood test and often a microscopic examination, will reveal the truth.

Early symptoms usually disappear whether treated or not. So, many a victim is deceived into neglecting medical attention while the disease slowly entrenches itself in one or more of the vital organs. Then, sometimes years after the initial attack has been forgotten, *syphilis strikes!*

2. Syphilis can be cured—but only by skillful treatment. Above all, avoid self-treatment, non-professional treatment, or quack doctors. The guidance of a reputable physician is the first dependable step toward real cure.

Proper treatment, in spite of research that promises to shorten the period, still consists of a systematic series of injections given by a competent doctor, extending over a period of a year or sometimes more.

3. Congenital syphilis can be prevented. A blood test will indicate whether or not an expectant mother has syphilis. If the test is positive, she can take advantage of the almost certain protection medical science offers her baby. Treatment *before birth* is vastly more effective than treatment after the child is born.

In progressive communities throughout the country, examinations, blood tests, and treatments are available. Infected persons who can afford private care may go to their own physicians, or to physicians recommended by the health department or by a general hospital. Persons unable to pay for treatment may find a free clinic by applying to the health department.

If you would like additional information about syphilis—information which will enable you to help your community solve this important public health problem—send for the free Metropolitan booklet, 22-Z, "The Facts About Syphilis."

• • •

SIXTH NATIONAL SOCIAL HYGIENE DAY is being observed on Wednesday, February 4, 1942. The American Social Hygiene Association Headquarters, 1790 Broadway, New York City, will gladly send you literature and full particulars.

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More Hands

(Continued from

Not every woman can be a nurses' aide. The work requires physical stamina and a willingness to sacrifice leisure. The Office of Civilian Defense warns that there is no telling now how serious the present national emergency may become and insists that the applicants realize they are enrolling in a service that may require great devotion to duty.

The nurses' aide may be anywhere from 18 to 50 years old, must have a high school education or its equivalent, must be physically able to stand hard work and "mentally flexible enough" to accept direction and supervision, in the words of the requirements set up by the two sponsoring agencies. She must agree to give at least 150 hours of service each year to maintain her membership in the corps. During the first year the 150 hours must be in a hospital; later the aide may be assigned to clinics and field nursing organizations.

The essence of this program is unselfish service. The volunteer aide may be called for duty in time of war or some other disaster or she may work long hours in the less dramatic routine of the hospital, but her only reward will be the satisfaction of making a patriotic contribution to the great plan for civilian defense.

In case of disaster the nurses' aide might be assigned to an emergency hospital or to a casualty station (the official name for the first aid headquarters to be set up near the site of a catastrophe). She may have to work long hours in discomfort, confusion and inconvenience. But here is where she shows her mettle. The Red Cross says that the value of volunteers in disaster depends, among other things, "on their ability to follow instructions to the letter, to be absolutely dependable, to adjust themselves to discomfort and inconvenience, to maintain standards of work in spite of confusion and lack of facilities."

If you wish to volunteer for the nurses' aide corps, you should go first to the "Civilian Defense Volun-

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for the Nurse!

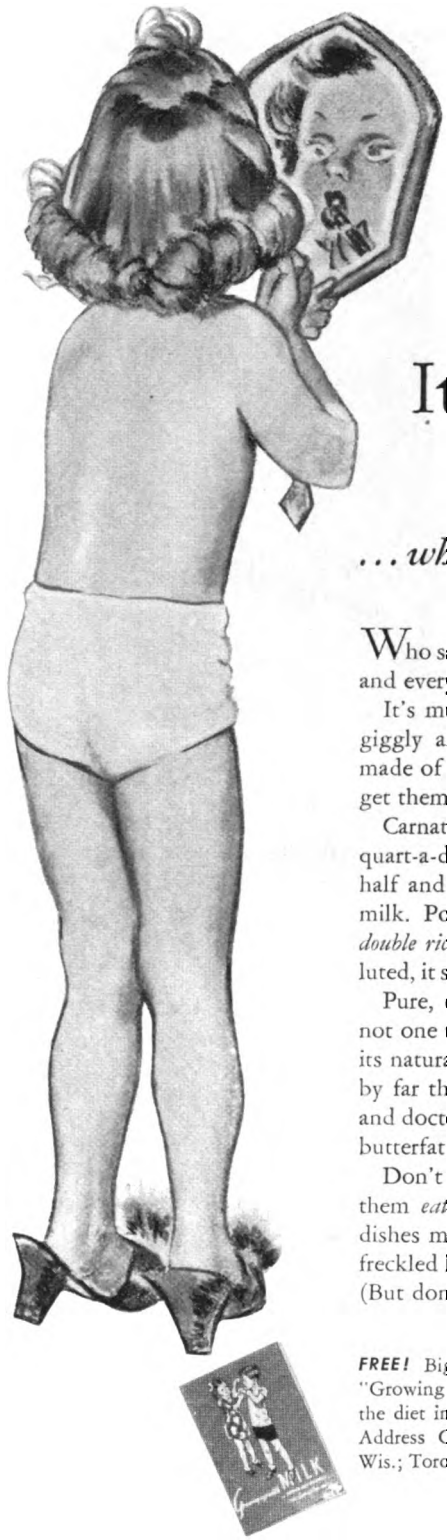
page 94)

teer Office" in your community established by the local defense council to serve as a clearing house for all persons who volunteer for any kind of service in the civilian defense program. Those who meet the requirements for nurses' aides as to age, education and availability are sent to the local Red Cross chapter, where the final selection for the intensive course will be made. If no volunteer office has been established, apply directly to your local Red Cross chapter.

When volunteers have finished their didactic instruction and are ready to enter a hospital for actual practice they may don the attractive blue and white uniform especially designed for them. It is a blue cotton jumper apron worn over a regulation white blouse, plainly tailored and inexpensive. The official OCD nurses' aide insignia, a red cross on a white triangle in a blue circle, is worn on the left sleeve. After the course is finished the full-fledged nurses' aide will wear a cap of blue with a white facing, bearing the insignia on the center front.

The Red Cross, cooperating with the local Chief of Emergency Medical Service, an official appointed to organize all medical activities among civilians while the state of emergency lasts, has the responsibility of seeing that the aide is assigned to duty after her training is finished. This they will do by keeping informed of the needs of local hospitals and health agencies.

The final link in the chain that unites community groups in this urgent project for health defense now and possible disaster service later is the nurses' aide committee of the Red Cross. This group, composed of lay persons, nurses and the local Chief of Emergency Medical Service, has the special duty of seeing that the aide corps has qualified instructors, that the right persons are chosen for the training and that the training is up to the standards that the nursing profession maintains for itself.



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Food for a Longer Life

OVER A PERIOD of years, you can do much to build for old-age health security. Good health habits, like good thrift habits, should start early. Especially is this true of one of the most important of all health habits—that of eating a good diet.

Present day nutrition, it has been said, offers an extra ten years to the life of any one who lives under its guidance. According to Dr. Henry Sherman, one of the country's leading nutritionists, these extra years probably can be added to life at its prime—thus postponing the effects of advancing old age.

Poor diets may make a person old before his time. Inadequate diets year after year naturally take their toll in chronic fatigue, shifting aches and pains, and certain kinds of digestive trouble. They lower natural resistance to infection and destroy a person's sense of well being—his joy in being alive.

In some ways, a good diet for an older person differs from a good diet for a younger person. In the following paragraphs, home economists of the United States Department of Agriculture outline the important points for normal, elderly people to consider in selecting their daily meals.

As far as we know now, there are three main things to keep in mind. First, an older person needs fewer calories than he did when he was younger. Second, though his calories are reduced, his need for minerals and vitamins remains much the same. Third, food for older persons may need to be easier to chew and easier to digest.

Older persons need fewer calories because they use less energy. Many of their body mechanisms are slowed down. They do not work so hard or play so actively. For instance, a man who at 30 was moderately active and needed about 3,000 calories a day to keep him going, might need only 2,400 or less at 60.

The easiest way to tell, of course, whether too much food energy is being taken is to watch the scales. Eating too much causes overweight. And the disadvantages of overweight increase with age. Excessive body fat is a burden on the heart, may help cause some diseases, and lessen a person's chances to recover from certain diseases.

Best way to cut down on calories is to eat fewer foods that supply little else than energy—rich desserts, pastries, many of the fats and rich dressings. At the same time, the amount of minerals and vitamins must not be reduced. Therefore, there must continue to be plenty of protective foods in the diet—milk, fruit and vegetables, some foods rich in vitamin B_1, and some with vitamin D if you do not get out in the sun much.

Above all, food must be easy to eat and easy to digest. Following are some suggestions along this line in the form of a daily checklist.

Two to 3 cups of milk a day. Milk is an excellent source of calcium as well as a number of other food values. It doesn't matter how you take milk. If you've lived to a ripe old age and still don't like to drink it, eat it in custards, soups, and other cooked dishes.

One serving or more a day of leafy, green, or yellow vegetables, for their vitamin A. Vitamin A isn't destroyed in cooking to any large extent. Any of these vegetables will be easier to eat if they are cooked. Maybe you'll even want them chopped fine, or sieved and served in purees, soups and such dishes.

Two or more servings of other vegetables or fruit. Look them over and take your choice. Potatoes probably will be one. They are an inexpensive source of important food values. Try to get as much variety as you can. Most vegetables will be easier to eat if they are cooked until tender, easier to digest if they are served plainly.

Eggs are valuable for iron and high quality protein as well as certain vitamins. Get one a day, or at least 3 or 4 a week. Soft-cooked eggs are easiest to eat, of course.

There's no general rule as to how much meat an older person should eat. Whether you cut down or not depends on how much meat you have been eating. But instead of steaks and roasts, you may find finely chopped meats and poultry and easily flaked fish easier to eat.

One or 2 servings of whole-grain cereal products. Eat white bread in the "enriched" form. Food calories, vitamin B_1, and iron are the three notable contributions of whole-grain or enriched products. Whole-grain products also contain the other members of the vitamin B complex.—*United States Department of Agriculture.*

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THESE TWO SEALS MEAN PROTECTION FOR BABY 57

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The Ghost of Sylvester Graham

By JAMES A. TOBEY

THE RECENT RETURN of vitamins and minerals to our white breads is probably causing acute exultation in the wrathful spirit of the late Sylvester Graham. To be sure, the crusader for whom "graham bread" was named had never encountered a vitamin or a food mineral when he departed this life some 90 years ago. Nor was he adept in the science of his period. But Mr. Graham had positive ideas about diet and health and the hygienic values of so-called natural foods, which he expressed long, loud, and violently during a brief but turbulent career.

Frenzied Faddist

Of the many food faddists who have colored the American scene, Graham was probably the most frenzied. To numerous persons he was, and still is, a prophet of better health, and there is no doubt that some of his ideas on bathing, fresh air, sunlight, exercise, and dress reform made valuable contributions to the popular health movement. Most of his conceptions of a proper diet were, however, based on superficial knowledge and distorted facts, so that much of his teaching on this subject was erroneous and some of it was harmful.

Like so many other self-appointed reformers in the field of human health, Sylvester Graham was not a doctor of medicine, nor a scientist, nor even a well-educated man. He became a clergyman when he was 30, but his schooling had been desultory and consisted mainly of a short session at Amherst Academy in 1823. Although often known as "Doctor" Graham, it is doubtful if he ever acquired a legitimate doctorate of any sort.

Sylvester Graham was born in 1794 in West Suffield, Conn., of good Scotch ancestry, one of his forebears having been Marquis of Montrose. His father was 72 years old when Sylvester, his seventeenth child, was born, and he died soon after. The boy, who was sickly and seemed destined for tuberculosis, was then brought up in casual fashion by various unsympathetic relatives. In 1826 he married a Miss Earl, who had nursed him through a long illness, and shortly thereafter launched on a career as a preacher, the profession of his father.

After several years in the pulpit, Mr. Graham was appointed in 1830 as general agent for the Pennsylvania Temperance Society. In order to deal effectively with the evils of alcohol, he studied physiology and reached the conclusion that intemperance was not confined to drink but included eating, clothing, and the sex life. In 1834 he wrote a treatise on chastity for young men.

An invitation to lecture on these cogent subjects at the Franklin Institute in Philadelphia in 1830 started Graham off on a lecturing jaunt to New York and New England. He espoused vegetarianism, decried the use of all animal foods, insisted that bread be made of coarse, unbolted wheat and eaten when at least a day old, and fulminated against the tightly laced corsets and the lack of bathing which were characteristics of the times.

"Grahamism"

Graham soon had developed an infallible system of health, which was known to his gradually increasing horde of followers as "grahamism." This regime, based largely on vegetarianism, was offered as a sure cure for cholera, then rampant on the Eastern seaboard. When, however, Graham departed hurriedly from New York in 1832 at the outset of a cholera epidemic, and many of his followers contracted the disease, the apostle of health suffered a decline in popularity. Today we know that cholera is a dangerous contagious disease which is spread mainly by polluted water and foodstuffs. It is now rare in this country.

On to Boston

Boston then became the scene of Mr. Graham's operations or machinations. In 1837 he was joined by Dr. William A. Alcott, cousin of A. Bronson Alcott, in the organization of the American Physiological Society, made up mainly of lay persons interested in the theories of these two reformers. Dr. Alcott was actually a physician, having obtained his degree from the Medical Institution of Yale College in 1826 after one year's study, preceded by two years' tutoring with a local practitioner. He had abandoned medicine for teaching and was editing a magazine called the "Juvenile Rambler." Like Graham, he was an ardent vegetarian, but strangely enough he had no use for salads.

The three years from 1837 to 1840 were the zenith of Graham's career. He published a book on bread and bread-making, which so agitated local bakers that riots broke out at his lectures. The book itself is a dull affair, full of faddism and false notions about food. In 1837 Graham also founded a magazine called the "Journal of Health and Longevity," which gave up the ghost in 1840, when Alcott withdrew all support from his erstwhile collaborator.

The Graham movement made such headway, however, that Graham boarding houses were established at about this time. Since they could not attract healthy

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young persons, who disliked the anemic meals served, they were filled with elderly dyspeptics and chronic invalids, who often inconsiderately died. It was proposed that a Graham Hospital or Physiological Infirmary be set up, but this scheme never materialized. About this time Mr. Graham also became interested in the quackery known as phrenology, or the alleged diagnosis of mental faculties by the contours and bumps on the head.

In 1838 the American Physiological Society arranged for an American Health Convention. One of the fallacious resolutions adopted on this occasion was that a dish consisting of farinaceous vegetables and fruits, with the addition of milk for persons of certain ages and conditions, would afford the only cure for cancer and consumption. While proper food, along with rest and fresh air, is valuable in the general treatment of tuberculosis, diet alone seldom has complete therapeutic effect in this serious malady. Diet likewise has no known role in the cause or cure of the malignant tumors known as cancers.

The graham bread advocated by Mr. Graham was made of very coarse wheat flour and must have been extremely unpalatable, especially since he permitted no yeast for leavening. The few bakers whom he induced to cooperate soon gave up this formula and produced graham breads with a basic dough of fine white flour, to which they added cracked wheat for bulk and roughage, and molasses for color. With this mixture was included a copious quantity of saleratus to keep the loaf from going sour and to aid fermentation. No wonder that Ralph Waldo Emerson referred to Graham as "the poet of bran bread and pumpkins."

After 1840 the influence of Mr. Graham began to wane. In the previous year he had published a book entitled, "Lectures on the Science of Human Life," and he had also issued a volume containing nearly 100 pages of testimonials regarding his system. Typical were testimonials such as this: "At this time Mr. Graham commenced a series of lectures in New York. I heard and trembled. The torrent of truth poured upon me and made me a thorough convert."

Although Dr. Alcott had declared that, "physiological reform is pecu-

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2. "Procrastination is the thief of time!"



3. "Shorten your belt and lengthen your life!"



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liarly suited to raise man from a state of sensual degradation," the public soon began to tire of Mr. Graham and his reforms. So Mr. Graham retired to Northampton, Mass., where he died in 1851 at the comparatively early age of 57. He had promised his followers a century of healthful existence on his peculiar system of diet, but proved to be a poor example of its efficacy. It has been stated that the cause of the death of this ardent advocate of roughage in the diet was an intestinal obstruction.

Persons interested in more complete facts about the life of this famous charlatan will find them in interesting articles in the *Mississippi Valley Historical Review* for September 1931 and in the *Bulletin of the Institute of Historical Medicine* (Johns Hopkins University) for October 1937.

Modern white bread is far different from the product which was so consistently abused by Mr. Graham a century ago. Like many other foods, much of the bread of that period was often adulterated. It consisted mainly of flour and water, leavened with home-grown yeasts of uncertain quality, and spiked with alum and other chemicals. Commercial yeast in pure form and uniform quality did not appear until 1868.

Today's white bread is a highly supplemented food which is as nourishing as it is palatable and pleasing in appearance. While wheat flour is, of course, the basis of the modern staff of life, one third of the loaf is comprised of such added ingredients as milk solids, pure yeast, shortening, sugar, salt, malt and malt extract, and sometimes butter, honey, eggs, and raisins. The easily digestible bread of this type is not only an economical source of food energy, but is a good source of body building proteins, and of necessary food minerals such as calcium and phosphorus.

Since March 1941 white breads in this country also have been enriched with vitamins and minerals natural to whole wheat. Such a modern loaf is, therefore, valuable in the diet for its added content of thiamine (vitamin B_1), riboflavin (vitamin B_2), and nicotinic acid (another vitamin of the vitamin B complex), as well as for its increased content of blood-building iron.

So, if Mr. Graham were alive and flourishing today, he would have to find another crusade to satisfy his megalomania. Despite the tradition of his century-old movement, still carried on by some of his zealous disciples, the average consumer has never been keen about whole wheat bread as a steady diet. He eats it occasionally, to his advantage, but 98 per cent of the bread consumed is the popular white variety. It always has been so, and probably always will be, especially since our white breads are now virtually equivalent in nutritive properties to 100 per cent whole wheat. The bakers and millers, by enriching bread and flour, have succeeded in accomplishing what Mr. Graham tried so vociferously but failed so dismally to do.

Pulling Teeth Without Pain

(*Continued from page 113*)

your dentist may decide to treat them to remove as much of the inflammation as possible before actually starting the extractions.

Do not ask for many teeth to be removed at one sitting! The extraction of too many teeth at one time is a shock to the entire nervous system. You have had those old masticators for forty or fifty years, and a day or two cannot make any great difference either way!

After extractions, it is important to follow instructions closely. If you are advised to go home to bed and use ice packs, don't go to a show instead and then return home and retire with an electric pad or some other form of heat on your jaw. Perhaps a neighbor was told to use warm packs, but maybe your condition does not warrant this treatment. You may or may not be advised to use a mouth wash. Your condition calls for a certain procedure, and if you are advised to use a mouth wash, cold packs and

(Continued on page 159)

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About Pneumonia

(Continued from page 118)

benefit from vaccination in the case of pneumonia is not yet convincing, in spite of several large scale experiments in CCC camps and in the army. However, when vaccination against an epidemic due to a specific pneumococcus has been provided, there have been no new cases. In one veterans' hospital, for example, pneumococcus II prevailed for several years, but after vaccination of the patients in the affected pavilion, the epidemic stopped.

How can one know that a pneumonia is present? When the diagnosis of pneumonia is suspected, a physician must establish it. The diagnosis depends on the history and physical signs; as a rule, the patients have had a cold, then a shaking chill, and later pain in the side which is aggravated by breathing. Sometimes there is no pain, but only weakness, general misery and soreness in the chest. Often there is a cough and tightness in the chest with expectoration of colored mucus which rapidly changes to rust-colored or may be streaked with blood. There may be a severe shortness of breath, drowsiness or delirium. Any one of the symptoms may be lacking, or the onset may be neglected until complications occur. In that case, the symptoms of pneumonia may be overshadowed by those of the complications. At the onset, many diseases of other organs, such as gallbladder disease or appendicitis, are simulated by pneumonia. The skill of a well trained physician is required to make the correct diagnosis and to direct treatment.

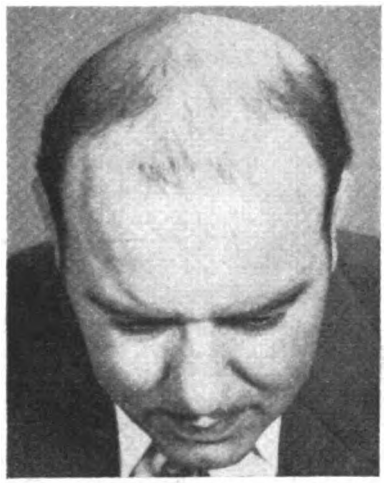
The physician infers that the lung is consolidated from his physical examination of the chest. The normal lung consists of many minute air sacs attached to a bronchus just as grapes are attached to a stem. This bronchial "tree" leads to the fresh air. When the air sacs have becomes filled solidly, they are no longer resonant when the chest is struck. The consolidated area is determined just as a carpenter locates the studs about a room by striking the wall with a hammer. Instead of the stream of air being broken up and distributed into cells which give the sound of normal breathing its characteristic soft quality, pitch and intensity, the harsh sounds made by the movement of air in the bronchi are conducted directly to the listening ear over the consolidated lung. If all the air sacs are not tightly packed, the expansion of the chest will pull their wet walls apart, giving an extra sound which the doctor calls a "râle." When the lung is consolidated in the presence of fever, a tentative diagnosis of inflammation of the lungs or pneumonia is made. The doctor should determine, if possible, the cause of the pneumonia in order to prescribe precise treatment and correctly observe the progress of his patient. He may infer that the patient has only a lobe or a part that is consolidated, or

(Continued on page 136)



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Teaching the Human Touch

(*Continued from page 97*)

residence and private school were inconsistent with the ward accommodation occupied by the patient and the months of unemployment preceding the acute illness. Her more adroit questioning finally divulged the whole truth: The "dietitian" was an ordinary domestic servant earning $10 a week; the "club" was a charitable home providing temporary board and lodging for unemployed women; the "private school" was an institution for illegitimate children!

Where an intern failed to apprehend the presence of a real social problem, trained workers usually found that his own background was largely responsible. Thus men who had worked their way through college and medical school were prone to believe that any one else could help himself if he really wanted to, that most destitute patients had only themselves to blame for their own situations and were therefore unworthy of outside assistance. Interns from comfortable or well to do families did not have a basis on which to measure the importance of want, loneliness or insecurity; as a result, they were inclined to be indifferent to the problem or to become oversympathetic and recommend assistance not actually needed. On the whole, though, social workers found that interns who were capable in other departments soon learned to appreciate the significance of social problems and became proficient at finding and interpreting the facts of the patient's home life.

Principal problems studied by interns and discussed with residents and social workers during medical social ward rounds at Beth Israel Hospital concern the type of home and neighborhood from which the patient comes, the number and age of dependents whose welfare during the disability may be a source of worry, the financial stability of the family group and the effect of the illness on the patient's employment status. All that is known of these and related problems must be integrated with the diagnosis and medical management of the illness; ward round discussions are the source of plans to shape convalescent care to suit the peculiarities of the home environment. Often, of course, the problem is too complex for immediate agreement on the best solution. The intern learns to distinguish those cases which must be referred to the social service department of the hospital for further study and assignment to a case worker.

A notable observation in the Cohen-Derow report appears to refute the popular impression that specialists become absorbed in the indications and technics of their own particular field to the exclusion of any interest in the patient as a social and emotional as well as a medical entity. They had expected, they said, to find surgical interns preoccupied with technical details of operative procedure and postoperative care, yet these men were generally as thoughtful and imaginative in their response to social involvements as were the interns on medical services.

Seeking an evaluation of the program after ten years, the collaborators sent a questionnaire to the 53 intern graduates who had completed the course, asking for a frank expression on their medical social training, its values to them as interns and later as physicians and teachers, and its values to the hospital and its patients. Uniformly favorable, the replies showed that the patient gained immeasurably from the natural emphasis on his total disability and care during convalescence, that the hospital benefited through reduced periods of hospitalization and fewer readmissions—making beds available for those in need of care for acute illness, and that the interns learned a valuable lesson in the handling of patients not available in the classroom or laboratory and were provided with a sound background for evaluation in later years of the human and environmental factors in the causation and aggravation of symptoms.

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Home Defense Against Accidents

(Continued from page 108)

organization doing city-wide work. With practically no financial outlay, it can be accomplished by capable and enthusiastic leaders who can secure the cooperation of community forces. An analysis of home accidents shows that they are often easily prevented by a little intelligent care.

Children set fire to their clothing by playing with matches, by turning up gas burners, by pulling over lamps. They are often allowed to run and play in front of an unscreened fireplace. They reach up and pull the handles of cooking pots on the stove, often scalding themselves fatally. They fall downstairs and out of windows, into tubs of hot water and scrubbing pails. They fall out of bed and get smothered under bed covers. They turn on hot water faucets. They play with harmful toys and with mother's knives, needles and scissors, if these tools are left around carelessly.

While Miss Losh has emphasized accident prevention for children, she and her helpers have reported on adult cases as well. Falls have been found to account for more deaths and injuries than any other type of home accident. Yet they could be largely eliminated if people would form better habits and stop taking foolish chances. The country over, falls cause about 16,000 deaths every year; they are usually the result of neglected trifles. Stumbling over furniture in a dark bedroom and over toys on the living-room floor is one of the chief causes of fatal falls.

An orderly house may not be proof against accidents, but it offers far fewer hazards than the disordely one and tends to develop careful and systematic habits in its occupants. "Keep things picked up," urge the safety workers. "Teach your children to put away playthings when they have finished with them."

Other precautions have to do with such details as loose floor boards, small rugs that skid on

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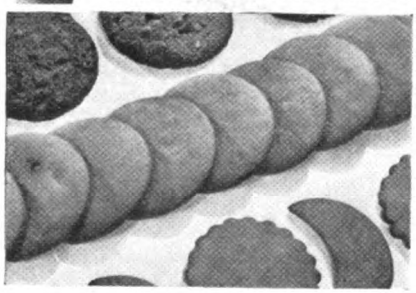
DEFENSE BONDS STAMPS

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slippery floors, sticks and stones scattered over the lawn, stair carpets that are not fastened securely, mops and marbles on the kitchen stairs.

During the last year, Kansas City canvassers have visited 20,000 homes and conducted 67 classes. On an average, fifty workers serve the bureau every month, with an additional thousand or more for the annual safety campaign. Since 1938, when workers visited 40,000 homes, the city has made great gains. But they are keeping on the job, checking the growing population and pushing a regular safety program every day of the year.

In a graphic but impersonal way, the safety exhibit emphasizes common accident sources and suggests the proper preventive measures—such devices, for example, as safety window screens that lock, safety screen hooks and fire screens, a box of sand for slippery walks and steps, house furnishings without sharp corners, and safety-tested play equipment. Other suggested devices are sheaths for scissors, covers for scrub buckets and tubs of water, screens for wringers, railings for porches and gates for stairs. Baby pens of padded dry-goods boxes may be made at the cost of only a little time. Rubber mats and handrails for bathtubs will guard against a common and often fatal type of fall. Kansas City workers have stressed many inexpensive ways of accident prevention, such as a rope fastened to the cellar stairway instead of a more expensive handrail, mason-jar rubbers used to anchor a slipping scatter rug, and a small wall rack to hold sharp kitchen knives that are too often tossed into a crowded drawer.

Many preventive measures are just a matter of taking care and require no special equipment. Lamp cords, for example, should be placed against walls, not out in the room where they may trip somebody's toes. This is obvious to any one who gives this arrangement a second thought, yet people die every year from falls over lamp cords! Chairs placed against the open side of a bed will keep small children from rolling off, and crib covers pinned securely at the sides with large safety pins will prevent a baby's smothering under his comforter. Lighting fixtures in the nursery should be placed out of the reach of a child. Poisonous drugs should be labeled clearly and locked up, and matches kept in tin boxes where children cannot get at them. These and other simple precautions are continually neglected.

Architects are now designing houses with accident prevention definitely in mind. Rooms are being planned so that furniture may be placed out of the way; protected electrical connections are commonly specified, and scores of safety considerations which modern emphasis on the subject has brought about are well known to the up-to-date architect.

The self-check list provided by Miss Losh to see that homes are as nearly accident-proof as possible covers the many points in defective furnishing and poor household management which workers have found to be most frequent causes of accidents. Through the cooperation of parents, hundreds of children have been saved from fatal mishaps and disabling injuries.

What has been done in Kansas City can be done in any alert and determined community. Miss Losh is eager to help others carry on; she has spoken about home safety in more than forty large American cities, before national and regional safety conventions. She points out that volunteers who enter the service must have a thorough understanding of the objectives, methods and procedures. They must be made to realize that they are indispensable to the cause. The special type of service for which a volunteer worker is best suited should be determined carefully, and each one should be assigned to as appropriate a task as possible. Outstanding services should be given recognition, and frequent meetings of volunteers held for general discussion of methods and results.

Says Miss Losh: "The workers must become effective safety propagandists in the community. They must convince parents that no city enterprise of this nature can succeed without their constant cooperation, that it is their duty to improve the safety of all children. Not until parents do this will the community be safe for their own children. Parenthood places the obligation squarely on them. The city's home accident death rate for children will indicate whether or not they are meeting that responsibility."

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HEALTH for Victory

In the all-out effort which victory demands, health — for the nation as a whole as well as for the individual— is of paramount importance. The better the nation's state of health, the higher its morale, the greater its efficiency, its stamina, its resistance.

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For the sake of the victory to be won, balance your meals more diligently than ever.

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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535 North Dearborn Street, Chicago

The Man for the Job

(*Continued from page 112*)

The applicant for a position in an electric substation, where he will handle a 10,000 volt apparatus, must first pass the preliminary tests, which are modifications of certain standard intelligence tests. Then he is taken into a tiny anteroom, seated in front of an instrument panel, and given certain simple directions. He is told that he is to watch the needle on a dial and manipulate a key to keep the needle as steady as possible. He is warned that some disturbance may occur on the board and in that case a bell will ring.

"If the bell rings," the instructor states, "you must adjust these switches quickly. Swing switch A down. Swing switch B down. Then put switch A back to the upper position. Throw switch C down, and push button D. Do all this as quickly as possible."

The applicant runs through the series a half-dozen times, goes to work manipulating the dial, and thinks everything is simple. For several minutes, everything is fine. The candidate relaxes. Suddenly, with no warning, things start to happen. A fire-alarm bell rings, things explode, lights dim, the needle goes crazy, and 10,000 volts crackle with a blue flame right under the candidate's nose.

This is when groups A and B, as the company calls them, divide. Group A consists of men who are fit to handle a job in electric power stations—men who have power plant nerves, and group B includes men who are likely to drop monkey-wrenches on their toes, get their coattails into the machinery, throw the wrong switch and damage an item that may be a $5,000 transformer.

Strange things have happened during this 10,000 volt test. Sometimes men have run out of the room so fast that they never stopped to say goodbye. Sometimes they kicked over the chair in which they were sitting in their haste to get out. The chair is now bolted to the floor. These men were frightened because apparently they thought they might be burned. As a matter of fact, the apparatus is so equipped that no harm can come to the candidate; what happens is that there are electric gauges which measure, to the $\frac{1}{100}$th part of a second, how long it takes a man to get his nerves in hand and throw each switch. The speed with which he does this tells the story about his nerves.

This kind of fireworks test, in the mind of Dr. Viteles, is one which he feels should be immediately applied by employers everywhere to "tool up" their staffs for the demands of national defense. He feels that if the country is to reach maximum productivity rapidly, it is of utmost importance that every employer put the right man in the right job. And the old methods of finding the man require too long a time; scientifically arranged tests weed out the good from the bad with a combination of speed and accuracy.

"Before the tests were installed," explained Dr. Viteles, "what we call 'failures' attributed to human error in the substations averaged 36 a year—not bad, of course, considering that there are more than 1,000,000 switching operations a year. But since the tests were installed, the failures have dropped to five a year. The reason, I feel, is that formerly some men had the jobs who were not fitted by temperament to this exacting work, while now cooler heads have them.

"We found right at the outset that most of the mistakes were made by 'repeaters.' We divided the 140 substation operators into three groups, rated by the foremen as best, average and poorest. We found that each of the twenty-five men in the poorest class made about seven times as many errors in actual operation as the men in the best class. The 'averages' made three times as many as the best. Obviously, those in the poorest group were not fitted for the work. In the tests designed to measure the required qualifications, the three groups failed in almost exactly the ratio shown in actual operation,"

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At the Electric Company, Dr. Viteles has set up about twenty "batteries" of tests, each for a different type of work. Some are arranged for machinist apprentices, some for clerks, typists and stenographers, others for salesmen, truck drivers and other jobs. The tests vary widely. An orderman's apprentice, who needs a knack for mechanics, faces a tray containing the parts of such things as a mousetrap, a lock, a pushbutton and a bottlestopper. It is up to him to put them together as rapidly as possible and make them work.

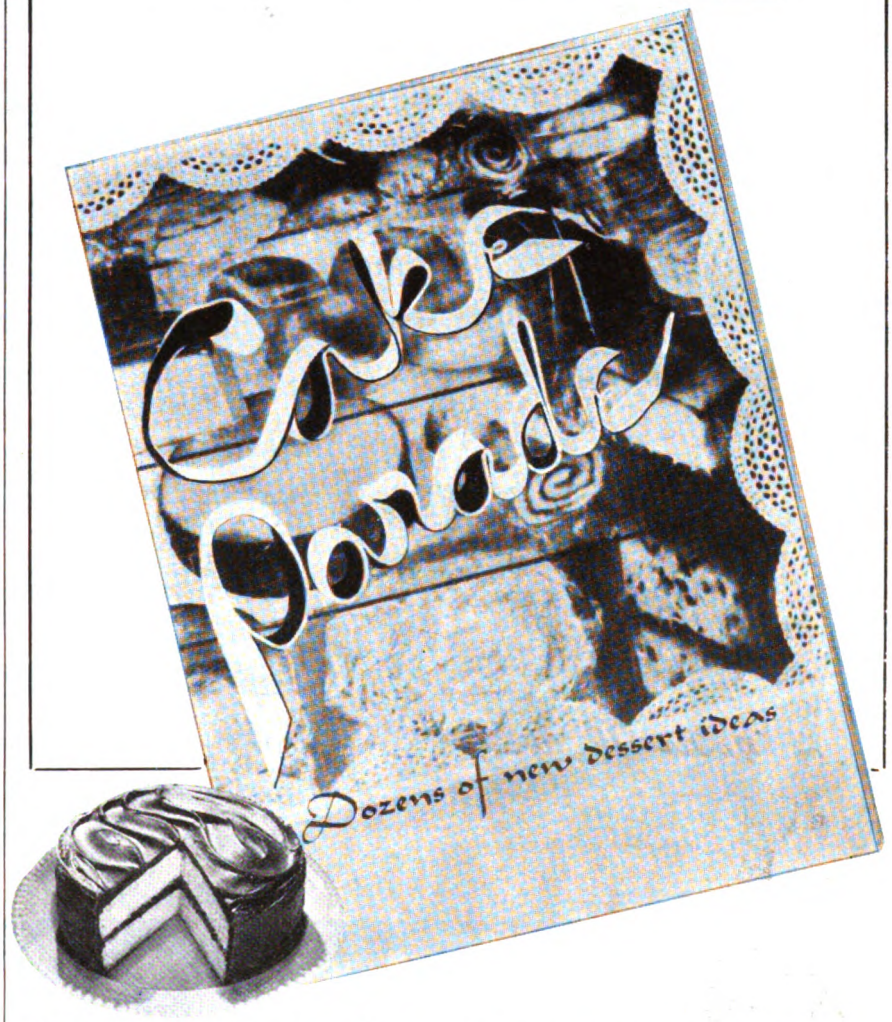
A stenographer is given this question: Here is the adage: "Don't cry over spilled milk." She must say in which one of the following sentences the meaning is expressed: "Don't do the impossible." "Weeping is bad for the eyes." "Don't worry over troubles before they come." "Early birds like worms best." "Prompt persons often secure advantages over tardy ones." "It is foolish to fret about things we cannot help." This tests her mental ability.

For meter testers, men who need a practiced eye for catching a revolving wheel on the fly, there is an electrical gadget which tests their split-second judgment at stopping a revolving needle at a certain scratch on a wheel. An array of tin boxes, filled with complicated directions, tests a man's ability to carry out orders swiftly and accurately. Another box bound up with ropes, staples and loops tests mechanical ingenuity.

The scientific method in job filling must be applied with discretion or else it loses its value. Thus if an employe at the Philadelphia Electric Company flunks the test for a job he has had, he is shifted to another for which he is better suited. Applicants, too, are allowed to take a test for different jobs if they fail at one.

"Tests like these," says Dr. Viteles, "should be positive, not negative. It is important for a man's own sake that he be kept out of a job for which he is not fitted. It is more important to him and to society that he be placed in a job where he can be efficient and happy. If these objectives can be achieved on a large scale, we will see an immense benefit in social stability."

Facts About Cake You Should Know Now



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One ounce of cake generally supplies about 100 calories, or units of food-energy. Sometimes it is a little more, sometimes a little less, depending upon the type and composition of the cake.

But cake is more than a good source of food-energy, the most immediate need of the body. It contains some protein, too, as well as minerals, and vitamins according to ingredients used.

To further acquaint you with the many benefits and uses of good cake, we have prepared the booklet shown above and will be glad to mail it to you upon request at no charge.

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QUESTIONS AND *Answers*

Chronic Alcoholic Delirium

To the Editor:—What is "Korsakoff's psychosis"? Is it inherited? Should a person whose father has this form of insanity marry and have children? Is it curable or preventable?

J. J., Georgia.

Answer.—Korsakoff's psychosis is a mental condition characterized by a severe memory defect with resulting disorientation in time and place and the tendency to confabulate. Because the ability to retain impressions is the most impaired function, the memory loss for recent events is at first great. However, later the memory for remote events is usually also involved. In addition, the psychosis is nearly always accompanied by a polyneuritis.

The disease is caused by chronic alcoholism. It is not inherited, and there is no reason why a person whose father has this form of insanity should not marry and have children. In a certain percentage of cases, early treatment may be effective. However, the recovery is rarely complete. Prevention consists in abstaining from alcohol.

Tuberculosis

To the Editor:- Certain patients with tuberculosis cough little, though they have positive sputum. Is this absence of cough due to the fact that the disease is early, or because it is a different type of tuberculosis? I have one open cavity and numerous soft lesions on both sides, but am not receiving pneumothorax or other treatment. It is hard to believe one is really sick without the medical book symptoms. I do not want to go back to the sanatorium (I only stayed two months) but thought of getting a housekeeper at home. However, I find there is fear of this disease. How can we show the public how infection is spread to others? I do not think this is at all clear in the public mind, and it makes a patient who is careful and considerate feel like a leper.

A. P., Connecticut.

Answer.-In 1689, Richard Morton, an English physician, described seventeen different kinds of pulmonary tuberculosis. Today we have eliminated many of these. It is absolutely correct to say that no two cases develop alike, but it must be remembered that the course which tuberculosis takes when entering the human body depends largely on the condition of that body. Since no two person's bodies are exactly alike, no two cases of tuberculosis are exactly alike.

The description fits the so-called chronic fibroid type of tuberculosis. This means that while the disease is progressing slowly in one part of the lung, healing, by development of fibrous tissue, is going on in another part of the lung. Because of the slow progress of the disease, symptoms as a rule are mild and may appear to be absent. A case like the one described is certainly not an early one, because the presence of a cavity at once marks it as moderately or far advanced. Those dealing with the control of tuberculosis consider these mild fibroid cases the most dangerous to other people, because the patient does not know or refuses to recognize the fact that he is ill and is suffering from a contagious disease.

The complaint that fear of the disease by relatives and friends makes a patient feel like a leper is not uncommon. While our sympathy goes out to these patients, we believe some regard and even fear for the contagiousness of tuberculosis is certainly justified. More than 60,000 people died from tuberculosis in this country last year, and almost ten times that number suffered, probably for years, from this disease. Tuberculosis is more readily contagious than leprosy. The time will come when patients with positive sputum who disregard the health of others by carelessness will be segregated by law.

Patients with an open cavity and positive sputum should be on absolute bed rest and receive some type of collapse therapy. This is continued until sputum and gastric contents no longer show tubercle bacilli. Those who disregard these principles may pay dearly for not playing the game according to the best known rules.

Exercise During Menstruation

To the Editor:—I would like to know if girls may take gymnasium during the menstrual period. Exercise, as I understand, doesn't harm a person during this time. I feel that a girl who is too ill to take gym should stay home.

Many students say they have a cold and can't take gym. I say that if a student has a cold, she shouldn't be in school.

M. P., Illinois.

Answer.-No hard and fast rule may be set forth which might apply to every case. Persons differ one from another in degree of function, powers of resistance, temperament, and in other ways. In general, however, regarding exercise during menstrual perods, it may be said that the trend has been steadily away from the conservatism among physicians and physical educators so prevalent in the early part of the present century; the custom was routinely to excuse all menstruating girls from required gymnasium work. As women began to participate in exercise more freely and physical education became a part of the scholastic curriculum, experience showed that exercise during menstruation had a good general effect on the normal girl, often alleviating simple dysmenorrhea. It was found, however, in many quarters that special care had to be taken with young girls in whom the menstrual function was just beginning for the first time. When the periods had become established,

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a considerable amount of exercise could be undertaken without harmful effects. Although we have no statistical evidence, it is probably safe to say that few women athletes of the present day allow menstruation to interfere with participation in sports and games, including competition. There is no evidence that such a regimen is detrimental to the reproductive functions of the normal female. The problem is of comparatively little importance, because very few women exercise strenuously. Nature can probably be depended on to provide sufficient automatic disinclination to exercise to protect the human machine.

In many institutions, participation in physical activities is required, but excuses are granted to young women who are evidently sick and who find that exercise increases the discomfort experienced during the menstrual period. The girls who are in good health, however, should not consider themselves ill but may engage in judicious and moderate exercise during the whole duration of the menstrual period. If any abnormalities exist, a competent physician should be consulted for advice and the proper treatment of these special cases.

All students suffering from communicable diseases should be excluded from school attendance "during the duration," and a cold is a communicable disease.

Pregnancy During the Menopause

To the Editor:—Is a woman during the menopause more likely to conceive than at other periods of her life?

D. K., California.

Answer.—The term menopause as used here implies cessation of menstruation due to age, and, since menstruation is dependent on ovarian function just as ovulation is, senility of the ovaries may be deduced from lack of menstruation. At times, such as during lactation following childbirth, ova are produced independently of menstruation, and pregnancy can then occur. It is reasonable to assume that complete cessation of all ovarian functions does not occur simultaneously, and occasionally ova may be produced and become fertilized during the earlier months of menopausal change. This is more apt to occur,

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leading to the impression of greater fertility at this time, because of a natural tendency to relax contraceptive vigilance. Pregnancy during the menopause is not a common occurrence, but it attracts so much attention that the impression from the actual number of cases is exaggerated, much as are our impressions of many other phenomena unless accurate statistics are kept.

Tonsils

To the Editor:—Two months ago my sister had her tonsils removed and since that time has not been able to taste. She has a small mouth and thick heavy neck which made the operation difficult. Once in a while she can taste salt, and then for days she has no taste. For two years before operation, she had an almost continuous streptococcic throat. Her doctor believes the lingual nerves were badly stretched but feels sure her taste will return in time. Have you ever heard of this condition before?

O. B., Pennsylvania.

Answer.—There is no record of any permanent loss of sense of taste following tonsil operation. The loss of sense of taste may occur as a result of prolonged infection such as a continuous streptococcic throat. However, in the course of a tonsil operation in a small mouth, pulling on the tongue may have added to the already affected taste nerves of the tongue, producing the loss of sense of taste. The sense of taste should return within nine to twelve months from the time of its loss.

Limbs "Falling Asleep"

To the Editor:—What really happens when your limbs, so to speak, "fall asleep"? What causes it? Sometimes I wake up two and three times in one night and find my leg or both legs or an arm numb. Is there anything one should do for this?

E. E., Wisconsin.

Answer.—Under all ordinary conditions when a limb "falls asleep" it indicates that pressure has been applied to the nerve trunk which goes to the limb. The weight of an arm or leg against some support such as the arm of a chair or some part of the body, or a cramped position of the limbs, may exert enough pressure to block a nerve. Pressure on the nerve results in two things. The nerve fibers gradually become unable to conduct impulses and the blood supply to the nerve at that point is cut off. The result is first a loss of sensation and later some inability to move the limb. The discomfort of this arouses the person's attention and he releases the pressure by moving. On the return of function, the numbness begins to disappear, but with this there is a marked tingling feeling, often referred to as "pins and needles." Such experiences are common to all of us and are of no great significance.

Many forms of blood vessel disease, however, give symptoms which are similar to the ones just described. These are due for the most part to disease processes in the walls of the blood vessels or in the nerves. Numbness that occurs several times during the night might be due to repeated cramped positions of the body in sleep, but unless this has been proved, there should be an examination by a competent physician.

Sunglasses

To the Editor:—I have a pair of sunglasses which are ground to correct my nearsighted condition. Would it be harmful to my eyes if I wore them most of the day?

A. L., Pennsylvania.

Answer.—Probably no harm would result to the eyes from wearing sunglasses with the prescription ground in, even if worn all the time. It is not advisable, however, because they do not look nearly so well as plain glasses, and second, if one shades the normal eye constantly from ordinary light, the eye becomes more sensitive to light than ever. In general, it is a better practice to wear dark glasses only where there is excessive exposure to light.

Wisdom Teeth

To the Editor:—What is wrong or lacking in the person who never grew any wisdom teeth? Is he more stupid or deficient than the average?

A. P., Illinois.

Answer.—Sometimes teeth, including wisdom teeth or third molars, fail to develop. Possibly

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this is due to an injury of some sort, mechanical or otherwise, which prevented the development of the teeth. The cause or causes of this condition have not been fully determined. More frequently what is spoken of as an absent wisdom tooth is really an impacted tooth. This is a tooth which has developed but which has failed to erupt because of its improper position in the jaw, lack of space or other impediment. Among the many conditions which may bring about impaction, displacement or retarded eruption of teeth are acute infectious fevers of childhood, disorders of nutrition, inflammation of jaw bones, too early extraction of deciduous (baby) teeth, crowding of teeth and possibly hereditary factors.

In order to determine whether a wisdom tooth is absent, impacted or delayed in eruption, an examination by the dentist is required. The x-ray is necessary in this examination.

There is no known relationship between intelligence and the presence or absence of wisdom teeth. Apparently the notion that such a relationship exists is based on the fact that the wisdom teeth generally come into place in the jaw at an age when mental powers are fairly well developed.

The Appendix

To the Editor:—Did the people of ancient times use their appendix as a storage place for food?

D. M., Minnesota.

Answer.—The human vermiform appendix is the vestigal remains of the mammalian caecum. No human beings, past or present, ever used the appendix for food storage. Its length in man ranges from 2-23 cm., with an average of 8.9 cm. Its absolute length is greatest from ten to twenty years; from then on it shows slight but progressive reduction in size.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.



"To Thine Own Self Be True . . ."

It is an axiom that women desire to look lovely and to smell sweet. That is why there is a natural demand for cosmetics and perfumes. There is no standard for loveliness. No two women are identically lovely, not even identical twins. The difference is in their individuality. The woman who trys to look like somebody else sacrifices her individuality and usually conceals rather than reveals her true charm. "To thine own self be true . . ." is excellent advice in more ways than one, for true charm is in looking, acting, and being *yourself*. The desire to make that self as attractive, as captivating, as possible is not a vanity; it is as natural as the unfolding of a rose. Cosmetics, gowns, hair styles, hats, perfumes — all of these complements to loveliness should be carefully selected to emphasize, to dramatize, if you like, your individuality, with view to creating the loveliest impression of your charm. . . . Luzier's Fine Cosmetics & Perfumes are purveyed by cosmetic consultants who assist you with the selection of suitable beauty aids and show you how to apply them to create the loveliest impression of your charm. A card addressed to us will put you in touch with the distributor of our products in your community.

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Doctors from Abroad

(*Continued from page 103*)

through the cooperation of such organizations as the National Refugee Service and the American Friends' Service Committee, for speeding the adjustment to American social conditions—principally training in English. State committees were established to examine the qualifications of individual registrants, and to work with state licensing boards and local medical societies to facilitate the examination of properly prepared applicants and obtain internships, institutional work or rural opportunities for new licensees.

In New York, which today has the highest ratio of physicians to population of any state—1: 473, special requirements were set up to relieve pressure on the state board of examiners; committee assistance is limited to candidates with proficiency in English and a favorable professional evaluation by an advisory committee of physicians. Estimating that 1,500 émigré doctors are already practicing in New York, the Committee is seeking through these efforts to direct new candidates to other localities.

A statistical analysis covering approximately half the physicians registered with the Committee indicates that 15 per cent are women. Ten per cent are over 55 years of age, and about 25 per cent are under 35. Thus a majority are in middle life, looking forward to years of professional usefulness. Nearly half are listed as interested in the general practice of medicine rather than in any particular specialty. Since the greatest need in this country is for men capable of assuming the responsibilities of general practice in small towns, the Committee has encouraged the retraining of specialists for general practice through internship and residency appointments in American hospitals. Seven hundred internship appointments have been arranged by the Committee so far; many other physicians, of course, have found appointments without the Committee's sponsorship.

Resettlement opportunities are sifted carefully in an effort to find the right kind of community and practice for each registrant. Licensees are interviewed exhaustively, and no recommendation is made without the approval of local authorities and medical groups. Of more than 500 physicians for whom such placement recommendations have been made, only 5 have had to be relocated.

In some states the achievement of Committee objectives is handicapped by laws requiring that applicants for licensure be citizens of the United States. Under the circumstances, it is felt that the declaration of intention to become a citizen should suffice to protect the public against possible harm from those whose allegiance remains alien. Drs. Edsall and Putnam quote in their report from a recent statement made by Governor Dwight Green of Illinois when he vetoed a bill which would have required full citizenship for licensure in medicine and other professions: "If there are those who are unqualified to practice medicine, this is determined as it would be in the case of any citizen applicant. When those who apply are found qualified, however, we are given the advantage of their skill and this advantage is gained at a time when national preparedness through the induction of great numbers of men in our professions has depleted the number of those available for home service."

Stressing the reasonableness of qualifying candidates by thorough examination of character and professional ability instead of by arbitrary rules, the Committee report concludes: "Sickness knows no citizenship, and our profession must always stand for a liberal and reasonable policy. There are at least 1,500 physicians who are available to meet increased needs. In view of the success achieved with rural placements, more rural states should be urged to take a limited number each year."

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Troubled with Dandruff?

(Continued from page 101)

scalp are dried thoroughly. As washing may remove some natural oil, people with dry scalps are advised to apply pure olive oil after a shampoo. Use a very small amount on a wad of cotton; part the hair with a comb at intervals, rubbing the oil on the scalp, not on the hair.

Will massaging and brushing help? Massage—which means manipulating, not rubbing—stimulates the scalp; but does not remove dandruff. A stiff-bristle brush, applied directly and with too much vigor to the scalp, can be definitely harmful. "It's irritating," says one prominent dermatologist, "and frequently aggravates the dandruff condition. Brushing gives a woman's hair lustre; but she should brush her *hair*, not her scalp."

Such simple, doctor-approved shampoo-and-oil hygiene, in most cases, will prove so effective that the dandruff may seem to disappear entirely. Actually, it is only under control. Neglect the scalp again and the dandruff will return. Like all personal hygiene, dandruff-control is a lifetime job.

Avoid the barber's or the hairdresser's advice, and keep away from advertising "scalp specialists." Never use any scalp medication that a doctor prescribed for some one else. It may be definitely harmful for *your* type of scalp.

The dermatologist explodes another persistent dandruff myth. Simple dandruff does not cause baldness! Nor is it necessarily a forerunner of seborrhea. "Keep your scalp clean," says one eminent doctor, "curb the dandruff, and you'll probably never have seborrhea." Finally, don't worry. The statistical odds are 500 to one that you'd never have seborrhea anyway, and 50 to one that you'll never have a scalp condition of any kind that calls for a doctor's attention.

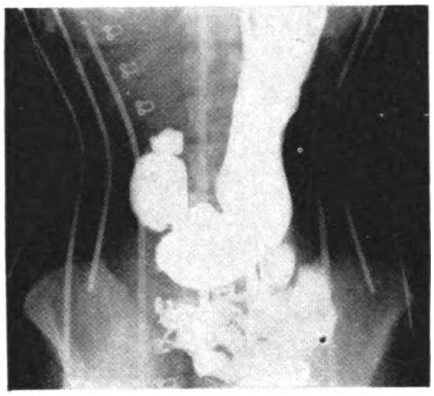
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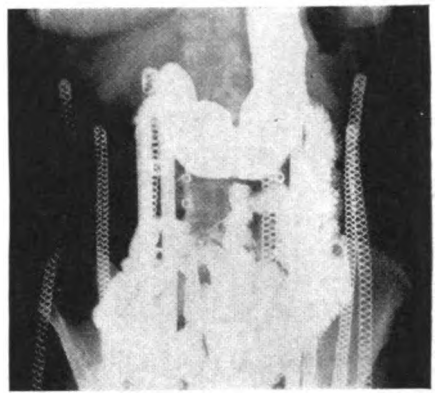
"Blackout eyestrain," a common ailment in England two years ago, is diminishing, according to *New Health*, British health publication. Better lighting in homes, offices and factories and more widespread use of glasses are responsible, it is reported.

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Baby Needs New Shoes!

By JOHN J. McKEE

IN A REPORT compiled from the draft records of the Surgeon General's office under the title "Defects Found in Drafted Men" (1919), foot defects are said to have been "the most important of all defects found in the population of military age." In concluding this article, the author stated: "On the whole, an impartial analysis of the selective draft records points to the conclusion that American manhood is not constitutionally unsound or physically inferior to the ancestral stock. Bunions and hammer toes are not signs of racial degeneracy but the effects of ill-fitting shoes."

When authorities agree, as they do, that ill-fitting shoes cause foot trouble it would seem that the prevention of that defect should be very simple and inexpensive. It would be if children would complain when their shoes are too short, but they don't complain, because their feet don't hurt.

Only one of the 4,000 children whose feet were measured in the Lorain, Ohio, elementary schools would say that her feet hurt, yet the shoes of 73.6 per cent of those 4,000 children were from one-half to three and one-half sizes shorter than the size for which their feet measured. Children whose toes were digging holes in the ends of their shoes insisted that the shoes "felt good." The one child who complained that her feet hurt was wearing size 4½D shoes, but her feet measured for size 6½ B or C. After this child was properly fitted, her teacher reported that she was a different person. She joined in the playground games at recess instead of remaining in the room, and her attitude toward her schoolwork showed definite improvement.

But her troubles are not over. She has four bunions, one on each big toe and one on each little toe, which will trouble her for life. They will ruin the shape of every pair of pretty shoes she wears, and they will hurt like four toothaches if she ever takes a job which requires standing for long periods of time.

Her case is exceptional only in that she has "tailor's bunions" on her little toes. Great-toe bunions are common in the early grades. A school nurse found that 50 per cent of the children in one of the fifth grade rooms had indications of bunions, but not one possessor of these deformities could report any discomfort.

Lacking assistance from the children themselves, the task of keeping their feet in correctly fitted shoes falls upon the parents and the shoe salesmen—an unhappy partnership. Parents who frankly admit they do not know how to fit shoes are afraid to trust shoe salesmen because some of them are unskilled, careless or downright dishonest. Honest salesmen who know how to fit children's shoes and who have the correct sizes in stock complain that many parents will not allow the salesmen to fit children with the proper size because the shoes look too big.

The schools, without taking the responsibility of shoe-fitting on themselves, can educate parents to buy and salesmen to sell well-fitted shoes simply by measuring the children's feet at regular intervals and informing the parents of the measured size and of the size of the shoes being worn.

Height and weight measurements of children are sent home from most schools at least once a semester, in spite of the fact that diet has little effect on a child whose heredity dictates shortness or thinness. School doctors are satisfied if the information results in saving only a few youngsters from the effects of malnutrition. If the schools would include the foot measurement and the shoe size, they would discover unexpected forces helping to eliminate foot distortion in their communities.

The original purpose of the shoe clinics in the Lorain, Ohio, schools was to educate parents to the importance of properly fitted children's shoes. Public acceptance of

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the project warrants the belief that this purpose is being achieved, but a more lasting and effective result is the education of the children. They learn that their feet are changing, and that they should be measured for every new pair of shoes. Furthermore, children have no inhibitions about objecting to the salesman's looking at the size of their old shoes and selecting a pair without measuring their feet.

The clinics have also had a wholesome effect on the attitude of the shoe salesmen. They must be more careful. Formerly, they could substitute a shorter, wider shoe and get away with it because the sizes are concealed in code, but now if a child measures for 12A and the parents know it, he will not sell them size 11½ B or 11 C, because he knows that the parents will find him out. He would rather lose a sale this time than a customer forever, so he admits that the proper size is not available.

One might expect the shoe merchants to resent the interference of the schools, but they are heartily in favor of it, for several reasons. Probably the chief one is that parents replace short shoes when the warnings come home from school, instead of allowing the children to wear out the old shoes. Lorain merchants attribute sizeable increases in their children's shoe business to this replacement of outgrown and misfitted shoes. Another reason they encourage the school shoe clinics is that it becomes possible for them to sell growing boys and girls the correct size if the schools have prepared them for the shock of needing a large size.

This idea that pleases merchants, parents, children and school health authorities began spontaneously and grew by its own merits. In the spring of 1939, one of the Lorain teachers remarked that if he could not find wider shoes he would be forced to look for some other kind of work, where he would not be on his feet all day. The shoes he was wearing were size 7½ EEEE. A measuring device showed that his feet were size 9½ C. When he began wearing the correct size he found so much relief that he told his classes about it, and some of his pupils asked to have their feet measured. They considered the idea a huge joke until they saw the difference between their shoe sizes and their foot sizes. Of 134 boys, 92 per cent were wearing short shoes. Bunions and hammer toes were the rule rather than the exception. Of 68 girls, less than 20 per cent were fitted too short, and of the 20 per cent many said that they usually wore longer shoes, but that the current styles were available only in the wider widths, so the shoes had to be fitted short to prevent slipping at the heel. The girls, like their mothers, have learned to buy correctly fitted shoes because they shop from store to store. Boys prefer to be like their dads and boast that they always buy the first pair the clerk brings out.

The school health supervisor, Dr. W. S. Baldwin, commended the survey highly but pointed out that the place for preventive work is in the early grades. He made foot measurement a part of the city-wide pre-school clinics in which more than 400 children were measured under ideal survey conditions.

Whenever it is stated that 70 per cent of the children are wearing short shoes, the reader automatically attributes the fact to the normal growth of the children's feet. The results of the pre-school clinics contradict that notion, because although most of the children were wearing new spring shoes, 68 per cent needed longer sizes.

In the autumn of 1939, letters were sent to parents of the children who had been measured in the pre-school clinics asking if they would like to have the service continued in the schools. Ninety-three per cent of these parents, who had seen their children measured only five months before, signed requests for the service, and many of them went to the trouble of writing letters of appreciation. The response was such that Mr. P. C. Bunn, Superintendent of Lorain Schools, made arrangements to measure all the children in the first six grades, where the above mentioned 73.6 per cent were found to be wearing ill-fitting shoes.

This year, with the nation engaged in war and defense, the scope of the clinics is extended to include the boys in the upper grades. Whether the feet of our children are being prepared for marching or for dancing is not known, but the results in Lorain indicate that the prevention of foot trouble caused by ill-fitting shoes is an educational problem and therefore another job for the schools.



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Glaucoma

(Continued from page 98)

coma is detected, the patient is warned of further attacks, and drops are given in the hope of preventing them. Should he be negligent in carrying out instructions, it becomes necessary to operate. Operation at this time may stop the progress of glaucoma.

In the presence of a full-blown attack, haste in treatment is imperative. Every hour wasted jeopardizes the future sight of the eye. The eye physician should be consulted immediately, or the family doctor should be asked to recommend one. Delay, in the hope that the attack will pass off shortly, may have tragic consequences. Often the attack can be controlled by the judicious use of drops; where these drops have failed, surgical intervention is indicated.

What the future holds for the eye suddenly blinded by acute, inflammatory glaucoma depends on the rapidity with which the treatment is begun and how well the eye reacts. If drops overcome the attack, generally the patient will do well. But it is vitally important for him to keep up the treatment and continually be in touch with his doctor. Sometimes, after the attack is controlled by drops, a preventive operation is performed. In these instances restoration of the normal eye function is greatly insured. However, if an operation becomes necessary to limit the attack, the future of the eye becomes appreciably poorer. Approximately 90 per cent of such patients, if operated on within three days of the onset, retain useful vision. The longer the operation is postponed, the smaller the chances become. The specialist should be permitted to determine whether eye symptoms indicate glaucoma or one of the more frequent, milder conditions which so closely resemble this serious one.

Chronic Inflammatory Glaucoma

If the inflammation persists for a time without abatement, it lapses into a chronic inflammatory phase. Some patients develop this type of glaucoma directly, without any violent onset. The picture of this form is essentially the same as that of the acute, with reduced violence. Pain is not so severe. There may even be only a morning headache. Mild swelling of the lids, a little tear discharge, and redness of the eye may be present with the pain. Hypertension is not marked and varies during the day. Loss of vision is proportionate to the degree of change within the front membrane of the eye and the degree of damage to the optic nerve. Actually a part of the brain, the optic nerve is responsible for sight and enters the eyeball from behind. It can be seen with the ophthalmoscope, which is used to view the interior of the eye. Treatment of chronic glaucoma is less satisfactory than treatment of the acute variety. It follows the same general course, except that the need for early operation is not so great. For the majority of patients an operation will be necessary, with the expectation of maintaining vision. Completely normal vision, however, should not be expected.

When a glaucomatous eye has not been treated, or when it fails to yield to treatment, it progresses to a final stage known as the absolute. Absolute glaucoma is characterized by a blind, hard eye which is red and painful. Medicinal treatment is of no value; an operation affords the only relief.

Chronic Simple Glaucoma

Of the various forms of increased tension of the eye, the chronic simple glaucoma is the most frequent. In metropolitan areas it represents 3 per cent of all eye afflictions, always affecting both eyes. There may be no special discomfort, but on the other hand certain mild symptoms may arise: a little change in vision, early morning headache, blurred vision, or a disturbance of the faculty of adapting the eyes from light to dark. It must be borne in mind that good direct sight may be preserved for a long time, even though the side-to-side vision has been destroyed. In addition to these phenomena, a family history of glaucoma, or headaches which occur after the patient has been in

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a dark room—as at the movies—may aid in establishing the diagnosis. To be sure, careful testing is essential to confirm or relieve one's suspicions.

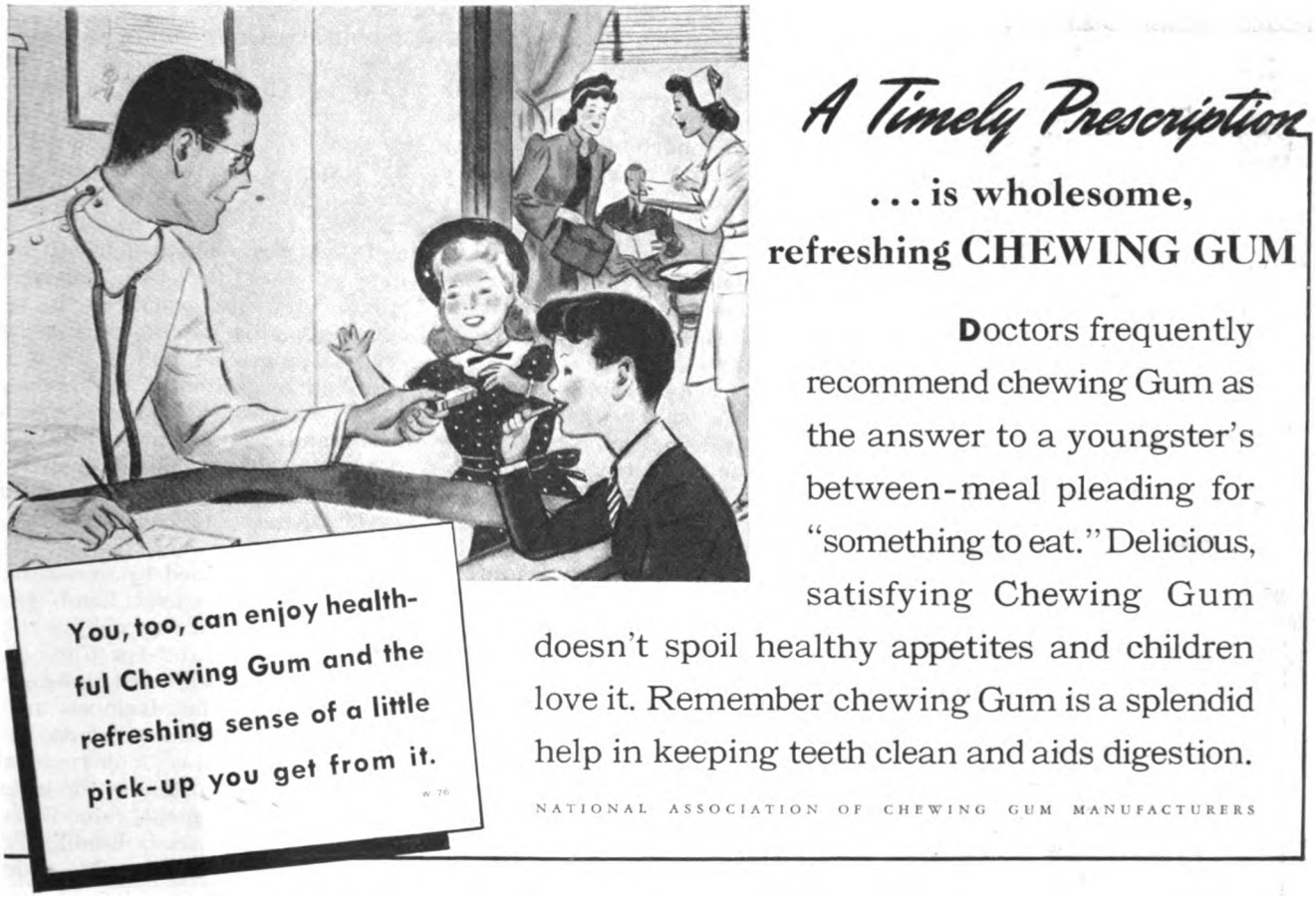
Diagnosis is of prime importance, and after diagnosis the question of treatment becomes paramount. Early recognition is the foremost factor; an increased number of cases is recognized today because the public is more aware of the trouble. Patients come earlier and give the doctor an opportunity to control it before the ravages of the disease have taken their toll. The proper management of chronic simple glaucoma is one of the most difficult problems with which an eye physician has to deal. Many factors are to be considered, not the least of which is the character and temperament of the patient. As a rule, medical measures are administered first; as long as the condition does not grow worse, this conservative care is continued. Regularity of medication must be stressed, for negligence in this may result in some loss of function. The use of drops must be kept up at all times, unless stopped by the doctor. Furthermore, it is necessary to avoid mental and physical excitement; the general health should be brought to the highest standard. Nose, throat, ear, dental and any other possible source of infection should be investigated and treated. Moderation in all things is the keynote. Ordinary use of the eyes is not detrimental in any but exceptional cases.

Even the most favorable cases may show progress of the disease, despite the regular and ofttimes intensive use of drops. Changes may show that the glaucoma is just beyond medicinal control, and that the loss of function is slight but definite. Having ascertained this, the surgeon is obliged to advise operation. Surgical drainage will relieve the destructive hypertension in 85 per cent of these patients. Many owe the preservation of their sight to such treatment.

In this mild form of glaucoma, the outlook for the ultimate maintenance of visual function is good. Many patients can be kept comfortable throughout their lifetime by the intelligent and diligent use of drops, along with systematic supervision. Some patients have been doing well for years, receiving only drops. Those requiring surgical care cannot look forward to as bright a future, but if the operation is followed by careful observation and any ill effects are controlled as they arise, the years ahead will be happier. On the other hand, those all too frequent patients with glaucoma who come to the physician in their late stages have lost so much eye function, and resistance has been so lowered by the disease, that there is always a question of permanent future sight. Generally, ocular functions that are lost are lost forever. All that can be done is to preserve what is still intact.

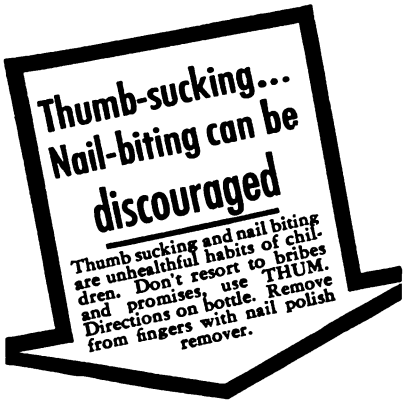
The Secondary Group

The secondary group of glaucoma is merely a state of inside hardness of the eyeball caused by some recognizable factor within or without. It seldom affects both eyes. The ensuing symptoms vary from the very mild to the violent out-



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THUM contains capsicum 2.34% in a base of acetone, nail polish and isopropyl.

burst of inflammatory hypertension. Consequently, all affected patients are studied to determine in which class they belong, the primary or secondary. Elimination of the causative factor commonly results in cure of secondary glaucoma.

Congenital Glaucoma

In the third great group is the congenital form of glaucoma, in which the child is born with the disease. This is the infantile type; fortunately, it is rare. Enlargement of the eye is frequently the first noticeable sign. By the time enlargement is apparent, the disease is fairly well advanced. Heredity sometimes plays a part in congenital glaucoma. As in adults, it can be secondary in nature. The reason for enlargement of the eyeball is found in the fact that the entire enveloping membrane of the organ is elastic in infancy and childhood. When there is excess pressure within, the membranes stretch, and the eye becomes larger. Some of the afflicted are cured in time, and the damaging effects can be controlled by drops, precisely as in primary hypertension. There is a small percentage, when seen early, for whom the pressure can be lowered indefinitely, or until past puberty—when the ocular tissues are no longer so elastic. A large number of youngsters, however, persistently lose ground despite the medicine employed. These children come eventually to operation.

The person who develops any suspicion of glaucoma should seek skilled advice to rule out or ascertain its presence. The eye physician knows.

About Pneumonia

(*Continued from page 127*)

that the consolidation is scattered about the bronchi throughout the entire lung. In the former case he will term it "lobar," and in the latter, "broncho pneumonia." He may be led to a further but still tentative diagnosis of the cause, depending on circumstances. He will study the excretion or expectoration from the lung, which will carry organisms responsible for the inflammation. If the disease is due to pneumococci, he will often see characteristic lance-shaped bacteria, red and white blood cells in the mucus.

At first, the pneumococci will be outside the cells, but as immunity develops they will have swollen capsules and be inside the cells, showing that they have been devoured. By application of suitable sera obtained from rabbits he will determine which serum of the fifty-odd varieties swells the capsules of the organisms. Armed with this knowledge, he may discover when protective and healing antibodies have appeared. Besides this examination, he may take 45 to 50 drops of blood from an arm vein and seed it into several different containers containing broth for culture to see whether organisms are present in the blood. The presence of organisms in the bloodstream lends gravity to the outlook and means that more active treatment should be applied. In order to determine the response of the patient he will have a blood count made, especially a count of the white cells and their character, which will tell him whether the bone marrow where they are produced is responding; this count will be increased unless the patient is overwhelmed by poison of the disease. The bone marrow has been stimulated, and young, partially developed white blood cells, recognized by their straight or staff-shaped nuclei, are increased in number.

In addition to interpreting the information obtained by examining the chest with his eyes, hands and ears, the physician may confirm his observations by interpreting the shadow of consolidated lung on x-ray plates. The diagnosis may thus be corrected or confirmed, and the film serves as a permanent record of the condition in the lungs and may be of great value later. When the diagnosis is established, the physician can proceed to order treatment.

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The state of a child's adjustment is the basis of his speech. Proper relationships at school and at home are more important than elocution lessons!

Healthy Speech

By Gertrude Green

TWO MOTHERS were discussing their respective aspirations for their children. "Above all," said one, "I want Mary to have beautiful speech when she grows up." "Why don't you give her elocution lessons?" said the other. Mary was unconscious of her mother's great hopes for her, but she was happy gurgling in her crib, kicking her legs and waving her arms. She did not know what her mother was saying, but she did like the pleasant sounds she was hearing. Her mother had not realized that the baby's speech education had begun already, although Mary had not yet uttered a single word. She had observed when Mary was happy—when she was comfortable—she made pleasant gurgling sounds. When she was uncomfortable, she did not make such pleasant sounds! In fact, her mother had learned to use the kind of sounds Mary made as a guide to determine the baby's comfort and state of happiness. The foundation of Mary's speech was already made. Speech is our means of expressing our emotions, and our state of adjustment is the basis of good speech—far more than all the elocution lessons in the world.

Mary's mother and father had spent a lot of time talking to her, and she loved it. It doesn't matter whether or not a child understands actual words, as long as we speak to him in a pleasant voice. Mary's parents had accomplished the first step in good speech. They had



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EXPECTING A BABY?

Ask your doctor about breast feeding, especially during early weeks of infancy. Take his advice on supplementary feeding, particularly about cleanliness. Regular medical care and advice on nutrition can speed development and improve baby's health.

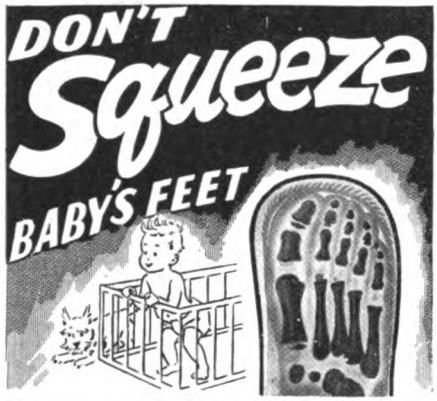


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given her the opportunity of hearing good speech, the right amount of attention and physical activity. Although Mary was only at the gurgling stage, she would go through the babbling stage, and finally reach adult speech only because she had heard that kind of speech. Speech is not inherited. A child learns to speak by hearing those about him—"As ye hear so ye shall speak." Although Mary will go through the baby talking stage, her parents will not talk baby talk to her, otherwise she will take a longer time to reach adult speech—with perhaps disastrous results. Baby talk often continues into adult life, with the result that there is a thwarting of the personality. Good speech is a social asset; we cannot take our place happily in society unless we have the tool of good speech—our means of communication with others. It is so bound up in everything we do that we seldom realize how constantly we use it.

McDougall, the psychologist, says, "The beginning of speech is the most momentous event in the history of the child. Its understanding is the key to the whole storehouse of knowledge and on its use all human fellowship depends." Baby talk is a most unsatisfactory tool for social communication. When it is carried beyond the normal point of speech development, it implies an infantile attitude that ceases to be "cute." At school the child will surely become self conscious when his speech is difficult to understand and the other children tease him. He feels different from the other children. He cannot compete on the same footing. Often such a condition will cause the child to stumble over his words, and the result is a stutter.

Baby talk can also be prolonged if the child psychologically wants to remain a baby. The hardest thing any human being has to do is—grow up! When we are babies we do not have to assume responsibilities or make decisions; we live in a world that is ordered for us. The wisest parents will allow their babies to grow up. One of the most frequent remarks by parents after a baby's first birthday is, "I hate to see him grow up." We must realize how important it is to the child's future happiness to allow him to "grow up" in the preschool years. Baby talk is merely a symptom of maladjustment. The cure does not lie in speech exercises alone.

One of the causes for delayed speech is closely allied to the same conditions that cause baby talk. It often happens that a child does not develop speech at the right time because he does not need any short cut to action. In such a case, the child is treated as a baby. All his wants are gratified by crying or unintelligible sounds. This child controls his environment by temper tantrums or his own sounds, which his doting family interpret for him because he is the "baby."

In the past few years, we have learned what prevention means in maintaining physical health. There is no reason why we cannot use prevention in order to maintain healthy speech. The principles of mental hygiene applied to speech apply equally to other behavior, for speech is not something separate and distinct but is part of the total personality. We could prevent much misery if we would realize that in the formative stages of speech there are definite preventive measures that should be taken. There must be consideration of the environment of the child, his home conditions, his relations to his family.

Common sense methods of child training must be considered in the prevention of speech defects. By their own degree of adjustment, parents will be the major factor in determining their child's speech. That is why Mary will grow up to be a happy personality. Her speech will be good not only because her mother and father spoke to her in a pleasant voice; their voices would not have been pleasant unless they were compatible. By understanding themselves, they were able to create the atmosphere necessary for Mary's normal development. They wisely knew that Mary was born with certain attributes heredity would control but that the environment in which she lived would be the final determining factor in her happiness. The first place to look, then, in search of healthy speech, and in fact all healthy attitudes toward life, is within ourselves. As parents, we are only trying to excuse ourselves when we say, "My mother

(Continued on page 155)

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Acne

(Continued from page 114)

which the flushing of the face is caused by dilatation of the blood vessels of the skin. It is more likely to occur in those persons having a diminished amount of hydrochloric acid in the stomach, in those who imbibe too freely of coffee, tea or alcoholic beverages, and in those who eat hot and spicy foods. Both acne and rosacea are aggravated by prolonged nervous and mental strain, by lack of sleep and by lack of proper relaxation.

There is a background of seborrheic eczema in rosacea also, as is evidenced by redness and scaling of the areas on which this eruption occurs. The large, red nose—caused by thickening of the skin and multiplication of the oil glands and blood vessels—may develop on a rosacea background. The nose may become very large, and this may be seen in persons who never indulge in alcohol. It is practically never seen in women, but is not rare in men suffering from this disease.

A group of drugs known as the halogen salts, which include the bromides and iodides, produce acne-like lesions. They occur on the same locations as acne, but differ in that they are somewhat tender to touch and are not associated with blackheads. The eruption disappears when the drugs are withdrawn. Common acne, though, may be aggravated by the ingestion of table salt containing iodine.

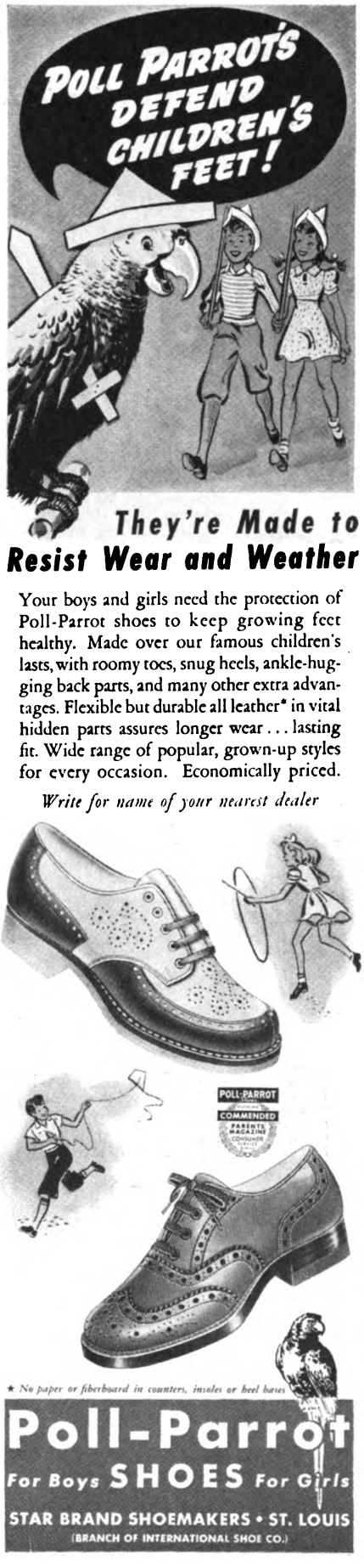
An eruption known as neurotic excoriations occurs on the acne areas in young women. This resembles ordinary acne, but on close inspection lesions are found which have resulted from picking the skin with long finger nails. No blackheads are present, and it is as difficult to convince the patient to desist as it is to persuade her that she does not suffer from acne. It is a manifestation of a mild form of hysteria and is analogous to biting the finger nails.

In its treatment, the skin of the areas affected by acne should be washed with mild soap and water. Patients are to be cautioned against spreading infection by squeezing and opening pimples in a crude, non-sterile manner, for such tampering exposes the patient to the danger of serious, deep-seated infection. This is particularly true when the pimples are located on the lips, nose and cheeks. It is safer in every way to leave this procedure to the physician, who will treat these lesions with little pain, minimizing the danger of infection and scar formation. It is important to take proper care of the scalp by shampooing it frequently and by applying proper remedies for the cure of dandruff and seborrheic dermatitis.

Few dietary restrictions are necessary; the diet should be carefully regulated to reduce the carbohydrate and fat intake, and to place more emphasis on fresh fruits and vegetables is essential. Table salt containing iodine, bromides, and chocolate in any form should be avoided.

Expressing the blackheads with a suitable instrument oftentimes prevents the development of pimples and the pitted scars which follow. These truly surgical procedures should be carried out only by the physician. It is wise to try to accomplish all one can by the aforementioned procedures before x-ray treatment is administered.

Occasionally a patient hesitates to take x-ray treatment because of the erroneous statement of a friend that x-rays cause pitting and scarring of the skin when used in the treatment of acne. No statement is further from the truth. There are many people living today who are badly scarred from acne, in spite of the fact that they were never treated with x-rays. Many persons showing disfiguring scars today suffered from acne before x-rays were discovered. X-ray treatment is especially indicated when blackheads are numerous, large and hard, or when acne lesions are deep seated or cystic. Patients may experience a slight flare-up of their acne after the first few treatments of x-rays are administered, and



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improvement may not become evident until they have had six or eight treatments. At about this time there is a retardation of the activity of the oil and sweat glands. Improvement is indicated by a decrease in the number of new pimples and blackheads and by involution of the old lesions. Exposure to sunlight, when properly regulated, has a beneficial influence on acne, as can be attested by those who have suffered from this disease. Indiscriminate, prolonged exposure to the sun's rays may aggravate acne and if persisted in year after year may lead to the development of skin cancer. Methods of peeling the skin by the application of chemical substances are not without danger. They are extremely hazardous when applied by so-called beauty experts who are qualified neither by medical education nor by law to treat this condition. It is my opinion that injections of vaccines are of no value in the treatment of acne.

It is important to treat acne early in sensitive girls and boys in order to prevent them from developing a sense of inferiority which may become permanent and affect their lives in the future.

INFANTILE PARALYSIS

Three recent developments have occurred in the field of infantile paralysis. Harold K. Faber, of San Francisco, reported to The National Foundation for Infantile Paralysis evidence that one of the portals of entry of the virus of the disease may be the respiratory system. Investigations with monkeys showed that in at least 1 case the virus entered through the nerve endings of the bronchial tree in the lungs.

Evidence that there are apparently healthy juvenile carriers of poliomyelitis has been uncovered in a study made of an outbreak of the disease last summer in the western suburbs of Cook County, Ill., Edward A. Piszczek, Howard J. Shaughnessy, Joseph Zichis and Sidney O. Levinson, Chicago, declared in a preliminary report published in *The Journal of the American Medical Association.* Although the disease is generally believed to be transmitted from adults to children, in the Cook County outbreak contrary evidence was found. Particularly significant was the case of one boy who had contact with 2 of the first 4 children to become ill in the outbreak, but who did not have any apparent illness himself. The boy lived with his mother, who was separated from his father, but during the outbreak visited the latter five times. The father later became ill with infantile paralysis and died of the disease. The boy later left the state on a vacation trip and when he was located two months later, the virus of infantile paralysis was found to be present in a stool specimen.

In an editorial appearing in *The Journal of the American Medical Association* on a report adopted by The National Foundation for Infantile Paralysis, the Kenny method of treating victims during the acute stage of the disease by means of hot applications to the paralyzed limbs and passive exercise rather than immobilization was endorsed.

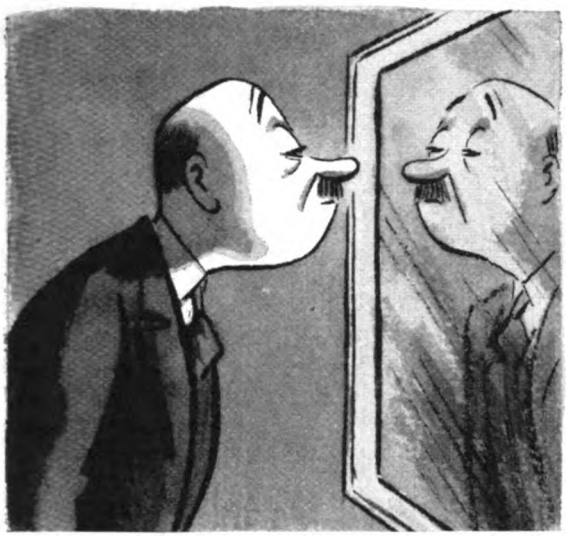
It was pointed out both in *The Journal* and in the Foundation report that the use of the method recommended by the Australian nurse, Miss Elizabeth Kenny, was clearly indicated by evidence submitted by investigators of the method.

BACILLARY DYSENTERY

Rigid control of public hygiene and sanitation by public health authorities can eliminate the menace of bacillary dysentery in the United States, an article by Joseph Felsen, M.D., which will appear in the March issue of HYGEIA declares. Although nearly 20,000 cases were reported to the United States Public Health Service in 1940, Dr. Felsen says, it has been demonstrated that the disease is preventable—through the careful identification and isolation of infected persons. Dr. Felsen is director of the International Dysentery Registry and director of laboratories and research at the Bronx Hospital, New York City.

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How do you Feel?



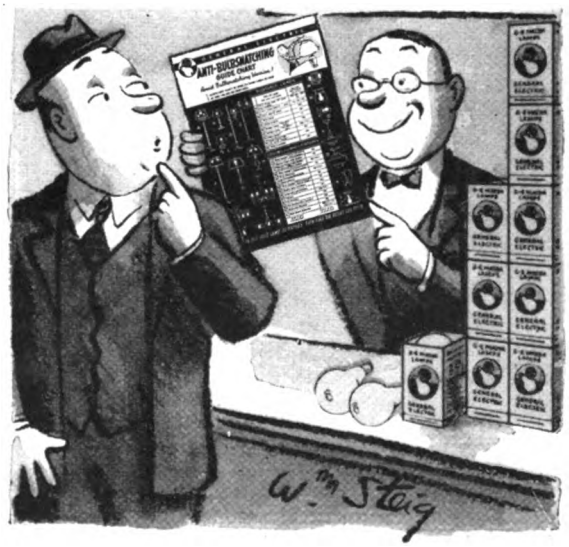
TIRED EYES? Maybe you've been reading with an undersized light bulb. It's one of the surest eyestrain-inducers we know. And eyestrain is no joke when we need our eyes for vital wartime jobs. You can guard against eyestrain by getting *right* size G-E bulbs!



HARD TO CONCENTRATE? If your eyes wander from your book, let them wander over to the bulb in your lamp. Maybe some bulbsnatcher has swiped your new 100-watt G-E bulb, and left you to strain your eyes under a 25-watter from the hall!



BAD TEMPERED? Does your wife (or husband) fly into a rage at the slightest provocation, such as being called a "bulbsnatcher"? Think back. Didn't you take that bulb yourself for your workshop (or kitchen), just because you didn't have a right size spare on hand?



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BOOKS ON HEALTH

Feeding Our Old Fashioned Children

By C. Anderson Aldrich, M.D. and Mary M. Aldrich. Cloth. Price, $1.75. Pp. 112. Illustrated. New York: The Macmillan Company, 1941.

One of the most helpful books ever written to guide and aid mothers in developing proper eating habits in their children was called "Cultivating the Child's Appetite" by Dr. C. A. Aldrich, published in 1927 and now out of print. It emphasized that children need not be forced to eat, that their parents might rely on them to guide their own intake of food, and that forcing food was futile since it led to family strife and very little food was ever put into alimentary circulation as a result of this method. This book now being out of print, Dr. Aldrich and his wife began a revision intended as a third edition, but so many changes had been produced in this controversial subject that an entirely new manuscript was gradually developed.

The advice in "Cultivating the Child's Appetite" was more or less empirical and the reasons none too clear, but in this new book, "Feeding Our Old Fashioned Children," the earlier observations are backed up by forceful scientific evidence which has given the whole subject a wider significance. This evidence offers new solutions to feeding difficulties by diverting our thoughts from the food to the children who do the eating. The evidence is summarized as follows: Children are born with the ability to control activities necessary for their survival, that is, to maintain their circulation, breathe, excrete, and maintain a mechanism for taking in and using food—all normal children are hungry and all children know how to eat. Evolution has taken millions of years to polish and perfect these controls of survival, and children are old fashioned enough to continue being born with this gift, even in an age when this natural asset is threatened by the restrictions of modern mealtimes.

The inborn control over eating helps to make possible a child's survival and nourishment, and the daily use of this eating equipment also allows him to begin at birth to assume some of his own responsibility for living and cooperating with adults, as he must have help from the adults around him until he can use his hands well enough to feed himself. The early feeding experiences, then, offer nourishment, a chance to manage some of his own equipment (habits of self-reliance), and a chance to establish pleasant associations with his mother (successful human relations). These are his first lessons in becoming a competent, self-reliant person. Consequently, the child who acquires an antipathy to eating not only loses his best opportunity to be well nourished, but also closes one of his avenues for a simple physiologic personality development. Thus the appetite problem is considerably more than a purely nutritional matter. The ritual that has grown up around many centuries of civilized mealtimes has caused us to lose touch with the significance of primitive behavior, and elaborate research has had to rediscover these advantages in the commonplace business of eating.

The scientific feeding of children must take all these factors into consideration and emphasize their relation to the active living child. The Aldrich's have successfully made this correlated information easily available to the people who are to use it (mothers and nurses). There is no short-cut to creating a good appetite or to repairing a damaged one, either by disciplinary measures or by medical prescription. The key to maintaining sound appetites in children lies in our sympathetic understanding of the child himself and how he responds to food. The general psychologic thesis is the one developed so successfully by the Aldrich's in their popular book, "Babies Are Human Beings." The present work is a companion volume for the parents of the child who will not eat.

Delightful photographs of children are found in the book, illustrating various phases of the discussions. This book contains more condensed valuable information regarding the subject matter than any the reviewer has ever read. It should be studied by all physicians caring for children, all new parents and many old ones, by all infant nurses, dietitians and others who work with children.

It should be pointed out, however, that no parents should attempt to solve a persistent feeding problem in their offspring without the cooperation of a physician, because occasionally the poor appetite may be at least partially physical in origin and some simple correction of anemia or vitamin deficiency might greatly aid in clearing it up. Occasionally, some more serious underlying chronic disease may be uncovered.

JOSEPH K. CALVIN, M.D.

Your Teeth—Their Past, Present and Probable Future

By Peter J. Brekhus, D.D.S. Cloth. Price, $2.50. Illustrated. Pp. 255. Minneapolis: The University of Minnesota Press, 1941.

This book admirably fulfils its stated purpose of telling an authoritative story about the teeth, "their past, present, and probable future." The author makes a special point of enlightening "the people as a whole who for decades have been told a great many things about their teeth that are not so." The result is an extremely interesting, and often witty, account of the teeth in health and disease.

Dr. Brekhus, who is a distinguished teacher and research worker in dental problems, does his best to abolish many of the misconceptions that surround the best methods of preserving the teeth and conserving dental health. He discusses the important relationship between dental and general health, giving sound information

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that can be read with profit by any parent, teacher or layman.

Before writing about dental problems of the present day, the author provides his reader with a valuable background of dentistry in olden times, dental disease among animals, and the teeth of other races. There is then a very clear presentation of the scientific facts available on such topics as dental decay, pyorrhea, and factors in the loss of teeth. The author feels that one of the most vital functions of dentistry is "to fill the small cavities in children's teeth" since this will prevent future dental troubles most effectively.

This clear and authoritative statement on dental problems has been needed for a long time. Readers will find this book a sound guide to accurate and scientific information on a wide variety of dental topics.

HARRY PINNEY, M.D.

Factors Related to Children's Participation in Certain Types of Home Activity

By Editha Leucke, Ph.D. Cloth. Price, $1.60. Pp. 103. New York: Bureau of Publications, Teachers College, Columbia University, 1941. Contributions to Education, No. 839.

On the basis of check lists completed by children, checked by check lists executed by parents and validated to the satisfaction of the author by interviews and observations, this thesis demonstrates in rather elaborate statistical form that some children are willing to assume their share of home chores, such as care of personal belongings, keeping the house neat and clean and assisting in the preparation of meals, while other children are unwilling. The study also demonstrates the well known fact that some parents have constructive ideas about using chores to develop character, while others, for various reasons, lack such good sense. The study discloses nothing that was not well known to any alert teacher or observing parent.

W. W. BAUER, M.D.

Dark Legend

By Frederic Wertham, M.D. Cloth. Price, $2.75. Index. Bibliography. Notes and References. Pp. 270. New York: Duell, Sloan & Pearce, Inc., 270 Madison Ave., 1941.

This book is a study of the psychologic pattern lying behind the murder of his mother by a 17 year old boy. The author designates it as the detective story of a search for a motive.

The book consists of three principal parts, an introductory outline of the actual events, the boy's story in his own words and the psychologist's analysis of the psychological situations and trends. These parts are not presented separately but are interwoven. The entire series of events, beginning with the death of the boy's father and leading through his mother's adventures with men without benefit of clergy, plus the boy's sense of neglect and depravation and his feeling of responsibility for the younger children is described in parallel with the story of Orestes and Electra in the Greek tragedy of matricide, and the story of Hamlet.

It is an interesting analysis, arriving at the conclusion that the killing was a necessary act to preserve the mental integrity of the boy. The superficial motive, that of avenging the honor of his family, is discredited by the psychiatrist, who regards the act of murder as a necessary outlet for a state of catathymic crisis. Catathymic crisis is defined as follows:

"Catathymic crisis is a circumscribed mental disorder, psychologically determined, non-hereditary, without physical manifestations, and not necessarily occurring in a psychopathic constitution. Its central manifestation consists in the development of the idea that a violent act—against another person or against oneself—is the only solution to a profound emotional conflict whose real nature remains below the threshold of the consciousness of the patient."

The book is decidedly adult reading for thoughtful readers.

W. W. B.

NOTICE

Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through HYGEIA or the American Medical Association, unless published by this organization. The following list contains the complete addresses where the publishers mentioned in these reviews may be reached:

Duell, Sloan & Pearce, Inc., 270 Madison Avenue, New York City.

Columbia University, Bureau of Publications, Teachers College, 525 W. 120th Street, New York City.

The Macmillan Company, 60 Fifth Avenue, New York City.

The University of Minnesota Press, Minneapolis, Minnesota.

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Can Varicose Veins Be Prevented?

(Continued from page 105)

portant to determine in a patient with varicose veins whether or not the deep veins are closed, for there is danger of causing a permanently swollen leg if active treatment of superficial varicosities is undertaken in the presence of stoppage of the deep venous circulation.

Occupation is undoubtedly one of the prime factors contributing to varicose veins in patients who must stand or walk at their work. Naturally, not every one who stands at his employment develops varicose veins, but a definite number of such men and women give evidence of varicose vein formation after a period of time. Blood is returned to the heart by means of cardiac action and the combination of many leg muscles continually contracting with every motion of the leg. Working against the pressure of the venous blood, these muscles help force the blood back to the heart while small valves in the veins prevent backflow. If a patient stands for long periods, the blood return is slackened, and the blood tends gradually to remain in the veins, forcing them to dilate. The important backflow valves become functionless, and varicose veins appear superficially. Similarly, if the patient must walk considerably the leg muscles tire and their contracting function is diminished.

In any event, a patient does not have to give up his occupation because he has chronic varicosities or is beginning to notice an occasional dilated blood vessel. Early and chronic varicosity may be treated while the same work is continued. Of course, the earlier treatment is instituted the less discomfort a patient must endure, and the more able he will be to carry on his required duties.

The number of varicosities caused by tight garters in both male and female patients is surprising. This is more evident in the summer when women wear less clothes and do not support their stockings by a girdle or corset. In warm weather, some patients' legs have a tendency to swell, and a tight garter around the lower leg or thigh restricts the venous return of blood. People who must stand at their employment should not wear tight, constricting circular garters, and a patient who is undergoing treatment for varicose veins should never wear circular garters.

During pregnancy, many women suffer from varicosities which cause considerable pain. As a rule, these varicose veins are caused by increased weight, pelvic congestion and pressure of the enlarged uterus on the veins returning the blood from the legs. Most varicosities disappear some weeks after delivery, but they may recur if the patient again becomes pregnant. After several pregnancies the varicosities may persist until proper treatment has been started to eradicate them.

When varicosities are first noticed in a pregnant patient, it is best to apply an elastic bandage or stocking from the instep to the upper thigh, in one or both legs as the case may be. If the patient has severe varicosities and suffers in the early months of pregnancy, careful injection of medication into the veins can be tried. The patient should rest in the afternoon, keeping the legs elevated on a pillow to help the venous circulation and decrease the edema of the legs. When a reasonable length of time has elapsed after delivery and in spite of elastic support the veins remain enlarged, it is proper to start active treatment.

Some patients who are not aware that they have varicose veins complain of leg cramps when they walk or stand and are also awakened at night by cramps in the calf muscles. Perhaps, too, they may be conscious of daily swelling of the ankles. Diseases of the heart, kidneys or liver can all give edema of the ankles, but as a rule these do not cause leg cramps. Ruling out an orthopedic disorder, leg cramps usually mean some disturbance in the blood vessels, whether it be in the arteries or the veins. This can only be diagnosed by complete physical and laboratory examination.

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Healthy Speech

(Continued from page 148)

or father acted exactly in that way." If we would apply the principles of mental hygiene to ourselves first, our children would benefit immeasurably. Prevention does not begin with the child but with the parents. Kate Douglas Wiggin has said, "Solicitude for childhood is one of the growing signs of our civilization today. To cure is the voice of the past; to prevent, the divine whisper of today." When we realize that approximately 60 per cent of stutterers can be traced to the time the child began to go to school, we get some idea of what the preschool period means in terms of our adjustment as parents. If the child were properly prepared in the preschool period, this alarming percentage should be reduced to practically nothing. The child's first move out of the home takes him into the school. This difficult time for the child we can make easier by our own state of adjustment. The parents are the people to whom the child is constantly exposed before going to school; they hold the child's happiness in their own adjustment. Thus the child's speech, too, is directly affected by their attitudes, since a healthy state of mind means healthy speech.

One of the biggest jobs before the speech therapist today is to convince the parents of children with speech defects of psychologic causes, such as stuttering, baby talk, lisping and cluttered or indistinct speech, that the cure lies not alone in medicine or speech exercises but in the attitudes of parents and children. To be sure, both have their place; medicine's is in maintaining physical health, which is the foundation on which all work with children is based. Speech exercises improve speech —but do not cure defects. Speech correction would be a simple process if it were based on speech exercises alone. Realization that the expression of emotion is one of the functions of speech will help us to understand the complexity of speech defects. "It is not difficult to understand, then, how feelings of fear and timidity influence this

(Continued on page 158)



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Philip Gendreau

Sanitary Requirements for School Lunches

Lunchroom directors, principals and school physicians or health officers should work together to see that sanitary measures are watched and thus prevent the spread of disease through foods

A message from the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.

THE SCHOOL LUNCH serves an extremely important purpose from the standpoint of nutrition and practical health education. Such being the case, the Joint Committee on Health Problems in Education calls attention to certain protective sanitary measures, knowing that the carrying out of these measures will help avoid sickness resulting from contaminated food.

The educational aspects of school lunches, as well as the requirements for an adequate diet, have been presented in the Joint Committee Report, Health Education (1941 Edition), to which the reader is referred. The index of this report furnishes many references to the educational value of the school lunch.

For the purpose of assisting further we make the following additional recommendations concerning lunchroom personnel and equipment:

1. All persons employed in the lunchroom must be scrupulously clean in person and attire. They should be required to submit to health examinations or procedures which the health or school authorities may see fit to require.

2. The lunchroom and kitchen must be clean and as well equipped as it is possible to expect under the existing circumstances in the particular school, bearing in mind the fact that many schools which are poorly equipped are in very special need of school lunches from the standpoint of nutrition and education.

3. There must be present and in constant use the following equipment: a stove of such capacity as

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will furnish abundant heat for cooking and for heating large amounts of water; a place to wash dishes where they may be scalded with water over 170 F. and allowed to dry; a supply of dishes and utensils sufficient to permit good practice in the handling of food; a clean, tight cupboard for the storage of dishes and utensils used in cooking; a supply of kitchen linen or its paper substitute great enough to permit sanitary handling of the food; and an icebox or refrigerator, if such is at all possible.

4. Food low in price is permissible, but it must not be fermented, decomposed, frostbitten, unclean or of unsanitary quality.

Milk should be pasteurized. If unpasteurized, it should be *boiled* on the premises. If powdered milk is used, it must be mixed with safe water within an hour or two of the time it is to be used.

Home-canned fruits are safe, but home-canned *meats* and *vegetables* may be used only after being boiled from 3 to 5 minutes after removing from the can.*

"Leftovers" are *never to be carried over to the next day.* All food prepared must be eaten, sent home with the children, or put in the garbage the *same day it is prepared.*

Day-old products are not to be used if there is any ingredient which is capable of spoilage or fermentation. This precaution is particularly needed with products containing cream fillings, meringues, or non-acid dressings or sauces, such as mayonaise, whipped cream, and French dressings.

5. The housekeeping of the lunchroom and the kitchen must be above criticism. Particular attention should be given to the exclusion of flies, rats, mice, roaches and other vermin. Containers which are vermin-proof must be provided when it is impossible to eradicate these nuisances.

6. The personnel and equipment must be under the daily supervision of some responsible person trained for such work—school physician or school nurse, principal or home economics teacher—who will have authority to order the abatement of a condition which may be dangerous. This responsible person shall decide whether a lunchroom

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worker is or is not fit to work on any given day. He shall take into consideration the following points and such others as seem pertinent or necessary to insure safety to the persons eating the school lunch:

(a) Is the worker clean in person and clothing?

(b) Is there suspicion that the worker is suffering from some communicable disease? If so, he should be examined by a physician or health officer who, in turn, should inform the administrative head of the school regarding the possible transmission of the disease. He should not be permitted to return to work after sickness or absence of undetermined cause until seen by a physician.

(c) Is there any infectious disease, such as scarlet fever, in the home of the worker?

(d) Is there any skin disease or discharging wound?

The close cooperation of lunchroom directors, principals and school physicians or health officers is required if school eating places are to be safe. These people working together can see that sanitary precautions are taken and thus prevent the spread of disease through foods.

Healthy Speech

(*Continued from page 155*)

speech mechanism which extends from the pelvis to the top of the head and includes more than one hundred muscles," says Dr. Blanton. We have all experienced the feeling, when we have been excited, of a blocking or hesitancy in speech—sometimes we have actually stuttered.

Nothing is more necessary to a child's mental health than the security which compatibility between father and mother can bring. One of the fundamental rules for every woman to keep before her at all times is that relaxation will be a bulwark on which she can always depend. A man and woman live in two different worlds; one of the arts of a successful marriage is to reconcile these two worlds into one of harmony. The idealistic picture of the tired husband met at the door by his smiling and attractive wife is one that is all too often a fictional one. It is impossible to remain fresh and smiling at the end of a day that has kept a mother on her feet since Junior had his six o'clock morning bottle.

If we practiced the art of relaxation so that it became as much a part of our routine as Junior's daily rest, we would find time to take it in spite of the multitude of household tasks. A good time to be free of disturbance is at the time of Junior's rest. After a rest, if Junior spills his glass of milk, we do not regard him as a careless, naughty child, but as the usual case of lack of coordination. There is a minimum of tension when we are rested. We do not inhibit the child's speech development by telling him not to talk so loudly, and we answer his numerous questions with an interest that adds spice to the enjoyment of childhood curiosity and wonder. Junior is allowed to romp, to push, pull and climb without causing us concern, and thereby he gets the necessary physical activity to develop his large muscles and in turn aid his speech development.

The mother's rest should be as complete as possible. Shoes and tight clothing should be removed, and she should actually lie down on a bed. At first it is not easy to "let oneself go," but with practice a feeling of ease can be induced. Raising the arms from the elbows and dropping them slowly is a help. When one is relaxed, one feels heavy. It is quite possible, with practice, to "think" oneself into a complete state of ease. A "beauty treatment" aids relaxation, boosts the ego and repairs the ravages wrought by the day's housework. The hair can be brushed, the face creamed and the nails oiled. The first day is the hardest. One mother relates that she felt as though she would hit the ceiling if she didn't get off her bed. But in time she was able to relax to the point where she could fall asleep. This was a true test of her relaxed state, as sleep is the final stage of relaxation. Relaxation in itself is a beauty treatment that all women can afford, and the results are priceless.

A mother's voice may be pleasant because she has learned the art of relaxation; she has learned that no part of her body is more open to

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tension than her voice. She has learned to conserve her energy in her busy world, because she has observed that every activity needs a certain group of muscles to perform that activity and no others. Recreation may be considered part of relaxation, valuable in maintaining mental health. The father's relaxation may actually be recreation for both parents—as when they go to the movies.

A powerful influence in our lives is known as "transference of emotions"; it is often difficult to know whether our feelings are real or transferred from something else. To understand our behavior, we must know when we are transferring our own feelings. We may just have taken a burned cake from the oven when Junior presents himself at the kitchen door full of some experience which he starts to relate. We "shoo" him out in a shrill voice—not realizing that we are hurting his feelings. Similarly, our own fears or anxieties may be transferred to our children in the form of restricting their activities. Thus we may have a fear of dogs —perhaps for the good reason that we were hurt by one—but we must not refuse to get Junior a dog. We must try to evaluate situations in terms of the child's rather than in terms of our own feelings. Shakespeare said, "Nothing good or bad but thinking makes it so." Nine-tenths of suffering, says the psychiatrist, is self-created because we cannot apply reason to our feelings.

Our anxieties about our children are often an indication that we are trying to compensate our own failures. All of us should try to gain confidence by a sense of accomplishment in something. We must always be careful to find a level of activity to which we are suited in order to gain the success that is necessary for confidence. This success would eliminate over-anxiety and also much of the fatigue which is the result of inner conflicts. The elimination of psychologic fatigue would accomplish two purposes. We would have no difficulty in relaxing, and we would not demand too much of our children. "Showing off" a child by having him repeat long lists of difficult words and verses would probably be entirely eliminated if parents did not require compensation for themselves. This would remove one of the most dangerous causes of stuttering. Demanding too much of a child is a warning signal to ourselves that we are compensating for our own feelings of inferiority. The parents who say they couldn't have music lessons and other kinds of lessons—but want their children to have all the things they missed—are generous only to the point where the child shows definite aptitudes for the particular studies. If the child does not show any talent or interest, it would be far better for both the child and the parent if the parents took the lessons themselves.

Thus the ideal conditions for healthy speech are in reality the ideal conditions for a happy life. As parents, we are challenged to create a happy life for ourselves in order that our children may reap its fruits.

Pulling Teeth Without Pain

(Continued from page 126)

sedatives instead of heat and stimulants, follow this advice to the letter. The pain and discomfort associated with the extraction of teeth in the past has largely been eliminated by modern dentistry and by careful cooperation between patient and dentist.

There are still many people who do not know that a new plate may be made and ready to set just as soon as the extractions are finished. Plates may be placed in the mouth immediately with success, and the patient's friends need not see him without teeth. Strange as it may seem, gums do not become any sorer under the immediate set of dentures than they do when left open. In fact, many dentists think that immediate plates serve as a sort of splint and really help the gums to heal as they should. If you wish to avoid "gumming it" for several months, ask your dentist about immediate dentures before the extractions start. In only a few cases is this procedure not feasible.

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Medical News

OF THE MONTH

Physical Fitness of Men in Great Britain

Medical examination has revealed a high rate of fitness among the men called up for the fighting services; eight out of every ten have been found fit and many men will probably "make the grade" after a few months of army life, the regular London, England, correspondent of *The Journal of the American Medical Association* reports. He says that a surprisingly high standard has been found in the age group 37 to 40; six out of ten have been found fit.

Fireworks Death Toll in 1941

There were eleven fatalities recorded in 1941 from the use of fireworks and explosives in connection with Fourth of July celebrations as compared with eight the previous year, *The Journal of the American Medical Association* reports in its fifth annual summary of such data. This is the first time since 1937 that the decline in the total number of deaths from this cause has been reversed. However, the total number of reported injuries was reduced from 4,462 in 1940 to 2,039 in 1941.

Three states come in for particular condemnation in the report for lack of antifireworks legislation or ineffective enforcement of existing laws. The report points out that California, which ranks second in the number of injuries in 1941, has a limited law which obviously was not satisfactory.

In Massachusetts, which ranks third in number of injuries, antifireworks legislation was defeated. The report says that "The large number of injuries in that state therefore can be directly attributed to failure to adopt legislation which was obviously indicated by experience of previous years. . . . The record of Massachusetts with defeat of a satisfactory bill would imply an extraordinary lack of interest in the lives and limbs of its citizens.

"As has been pointed out repeatedly in these reports," *The Journal* says, "the reduction of fireworks injuries is dependent not only on adequate state legislation but on enforcement as well. . . . It is however a source of satisfaction that, in the five years since these reviews have been resumed, the total number of unnecessary accidents of this nature has declined from 7,205 in 1937 to 2,039 in 1941. . . ."

Need of Health Supervision and Education of Children

Evidence of the need for health supervision and education at all economic levels is strikingly shown by an analysis of the health records of 6,438 children representing widely different income levels and various types of community areas in Chicago who were examined by pediatricians in 1939 and 1940, Martha Crumpton Hardy, H. H. Boyle and Alvah L. Newcomb declare in their report in *The Journal of the American Medical Association.*

"Poor nutrition is clearly manifested in a composite of flabby muscles, underweight, pale mucous membranes, round shoulders, fatigue posture, bow legs, knock knees, flat feet, carious teeth and inadequate diets," the investigators declare. "At no income level is the general health picture satisfactory, but at the low levels it is definitely unsatisfactory."

Sixty per cent of the children were found to be in need of medical care, 58 per cent in need of dental care, 34 per cent had not been immunized against diphtheria and 21 per cent had not been vaccinated against smallpox.

A Possible Clue to a Factor in Cause of Some Plane Crashes

A possible clue to one of the factors that may have played a part in recent airplane crashes, the cause of which has mystified investigators, is suggested by C. C. Bunch, St. Louis, in *War Medicine.*

He says that "Newspaper accounts of the investigations of recent airplane accidents do not mention the hearing ability of the pilots involved. The reports of the circumstances of several accidents lead one to think that in certain instances the pilots were not following the radio beam. In that at Salt Lake City the newspaper account stated that the plane was approaching the landing field on the radio beam. A few moments later the pilot turned off his course. A storm was in progress at the time. In the recent Chicago accident it was reported that the pilot was attempting to land on the wrong runway. A snow storm was in progress."

The pilot may not be aware of any hearing loss at all, Bunch explains, and on the other hand if he did know of it might not be aware of its significance in his profession. He points out that blacksmiths' deafness has been known since 1830 and that as the steel industry developed this peculiar form of deafness became sufficiently well known to be called boiler-makers' deafness. If continuous exposure to the noise in a boiler shop results in diminished hearing, it is logical that the louder noise of airplane motors will produce hearing losses more frequently and more quickly. Another possible cause of hearing impairment suggested by Bunch is that of a condition known as static ears, particularly during electrical storms. This may be caused by static from the storm transmitted to the pilot through the earphones which are a part of the radio beam equipment. Bunch suggests a systematic study of the hearing of aviators to settle the question as to how extensive impaired hearing might be among pilots.

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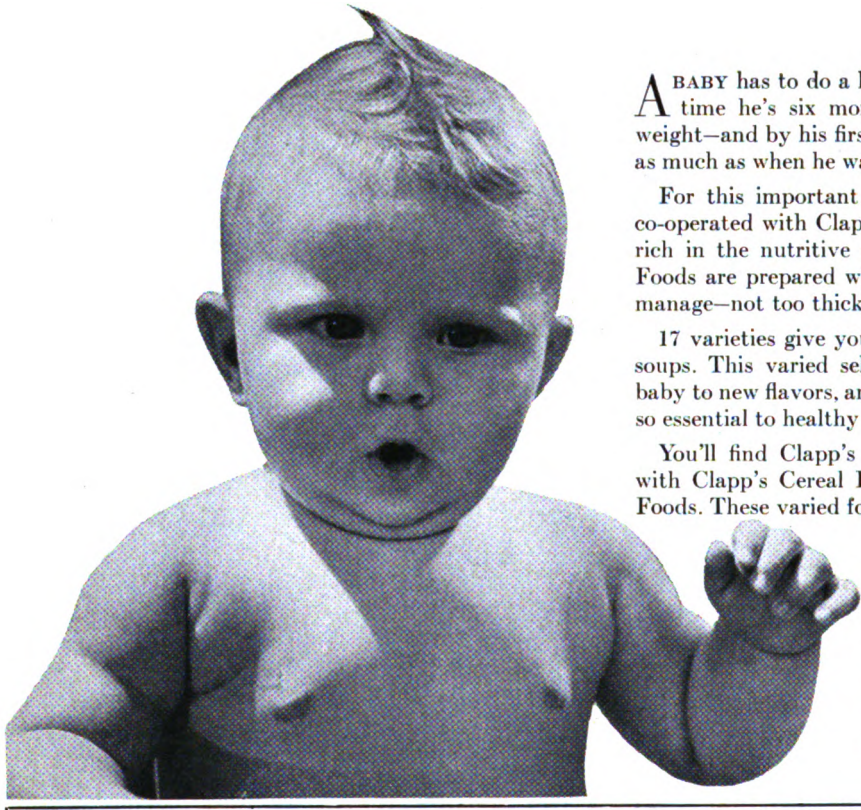
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A BABY has to do a lot of growing. And do it quickly! By the time he's six months old he ought to double his birth-weight—and by his first birthday he ought to weigh three times as much as when he was born.

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17 varieties give you a wide choice of vegetables, fruits, and soups. This varied selection makes it easy to introduce your baby to new flavors, and supply him with minerals and vitamins so essential to healthy growth.

You'll find Clapp's Strained Foods at your dealer's—along with Clapp's Cereal Food and 14 varieties of Clapp's Junior Foods. These varied foods make up "The World's Largest Baby Menu"—from which you can plan your baby's food from his first solids till he's ready for family fare.

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Clapp's considers babies' tastes in developing each new food! The experience of thousands of mothers shows that—

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At 4 Months Dick has been eating Clapp's Cereal for a month, and is just starting on Clapp's Strained Vegetables. Few home-methods of preparation keep vitamins and minerals as well as Clapp's scientific processes.



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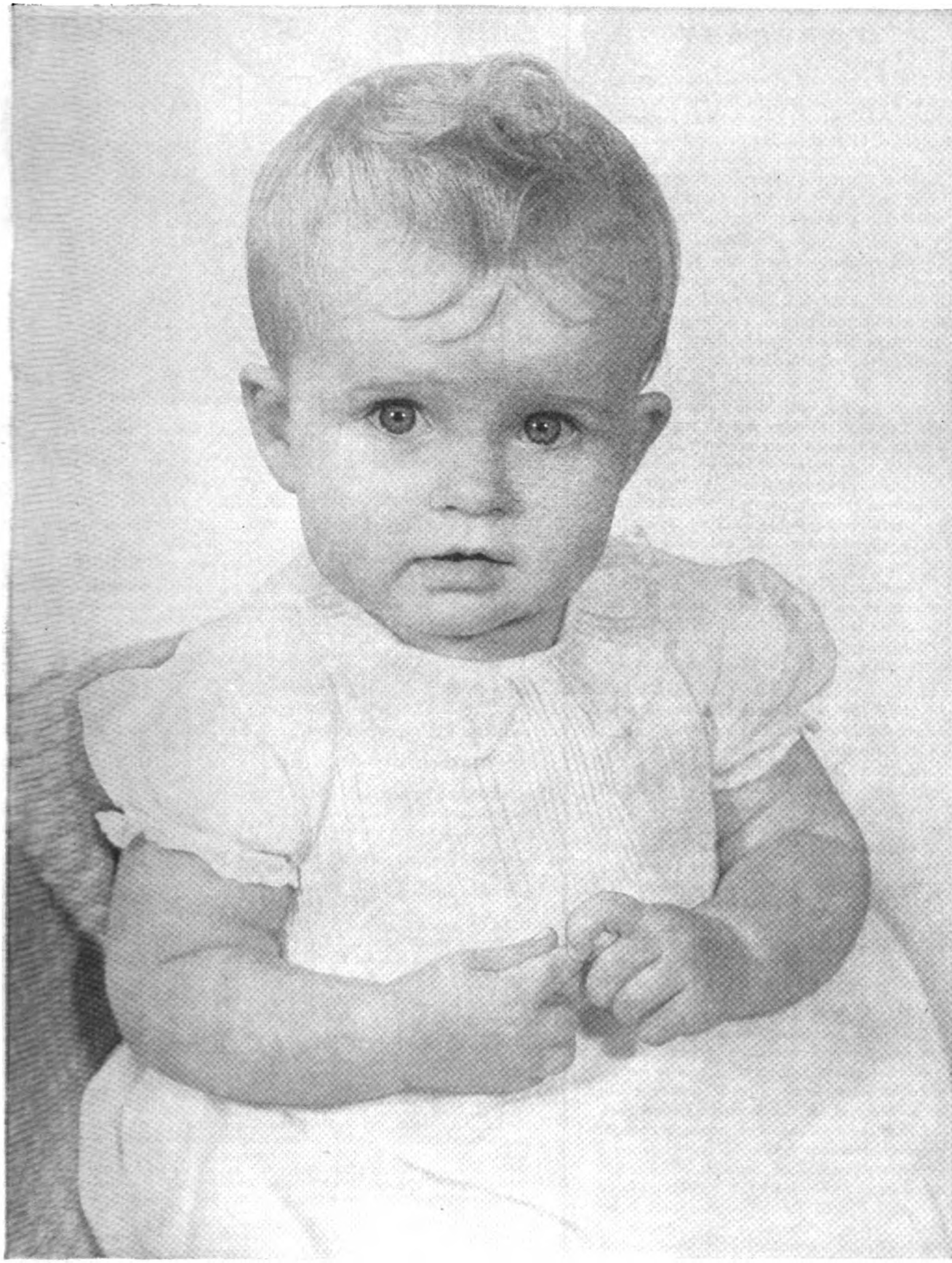
Dick's eating Clapp's Junior Foods now. He made the change from Strained Foods when he was a year old—without the slightest trouble, since these Junior Foods have the same familiar flavors he loved in the Strained Foods.

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CLAPP'S BABY FOODS

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17 VARIETIES **PRE-COOKED** **14 VARIETIES**

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FORECAST

When a normal person inhales pollen circulating in the air in the spring, early summer or fall of the year, nothing much happens. But if he is allergic to the pollen he may sneeze, have itchy eyes or develop a profuse watery discharge in his nose and eyes—in other words, he is manifesting the symptoms of hay fever.

While these allergic conditions cannot be permanently cured, the suffering of many thousands has been alleviated. Bret Ratner, M.D., explains modern knowledge and methods of treating sensitivities in "The Story of Allergy," coming in an early issue of HYGEIA.

"Employment is essential to human happiness," said the Greek physician and philosopher Galen nearly two thousand years ago. While the early idea of keeping the patient busy was applied principally to divert his mind from his troubles, the new objective is to employ the body in purposive and carefully planned activities which will have a desirable effect on the mind and assist physical function.

Occupational therapy is coming of age. Scientific applications are transforming an old method into a vital arm of treatment. "Employment Is Nature's Best Physician," by John Eisele Davis, tells how.

Rheumatic disease in children is said to "lick the joints and bite the heart." More deaths of persons under 20 years of age result from rheumatic heart disease than from tuberculosis, epidemic meningitis, measles, diphtheria, scarlet fever and infantile paralysis combined! Susceptibility to this killing disease, conditions which foster its development, symptoms and medical management are discussed for HYGEIA *by Edward L. Bauer, M.D., who concludes that "with prompt care and enduring patience these children can be returned to normal and assume their place in competition with their more fortunate contemporaries."*

Gasoline is poisonous! Modern refining methods remove fewer of the poisonous hydrocarbons in crude petroleum and add products which tend to increase toxicity. Greatly increased use of gasoline, chiefly as a motor fuel but also in connection with many industrial and manufacturing processes, has brought gasoline intoxication forward in recent years as a condition demanding the attention of physicians. Breathing air heavily laden with gasoline fumes for an extended period, the victim risks damage to the brain, nervous system, lungs, blood vessels and bronchial tubes. A recent medical report on the prevalence and treatment of gasoline intoxication will be reviewed for HYGEIA readers by Miriam Zeller Gross.

HYGEIA

THE HEALTH MAGAZINE

535 N. DEARBORN ST., CHICAGO, ILL.

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Three times his weight at birth!

In a year, your baby, too, may triple his birth weight. But there are other ways to check growth. Is he building a well-shaped head? Fine full chest? Straight strong back? Give him Squibb Cod Liver Oil in addition to a well-balanced diet!



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It's one of the first things baby learns to do. Next he'll be sitting up, walking alone. For the Vitamin D he needs to help build a well-shaped head, a strong back and straight legs, his mother, like thousands of others, gives Squibb Cod Liver Oil regularly.

how straight she sits

Her back is straight and strong, her chest is full and deep because her bones are growing right. Are you giving your baby the same chance? To help her build sound bones and teeth, give her Vitamin D – Squibb Cod Liver Oil – every day.



look for this seal . .

It's a guide to full value for your money in vitamins, and vitamins are what you pay for when you buy cod liver oil. Because Squibb's provides *twice* as many Vitamin A and Vitamin D units as a cod liver oil which meets minimum requirements of the U.S. Pharmacopeia, many mothers always ask for it. Ask your druggist for Squibb Cod Liver Oil now....*The priceless ingredient of every product is the honor and integrity of its maker.*

SQUIBB COD LIVER OIL

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"The Adcomber"

looks at Hygeia ads

Don't *"don't"* the baby when he sucks his thumb . . . bites his nails. Just apply THUM . . . a most effective control. The price? Little enough to pay! See page 226.

—◈—

Are you "good at figures"? Then you know that the right brassiere must give you "outlift" as well as "uplift." AND SURELY you know that Maiden Form is the brassiere that will do these things? Select the style for your figure type . . . page 214.

—◈—

Even the young 'uns know why Morton's salt is iodized . . . an important health rule tells them why. But should you have forgotten, the answer's "in the back of the book" . . . page 200.

—◈—

The tot who really gets around is the fellow with the smooth-running Taylor-Tot . . . outdoors a promenader, indoors a walker. So safe for the tot . . . so easy on the furniture! Pictured, page 225.

—◈—

Sinus trouble, Public Enemy No. —! If you have experienced it, or want to help prevent its unhappy occurrence in your family, you'll appreciate this excellent non-technical book: "Sinus," by a doctor. Details, page 231.

—◈—

Less worry about POUNDS, and more attention to WEIGHT DISTRIBUTION promises to do MUCH for the feminine figure . . . feminine comfort . . . feminine vitality! Have you discovered the splendid WEIGHT DISTRIBUTOR pictured on page 217?

—◈—

For the "growingest" months, your baby needs plenty of vitamins and minerals . . . varied flavors . . . a real MENU to choose from! Just for fun, check his development against that of young Dick Colyer, inside front cover.

—◈—

For home use, or in plant or office first aid kit, Mercurochrome does a clean job of protecting wounds — however trifling they may LOOK! Not painful . . . keeps indefinitely. Make Mercurochrome a rule! (As always — Back Cover.)

—◈—

A sick child? Uncertainty? An inquiring hand on your baby's forehead? *Make sure* about fever . . . The Taylor BINOC is *3 times easier to read.* See it—page 210.

THE ADCOMBER

Who's Who IN HYGEIA

MARGARET BELL, M.D., is Professor of Hygiene and Physical Education and Chairman of the Department of Physical Education for Women at the University of Michigan. The information and advice in "Answers to Practical Questions on Menstruation," page 186, are accumulated from twenty years' experience in physical education and women's hygiene following her graduation from Rush Medical School, Chicago, in 1921, and graduate work in Chicago, New York and Vienna. Dr. Bell's publications include a large number of special reports and professional studies on the subjects she discusses for HYGEIA readers in this issue.

E. K. GUBIN went to Washington in 1937 to do legislative research for several members of Congress. He has investigated and prepared reports on most of the world-shaking legislation of the past four years and collaborated with a number of Congressmen and Senators in preparing reports and articles for publication. He has the distinction of being, as far as any one has found out, the only ghost writer whose authorship is formally acknowledged in the Congressional Record.

Before going to Washington, Mr. Gubin was all San Francisco—where he was born and raised. He received his undergraduate and legal education at the University of California, practiced law there and directed playground sports for the San Francisco Y. M. C. A. "Hospital Facilities for Boom Towns," on page 200, is one of several Gubin articles which have appeared or will be published in HYGEIA.

As laboratory chief for an A. E. F. base hospital in 1918, JOSEPH FELSEN, M.D., first became interested in bacilliary dysentery, one of the three or four great military diseases. His continued interest in the subject throughout his professional career is indicated in "Dysentery," on page 190, which is one of more than eighty published works of Dr. Felsen's on intestinal infections.

As founder and director of the International Dysentery Registry and director of laboratories and research at the Bronx Hospital, New York City, Dr. Felsen supervised the production of "Hand to Mouth," an educational motion picture designed to teach the public how to prevent intestinal infections. The film is now being retitled in Spanish and Portuguese for distribution in South and Central American countries.

A few years ago, RUTH RINGLE was vocalizing for the benefit and entertainment of radio listeners around Los Angeles. A product of the San Diego Conservatory of Music and a staff artist at KFI, she began writing radio continuity and producing programs. Found she liked writing better than singing, so she took some special courses at the University of California—then gave up the microphone for the typewriter. She leans to scientific subjects, which she reports for a Washington syndicate, and gets most of her enjoyment from her son and daughter. "Adding Stamina to Scholarship," on page 234, is a nice combination of her three major interests—science, California and young people.

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"Mommy, my airplane won't fly like Johnny's..."

It isn't your fault, Son. You worked hard on your model, carefully cutting out each part, following the plans as closely as you could. You did your best. How were you to know that because of your eyes, you did it all wrong?

Many of childhood's tragedies... the heartbreak, the loneliness, the terror... are often the result of poor eyesight. Low marks in school, the derision of playmates, pitiful shyness... all may mean only that he cannot see clearly.

Give *your* child the priceless advantage of *normal* vision. *Have his eyes examined.* Only through scientific examination can you be sure that he is seeing as he should see, that poor vision is not holding him back in school... at play... in life.

And *being sure* is part of your most important job... the job of being a parent.

SOFT-LITE QUALITY

Soft-Lite Lenses are made by Bausch & Lomb from the finest materials obtainable, skilfully worked to produce the highest quality optical glass. Because of their scientific formula, these lenses benefit glare-sensitive eyes by controlling the amount of light which can reach the eye... literally putting eyes on a "light diet." Delicately flesh-toned, Soft-Lite Lenses are prescribed for children as well as adults.

There is only one Soft-Lite—identified by this certificate.



Soft-Lite Lenses

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High Time
to look to your skin

Winds of March
. . . . and sluicing rain
Stinging sleet
. . . . and sudden heat

will surely take their toll of the complexion left to look after itself in March! Left to sting and chap . . . Grow coarse of pore and cracked of lip . . . And, bad enough at any time . . . left to develop that tenacious weed of neglect . . . cosmetic irritation.

Marcelle Cosmetics will help fortify your skin against raw weather . . . stubbornly combat sleet or capricious early heat . . . provide a stitch-in-time against chap, crack and coarsening pores. Better still, Marcelle Cosmetics are hypo-allergenic. They're free of known irritants . . . will help protect you against cosmetic irritation. Known to doctors the country over . . . approved . . . prescribed . . . used by thousands of careful women.

There's no time like "March-time" to take your complexion in out of the storm and gently soothe it with Marcelle hypo-allergenic creams, soap and lotion. Then apply lovely Marcelle face powder and color accents.

Costs you only a dime to sample these five daily necessities for a l-o-n-g week: Marcelle hypo-allergenic Cleansing Cold Cream, Skin Lubricating Cream, Face Powder, Rouge and Lipstick.

Mail that dime with the coupon below today, and we'll get your new cosmetic setup to you in the nick of TIME . . . March "MARCHES ON"!



1741 N. Western Ave., Chicago, Ill.

Please send me the five sample beauty aids. I enclose 10c.
Blonde.... Brunette.... Auburn....

NAME.....H-3-42

ADDRESS.....

LETTERS FROM Readers

More Indian Lore

To the Editor:

I do not believe Professor Laird's explanation is adequate justification for his arbitrary statement (*that white children are brainier than Indians*—ED.). Dr. Grace Arthur of St. Paul has recently completed an intensive study of several groups of Indian children, and concludes that as compared with averages for a middle-class white population, the Indian boys and girls tested at high school level are definitely superior.

We have a great deal of evidence that the ability of a child to read and write fluently the language in which a test is written is an important factor in determining the resulting score. . . .

I am afraid that Mr. Laird's contribution is smart rather than valid.

WILLARD W. BEATTY

Department of the Interior
Office of Indian Affairs
Washington, D. C.

Articles for Young Mothers

To the Editor:

I have a baby 4 months old and I am very much interested in reading articles dealing with baby's health through the early months. Do you expect to have any more articles on this subject soon? I do want to say that your magazine has been very helpful to me and my family.

MRS. H. ELLIOTT

Evanston, Ill.

A series of authoritative articles on infant care and child health in the preschool years is scheduled to begin in the May issue of HYGEIA. —ED.

Unfamiliar Terms

To the Editor:

I am not familiar with two of the terms used in an article on infantile paralysis, and wish you would write explaining their use and definition. These two terms are "fomites" and "missed case." If you can give me a definition of what their meaning is I shall be grateful.

HENRY GILBERTSON

Pine Ridge, S. Dak.

Fomites are the clothing, books, toys, towels or other inanimate objects handled by a patient which may transmit a contagion. A missed case is an unrecognized case of a communicable disease, commonly believed to be largely responsible for the spread of epidemics.—ED.

Chewing Gum

To the Editor:

I was very much interested in the article, "Shall She Chew Gum?" in the November HYGEIA. Students nowadays want to chew gum all day, in school as well as out, while reciting in classes as well as while studying quietly and alone. One of the greatest problems in our senior high school is this one of gum-chewing. Some of the teachers have given up trying to fight it, so it is allowed—or at least tolerated—in some rooms.

Isn't there some line to be drawn on the side of moderation for health's sake as well as for appearances and plain courtesy? What about muscular fatigue, digestive disturbances from a continual flow of saliva, and other aspects of the problem from this angle? Is it a drug—isn't overindulgence in gum-chewing just as habit forming as cigaret-smoking, etc?

RUTH E. W. PETERS

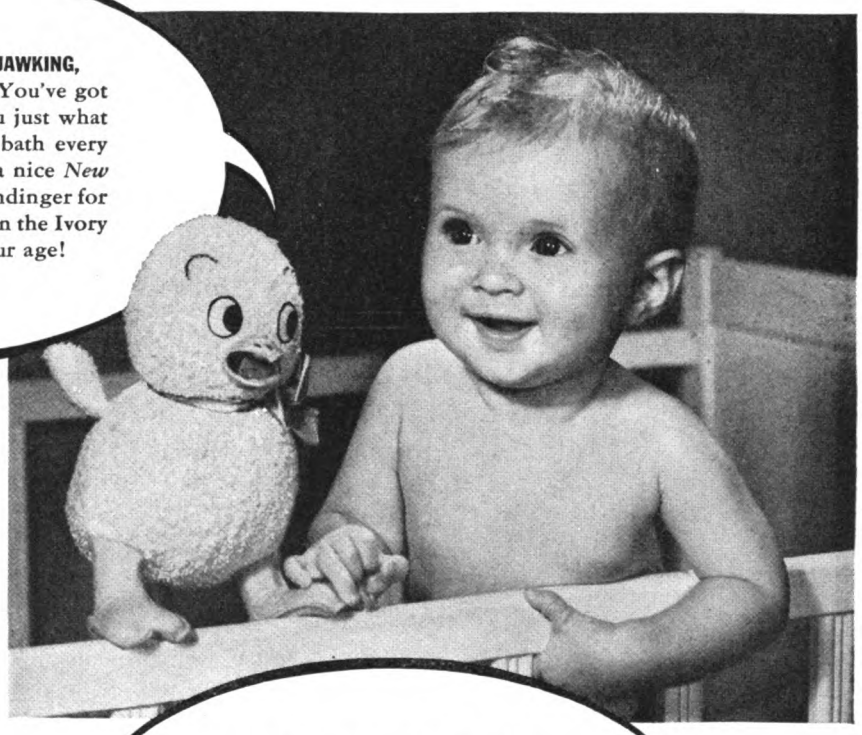
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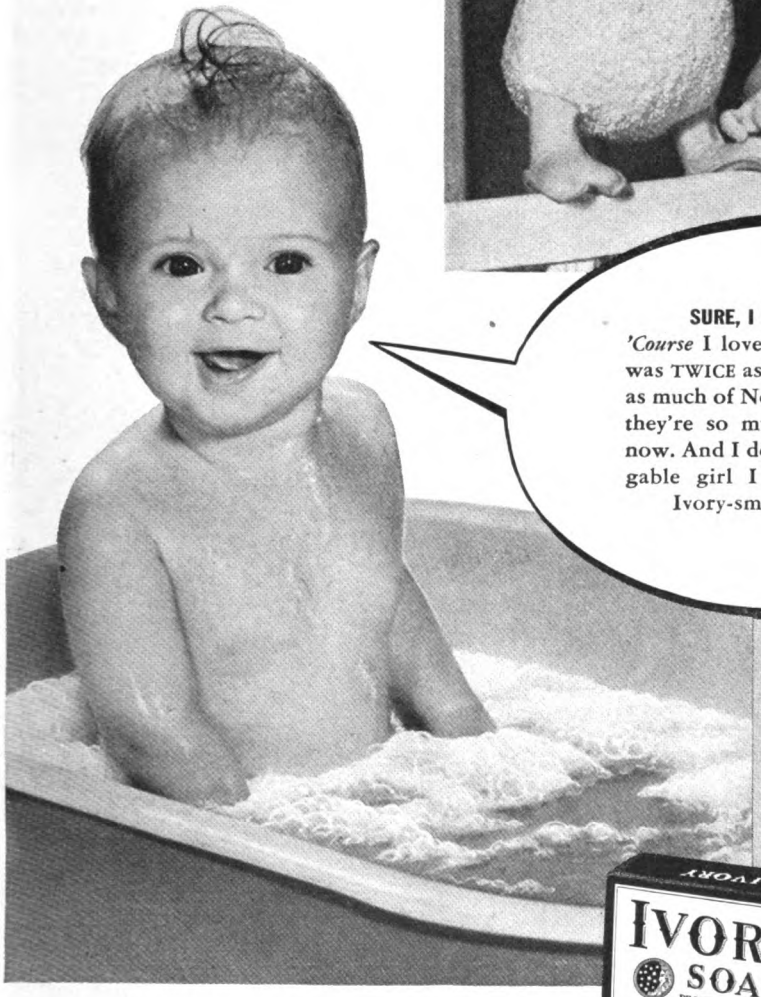
There is not any scientific evidence to indicate harmful effects from chewing gum unless, as with other substances, it is used to great excess.—ED.

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"Lucky girl! You've got a mommy who takes her doctor's advice!"

UNDERSTAND NOW, I'M NOT SQUAWKING, but you don't know your luck! You've got a smart mommy who gives you just what the doctor ordered—an Ivory bath every day. Yeah . . . and you've got a nice *New* "Velvet-Suds" Ivory, too. A humdinger for mildness! Fact is, it's milder than the Ivory your big brother had at your age!





SURE, I KNOW I'M IN VELVET! *'Course* I love my New Ivory. I wish I was TWICE as big so I could use TWICE as much of New Ivory's velvet suds! . . . they're so much richer and creamier now. And I don't s'pose I'd be the huggable girl I am without my velvet, Ivory-smooth skin—do YOU?

Of course, MILDER than imported castiles!

Imported olive oil castiles are far below Ivory's high standard of mildness. Such soaps tend quickly to become rancid. In a recent examination of imported castiles bought in 6 cities, 42 out of 44 showed definite evidence of rancidity . . . an irritating factor in a skin soap.

Ivory is uniformly mild, milder than any other widely advertised floating soap. Contains no dye, medication, or strong perfume that might be irritating.

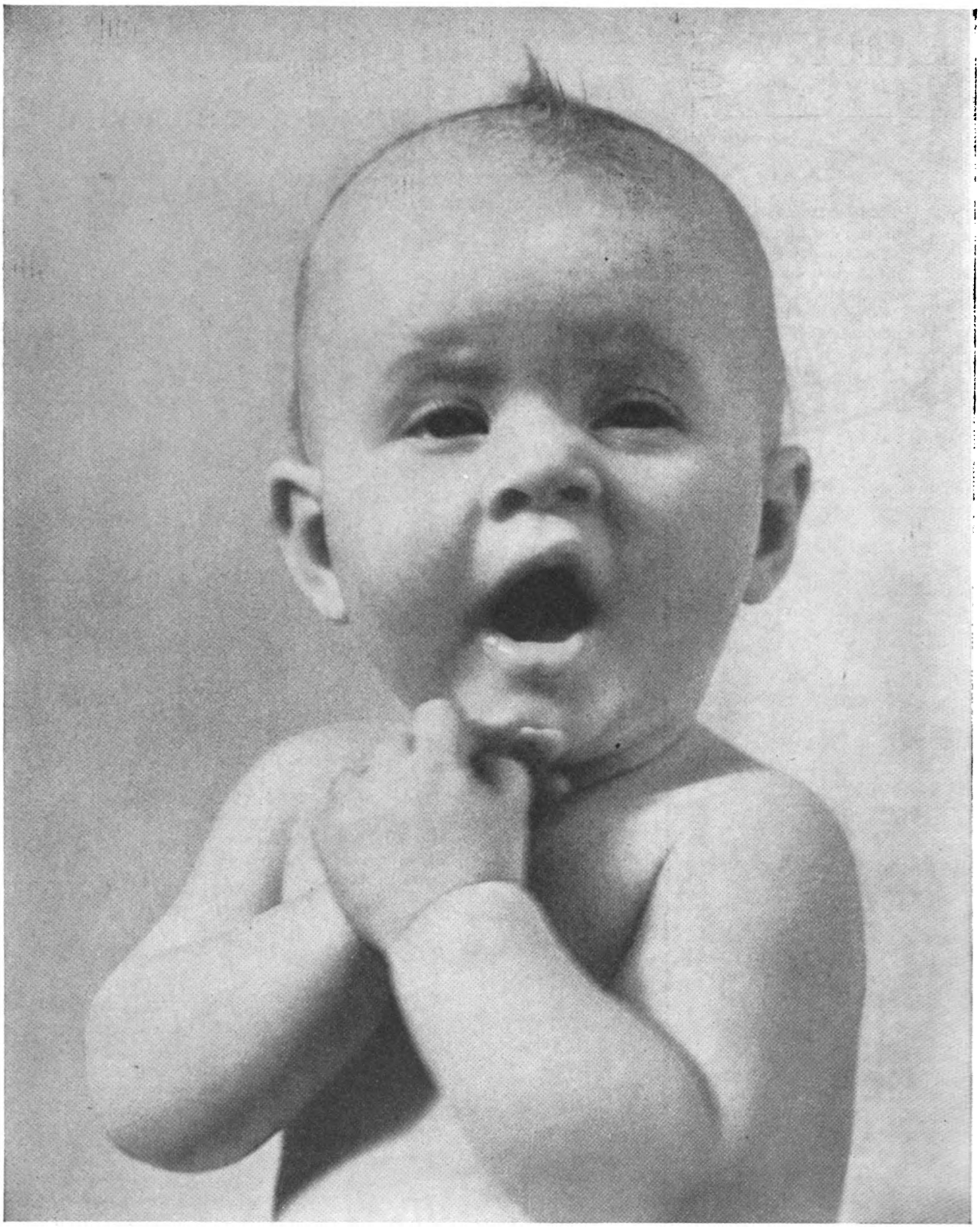
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New Velvet-suds IVORY SOAP

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Brown Photos

In connection with the observance of next May 1 as Child Health Day, the President of the United States has specifically requested the cooperation of parents, physicians, hospitals, dispensaries and health departments to the end that every child in the United States as soon as possible after reaching the age of nine months shall be vaccinated against smallpox and immunized against diphtheria. Action against these diseases is positive, safe and easy.

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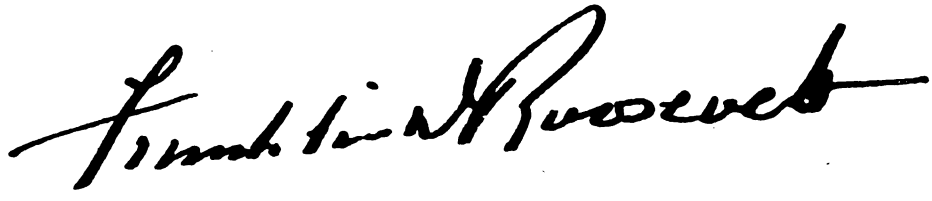
May Day Objective—Immunization

By the President of the United States of America
A PROCLAMATION

WHEREAS *the Congress by joint resolution of May 18, 1928 (45 Stat. 617), has authorized and requested the President of the United States to issue annually a proclamation setting apart May 1 as Child Health Day:*

NOW, THEREFORE, *I, Franklin D. Roosevelt, President of the United States of America, in recognition of the vital importance of the health of children to the strength of the Nation, do hereby designate the first day of May of this year as Child Health Day. And I call upon the people in each of our communities to contribute to the conservation of child health and the reduction of illness among children by making every effort to the end that before May Day—Child Health Day, children over 9 months of age be immunized against diphtheria and smallpox, the two diseases for which we have the surest means of prevention.*

IN WITNESS WHEREOF *I have hereunto set my hand and caused the seal of the United States of America to be affixed.*



ON THE FIRST DAY of May in England baskets of flowers were hung on doorknobs by children who expected sweetmeats in return. This day, celebrated as May Day in England, was designated as Child Health Day in the United States almost twenty years ago by the American Child Health Association. Special attention is given to the health of babies and young children with special reference to feeding problems, health supervision of healthy babies, immunizations and correction of physical defects. When the American Child Health Association terminated its work, the May Day program was transferred to the United States Children's Bureau.

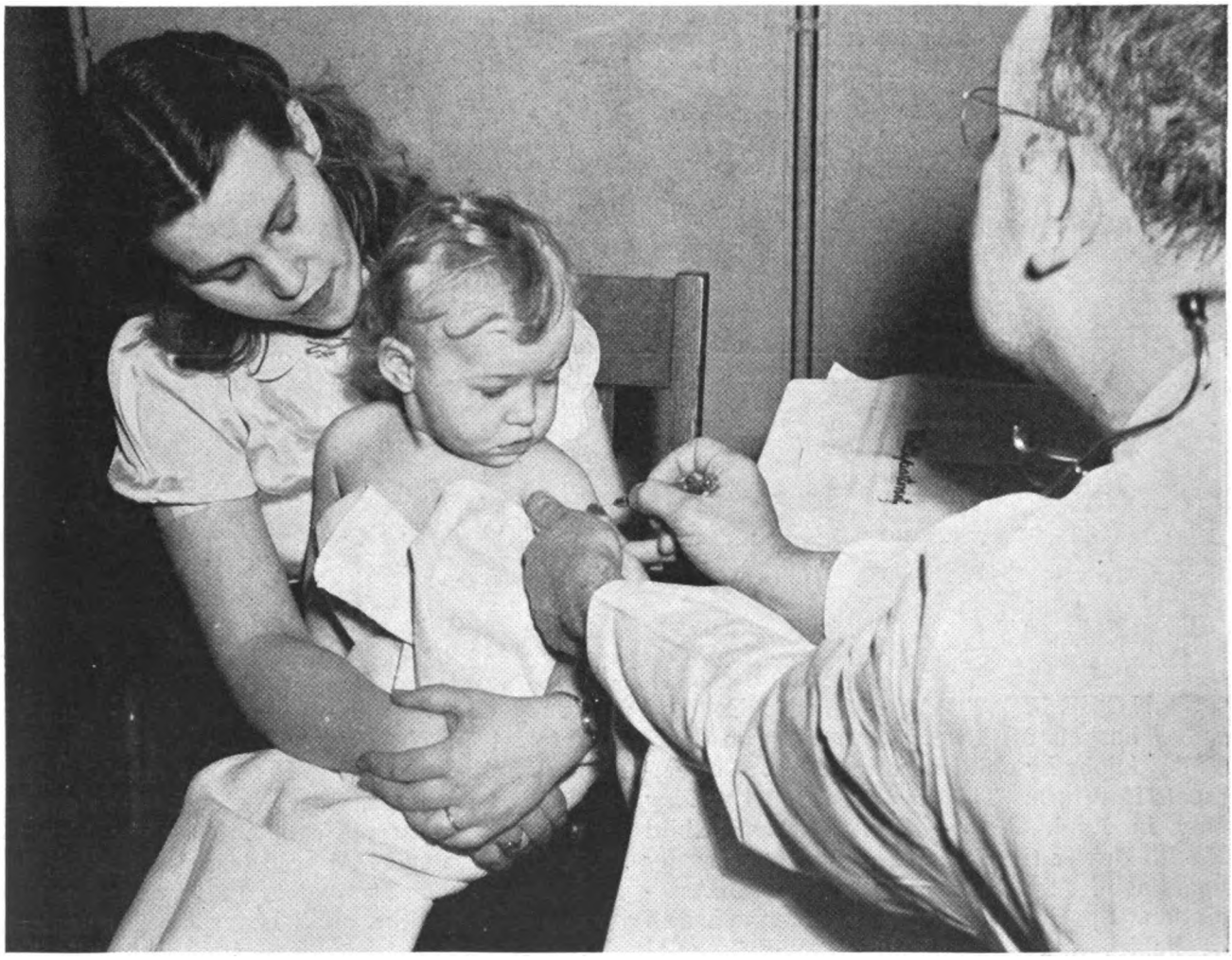
By act of Congress in 1928 the President of the United States is authorized and requested annually to proclaim May 1 as Child Health Day. The President's proclamation for 1942, reproduced on this page, calls on the people of the United States "During this national emergency due to war," not only for a general interest in child health, but for a specific accomplishment. The President asks that the doctors, hospitals, dispensaries, health departments and parents cooperate before May 1, 1942, to the end that every child in the United States, as soon as possible after he reaches the age of 9 months, shall be vaccinated against smallpox and immunized against diphtheria.

In furtherance of this objective, *The Journal* of the American Medical Association has transmitted the President's proclamation and message to the physicians of the United States. HYGEIA herewith transmits it to its readers, calling on them for their cooperation. This specific objective is practical and important. These are serious diseases, but they are diseases for which prevention is definite, safe, easy and economical. There is no practical reason why the President's objectives should not be attained.

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Prevention of Diphtheria

By WILLIAM I. FISHBEIN



The modern method of producing artificial immunity to diphtheria consists of giving two or sometimes three injections of toxoid when the baby is nine months old.

MOST PERSONS fail to recognize that diphtheria is a respiratory disease, spread much as are colds. Diphtheria germs, which are thrown into the air during coughing and sneezing by some person who either has the disease or is a carrier of the diphtheria germs, are inhaled by others in close proximity. A carrier of diphtheria is a person who, though not affected with the disease, has the organisms which produce it in his nose or throat.

Diphtheria has been steadily decreasing in the United States since the latter part of the nineteenth century. About 1923, artificial immunization against diphtheria became widespread. After this time, the decline of diphtheria was accelerated. Other natural factors undoubtedly have *(Continued on page 215)*

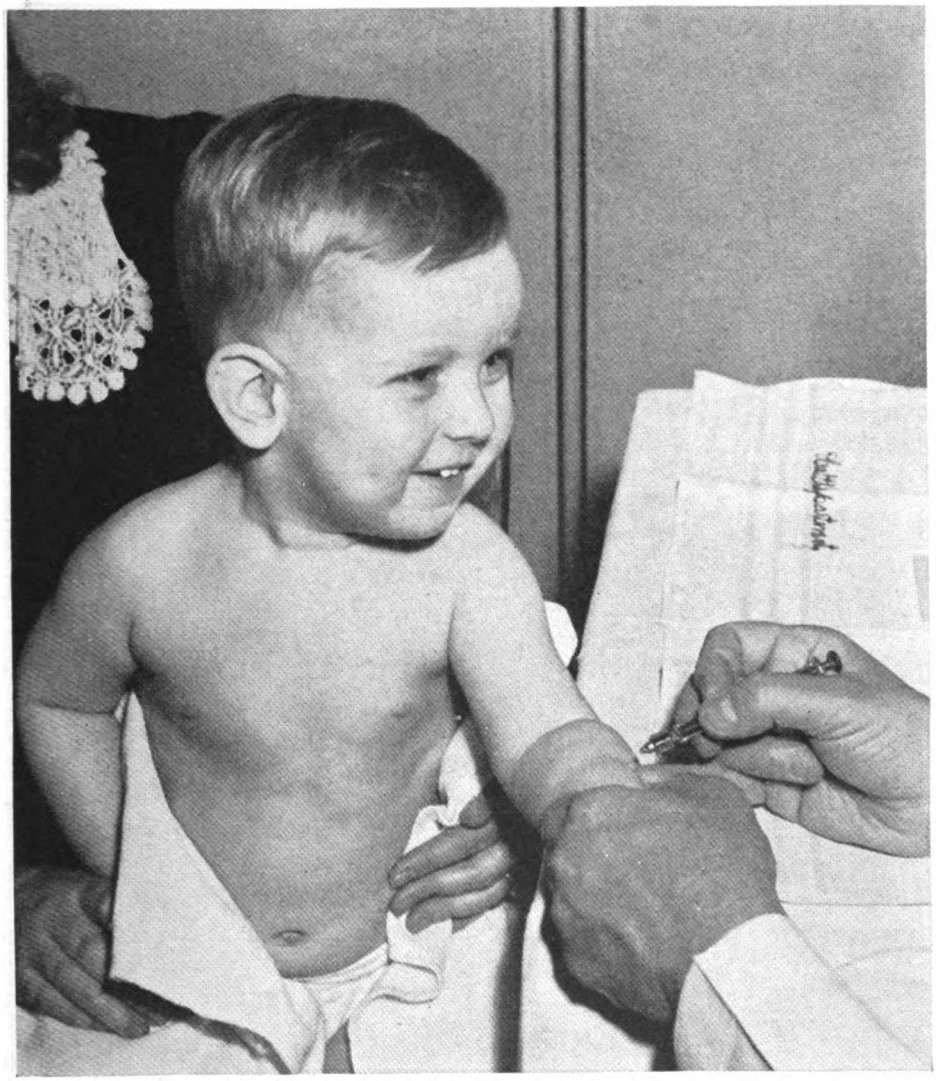
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Protect Against Smallpox

By DAVID DIETZ

DEATH IS A HIGH PRICE to pay for carelessness. The whole nation was rightly incensed at the loss of American life in the Japanese surprise attack upon Pearl Harbor. Yet many a person who has loudly criticized the deposed command of our Hawaiian forces is guilty of equally great carelessness in his own life and runs the risk of a death far more terrible than that dealt by a machine gun bullet or burst of shrapnel. He runs the risk of death from that most loathsome of diseases, smallpox.

Carelessness and ignorance are the only two reasons for any one dying from smallpox today. For there is a complete and foolproof protection against the disease, a protection as simple as it is dependable. It is, as every one knows, vaccination. At the hands of a competent physician, it is 100 per cent safe, and it takes less than five minutes to perform.



The Schick test tells whether or not a person is immune to diphtheria. A drop of greatly diluted toxin is injected: absence of reaction indicates immunity

And yet, in the United States of America, in the year 1942, people insist on exposing themselves to the risk of smallpox. It is one of the paradoxes of the twentieth century.

Only a moment's glance at the statistics comparing the experiences of those states requiring compulsory vaccination with those states in which it is voluntary is needed to establish the efficacy of vaccination. The state of New Jersey, with a population of 4,400,000 and a compulsory vaccination law, had no cases of smallpox between

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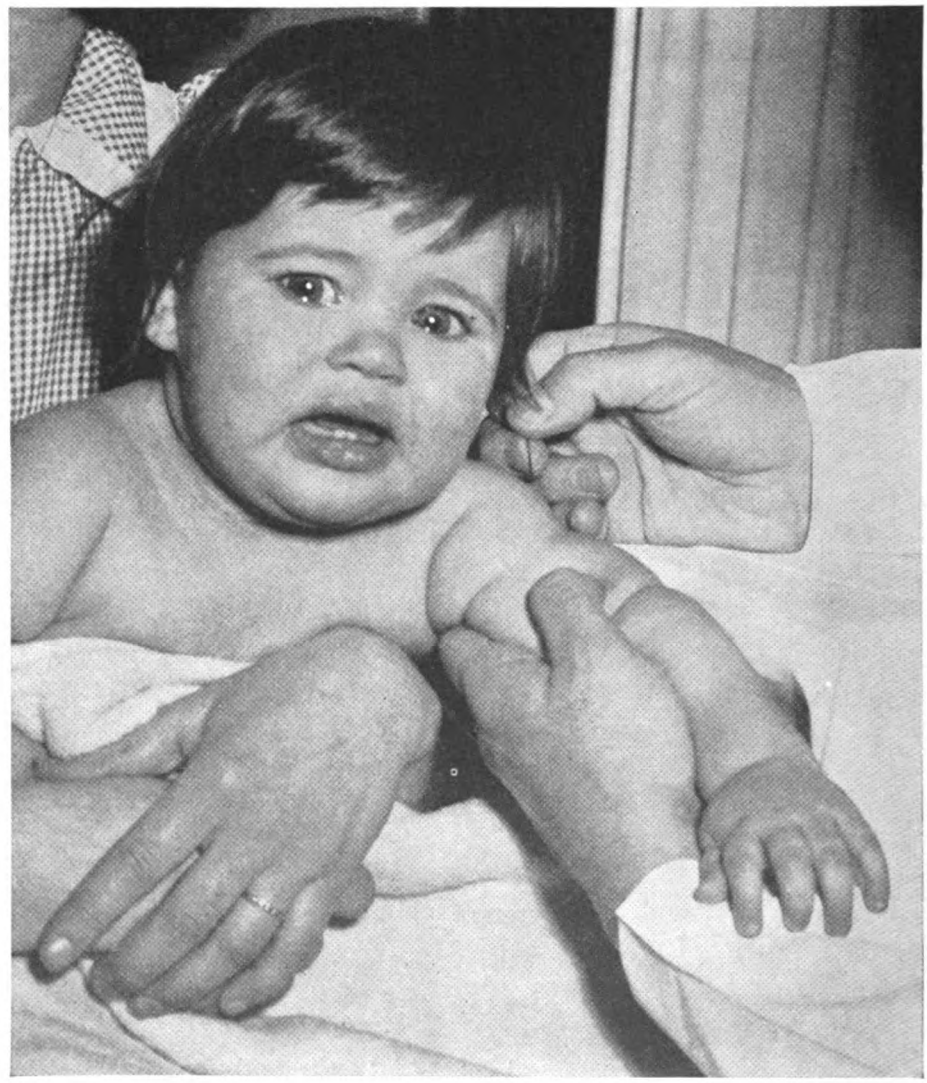


the years 1931 and 1939. In that same period, the states of North Dakota, South Dakota, Montana, Idaho, Oregon, Wyoming, and Utah, with a combined population less than that of New Jersey, reported 12,666 cases of smallpox. None of these states has compulsory vaccination.

The fact is that wherever laws requiring vaccination for school attendance have been in force for a period of years, smallpox has practically disappeared, while nearly all the cases reported in recent years have ocurred in the sections where there are no such laws.

From 1933 to 1937, thirteen American states with compulsory vaccination laws had a yearly average of 0.57 cases of smallpox per 100,000 of population. Twenty-two states in which vaccination is voluntary had 14.1 cases per 100,000.

The plain and incontrovertible fact of the matter is that smallpox can be eradicated in any community that adopts compulsory vaccination. The



The first vaccination for smallpox was performed in 1796 by an Englishman, Edward Jenner. The patient was James Phipps, an 8 year old boy (above). Today, a method of vaccination known as acupuncture (right) leaves the patient with a smaller scar and diminishes the possibility of secondary infection. In the acupuncture method, the needle is placed at an angle to the surface of the skin, which is punctured lightly 10 or 15 times, permitting the vaccine to enter.

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spread of the disease depends chiefly on the number of unvaccinated persons in a community.

Every person in those states which do not require compulsory vaccination can decide for himself that he is not going to be one of the group that will swell the statistics of sickness and death from smallpox. He can protect himself by vaccination.

It is particularly important that small children be given this protection. Now that the nation is at war, when every resource and all the medical personnel available is needed for the war effort, it is doubly important that we stop the waste of unnecessary sickness and the needless burden thereby placed on the hospitals, nurses, and medical men of the nation. Every parent, because of his love for his child and his desire to keep the nation healthy, should immediately have his child vaccinated if that simple procedure has not already been attended to.

A few decades ago the common method of vaccination was to apply vaccine to a small area of the skin, usually on the upper arm, and then to make several small scratches with a needle, thus causing the vaccine to enter the skin. Today, however, two other methods, known as the acupuncture and the multiple pressure methods, are preferred. These methods result in a smaller scar and allow less opportunity for secondary infection.

NEW METHODS

Acupuncture is accomplished by lightly puncturing the skin 10 to 15 times, holding the needle at an angle to the skin surface. In the multiple pressure method, the physician holds the needle like a lead pencil nearly parallel to the skin and bears down lightly upon it. This causes a few cells of the skin to be penetrated with each pressure. An area of skin one eighth of an inch in diameter is sufficient for either of these two methods.

While infants may be safely vaccinated at the age of one week, it is more advisable to wait a few months. It is highly desirable, however, that vaccination take place before the first six months, and in no case should it be postponed beyond the first birthday. It is advisable to have a child revaccinated just just before he enters school, and the vaccination should be repeated again in the event of an outbreak of the disease in the community.

The story of smallpox through the ages is one of the most tragic accounts of human suffering, and the discovery of vaccination constitutes one of the brightest pages in history. It is impossible for the citizen of the twentieth century who has not read medical history to realize what the ravages of this disease have meant.

HISTORY OF SMALLPOX

Records of the disease extend back as far in China as 1000 B. C. Outbreaks of it in Europe were common throughout the Middle Ages and into more recent centuries. In the eighteenth century the disease was so prevalent in England and its pitted scars so universal that their absence in a person became a mark of identification. An advertisement in a London newspaper of 1776 describing an escaped convict lists the fact that his face was not pock-marked.

Thomas Macaulay, the great historian, wrote of the times, "Smallpox was always present, filling the churchyards with corpses, tormenting with constant fears all whom it had not yet stricken, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, making the eyes and cheeks of a betrothed maiden objects of horror to the lover."

As early as 1674, attempts were made to combat the menace of smallpox in Turkey by a method known as inoculation which was subsequently introduced into England. This must not be confused with vaccination. It consisted of deliberately contracting smallpox itself by introducing matter from a diseased person's skin into a scratch or cut. The idea was to contract the disease from a mild case in the hopes of having an equally mild case. The method became widely popular and among its advocates were Louis XVI of France, Catherine of Russia, and on this side of the ocean, the Reverend Cotton Mather of New England.

The English physician, Edward Jenner, as is well known, performed the first vaccination for smallpox upon 8 year old James Phipps in the year 1796.

By that time there had been much talk of the fact that the mild disease of cowpox, often contracted by dairymaids from contact with their bovine charges, resulted in immunity to smallpox. For his first vaccination, Dr. Jenner took matter from the hand of a dairymaid named Sarah Nelmes.

It is now generally believed that the virus which causes the dis- *(Continued on page 196)*

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Iodine,

DO YOU KNOW that when your doctor prescribes iodized salt for your children to prevent goiter he is doing something that the Chinese practiced fifteen hundred years before Christ? Do you know that if a famous French physician had observed carefully what happened to a patient with toxic goiter for whom he wrote a wrong prescription, thousands of lives might have been saved? The use of iodine in the treatment of goiter illustrates well how man's instinct frequently leads him, unwittingly, along the right path in the treatment of disease. This substance has been the unknown active principle in many of the therapeutic concoctions which have been used for centuries in the treatment of diseases of the thyroid gland.

Goiter presents a world wide problem and affects not only man, but also domestic animals. The prevention of simple goiter means the elimination of endemic cretinism (decreased function of the thyroid gland), which in the past has caused great economic loss in both man and domestic animals. Its prevention also appears to have resulted in a reduction in the incidence of nodular goiter (toxic and non-toxic). With a reduction in the incidence of nodular goiter we may presumably reduce the incidence of thyroid cancers, for careful work has shown that most malignant tumors of this gland develop from pre-existing nodules. It therefore represents a public health problem of the first magnitude in many parts of the world.

Picture to yourself the "cretin"—the child with the absent or underdeveloped thyroid, who is lethargic, dwarfed, pale, and stolid. His lips and tongue are thick, the skin and hair dry, the abdomen protruberant, the mental condition that of idiocy or imbecility—in short, the picture of arrested development both physically and mentally.

Underactivity or overactivity of the thyroid gland occurs in thousands of gradations — from the dwarfed, pale and mentally deficient cretin to the highly nervous, overactive, emotionally unstable victim of toxic goiter. Use of iodine in the treatment of these conditions was started accidentally!

Visualize, if you can, the patient with a toxic goiter—nervous, tremulous, overactive, with palpitation, emotional instability, increased perspiration, and prominent eyes. Between these two types are all gradations produced by underactivity and overactivity of the thyroid. The treatment of these conditions has been revolutionized by the proper use of iodine.

Man blundered along for thousands of years using iodine-containing substances in the treatment of goiter—the best known of which were sea sponge and the ash derived from it. Unknowingly, too, certain salt deposits were found to be more beneficial than others—these, of course, were shown later to have larger quantities of iodine. The element itself was not discovered until 1812, and shortly thereafter was found to be present in sponge and seaweed. It was immediately taken up by many physicians, but because of their overenthusiasm and lavish and improper administration of the drug, many mishaps occurred. Iodine, thereupon, fell into a disrepute from which it never fully recovered until nearly a century had passed.

Some thirty years ago, Dr. David Marine and his associates demonstrated that goiter in brook trout could be prevented by introducing iodine periodically into the water. It was but

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Sea Sponge and Goiter

By J. M. MORA

a short step, then, to its use in man, and in 1918 Dr. Marine provided the most impressive proof that iodine can prevent goiter in certain districts. In his now famous experiment in Akron, Ohio, he demonstrated that of 2,190 nongoitrous children who were treated with iodine only 5 were found to have a goiter at the end of a year, whereas of 2,305 similar children who received no iodine, 495 developed goiter. In Switzerland, shortly thereafter, iodized salt was made compulsory for all domestic purposes throughout the Canton of Appenzell, and after a lapse of three years, no congenital goiter was found among children whose mothers had used iodized salt during pregnancy, whereas before this prophylactic measure was instituted 50 per cent of the newborn babies had thyroid enlargements.

The use of iodine for the prevention of goiter is now well established. Where goiter is prevalent, small amounts of iodine are given to children in the form of iodized salt or chocolate covered tablets. Similar small doses are also given to pregnant women, not only to prevent increase in size of the thyroid (which often enlarges during pregnancy) but to diminish the frequency of thyroid enlargement in the newborn.

Iodine has another extremely important use —its administration to patients preparatory to the removal of a toxic goiter. Until very recent times operation for this condition was a formidable undertaking, not only because of the technical difficulties involved, but because of the profound constitutional disturbances which so frequently followed in the wake of the operation. The mortality was high, even forbidding, and it was natural that physicians turned their attention to the medical treatment. The use of iodine had fallen into disrepute, and it was indeed its evil reputation which was responsible for the famous therapeutic error committed by Trousseau in 1863. This French physician, while treating a patient with toxic goiter, wanted to give her tincture of digitalis, but, preoccupied with the idea that there would be some danger in giving iodine, wrote iodine instead of digitalis on his prescription, so that the patient took iodine for a fortnight. He realized his mistake at that time and substituted digitalis for the iodine. Strangely enough, Trousseau observed that his patient was greatly improved while taking iodine, but returned to her former state as soon as the drug was stopped. Had this great physician been more alert to the importance of his observation and had he not discouraged the use of iodine in toxic goiter the whole treatment of this disease might have been set ahead by more than half a century, and many lives might have been saved.

As it was, progress was slow, and despite encouraging reports from time to time, it remained for Drs. Plummer and Boothby of the Mayo Clinic to put the iodine treatment of toxic goiter "on the map." In 1924, after long and careful study (including determinations of the basal metabolic rate), they reported a series of 400 patients *(Continued on page 202)*

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This brief, practical test will give you some idea of the accuracy of your present first aid knowledge and judgment. Nothing less than a perfect score is satisfactory. Measure yourself, then look up the right answers, given here By KATHARINE F. WELLS

How Well Do You Know Your

DO YOU KNOW YOUR FIRST AID? If war should bring disaster to your community, would you be able to help with the injured? Or if some one in your family were to fall from a stepladder and break a leg, or cut a finger severely with the bread knife, or tip over a saucepan of boiling water, would you know what to do? Even more important, would you know what *not* to do? Possibly you feel confident that, after all, it is only a matter of common sense and you are sure you are level headed enough to keep calm and do whatever seems to be the obvious thing at the moment. It may be, however, that you are overconfident in your judgment, in your instinct for doing the right thing in an emergency. First aid is not merely a matter of common sense; it is a series of technics which one learns by studying reliable sources. Many doctors can give you good advice concerning first aid, but few can spare the time to teach you the actual technics. The best way to get these is to take a reliable course in first aid, preferably the American Red Cross standard course, taught by a certified instructor.

Here is a short first aid test designed to give you some idea of the accuracy of your present knowledge and judgment. According to the usual academic standards if you get seven out of ten right, or 70 per cent, you pass the test. Yet you should not be satisfied with this. Suppose one of the three problems you could not solve correctly suddenly became a real life situation? What good then would your 70 per cent knowledge of first aid be? In a field such as this, where a test item may suddenly turn into a question of life or death, one should be satisfied with nothing less than a score of 100 per cent. Try these sample questions and see how good your score is.

In each of the following questions several answers are suggested. Decide which is the best answer in each case and put a check in front of it. Do not check more than one answer to a question.

1. While making boiled frosting your sister upsets the saucepan, scalding herself severely. Which of the following would you put on her burns?
   (a) Butter. (b) Lard or similar shortening. (c) A cloth wrung out in a solution of luke warm water and baking soda. (d) A cloth wrung out in a solution of luke warm water and baking powder. (e) A cloth wrung out in a solution of luke warm water and washing soda. (f) A cloth wrung out in a solution of luke warm water and salt.

   What would you do for a skiing companion whose ear suddenly appeared to be a peculiar grayish white color?
   (a) Rub it vigorously until there is color in

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FIRST AID?



it. (b) Hold a handful of snow against it. (c) Hold your hand against it. (d) Hurry him to a house and have him hold a hot water bottle or hot cloth against it.

3. You are driving behind a car which suddenly knocks a man down and then speeds away. No one else is around. What is the *first* thing you should do?
(a) Follow the car to get the license number. (b) Get the man into your car and rush him to a hospital. (c) Bandage his wounds. (d) Examine him to discover the seriousness of his injuries. (e) Give him a stimulant. (f) Give him artificial respiration.

4. A boy cuts his finger so badly that quantities of blood are spurting from the cut. What would you do for him?
(a) Make him stand up, holding his arm as high as possible. (b) Make him sit down. Tie a tight bandage or tourniquet around his forearm. (c) Make him lie down.

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With one hand hold his arm up high, and with the other press your fingers against the veins in his wrist. (d) Make him sit down. Tie a tight bandage or tourniquet around his upper arm. (e) Make him lie down. With one hand hold his arm up high, and with the other press your fingers against the inner side of his upper arm.

5. A woman shuts the car door on the tip of her finger. She leans against the car, becomes very white, has perspiration on her forehead, trembles, breathes irregularly, and looks dazed. What would you do for her?
(a) Have her sit down while you put a compress and bandage on her finger. (b) Have her lie down on the car seat with her knees bent. Cover her with a blanket and give her a drink of hot tea. (c) Have her lie down on the car seat with her knees bent. Put a cold cloth on her head and give her a drink of cold water. (d) Have her sit in the car and take her to the doctor. (e) Have her sit down, give her a drink of water and some smelling salts.

6. A person is overcome by the heat and shows the following symptoms: vomiting, dizziness, pallor, profuse sweating, extreme weakness. What would you do for him?
(a) Make him lie down with his head raised; put cold cloths on his head; cover him with a blanket. (b) Make him lie down in the shade with his head raised; put cold cloths on his head; wrap him in a wet sheet. (c) Make him lie down with his head level with his body; cover him with a blanket; give him a stimulant, such as aromatic spirits of ammonia in water or a cup of coffee. (d) Make him lie down with his head level with his body; wrap him in a wet sheet; give him a stimulant, such as aromatic spirits of ammonia in water, or coffee.

7. Another person is overcome by the heat and shows these symptoms: skin hot and dry, partial unconsciousness, dizziness, pain in the head, red face. What would you do for him?
(a) Make him lie down with his head raised; put cold cloths on his head; cover him with a blanket. (b) Make him lie down in the shade with his head raised; put cold cloths on his head; wrap him in a wet sheet. (c) Make him lie down with his head level with his body; cover him with a blanket; give him a stimulant, such as aromatic spirits of ammonia in water, or coffee. (d) Make him lie down with his head level with his body; wrap him in a wet sheet; give him a stimulant, such as aromatic spirits of ammonia in water, or coffee.

8. A woman puts on a dress recently returned from the cleaners and lights a cigaret. The dress bursts into flame and she runs out of the room screaming. What would you do first?
(a) Get a pail of water from the kitchen and throw it on her. (b) Run to the garage for the fire extinguisher and use it on her. (c) Wrap a blanket around her while she is standing. (d) Throw her to the floor and wrap a rug or blanket around her. (e) Go to the door or window and call for help. (f) Telephone the fire department.

9. An elderly woman falls from a stepladder. She is unable to move her left leg and complains of severe pain near her hip. She is suffering from shock. You are in a summer cottage with no telephone and no near neighbors. What would you do before going for a doctor?
(a) Tie a padded board or stick to her side, securing it with at least one bandage around her waist and one around her thigh. Give her a drink of hot tea or coffee. (b) Help her to a couch or bed. Cover her with a blanket and give her a drink of hot tea or coffee. (c) Put her in as comfortable a position as possible, without letting her get up. Brace her leg with pillows, cover her with a blanket, and give her a drink of hot tea or coffee. (d) Straighten her leg and exert traction on it by pulling it gently but firmly at the ankle. Then release it and brace it with pillows. Cover her with a blanket and give her a drink of hot tea or coffee.

10. In general, when should a tourniquet be used to control hemorrhage?
(a) In any case of arterial bleeding. (b) Only after digital pressure has proved inadequate. (c) In case of venous bleeding only. (d) In all cases, after the bleeding has been temporarily checked by digital pressure.

ANSWERS AND EXPLANATIONS ON PAGE 228

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First Aid Rules for Civilian Defense Workers

The job of the Civilian Defense worker is to get injured people out of the danger zone as quickly and as safely as possible, and without adding to their suffering, says the American Red Cross, whose instructions to civilians in emergency first aid include the following ten rules:

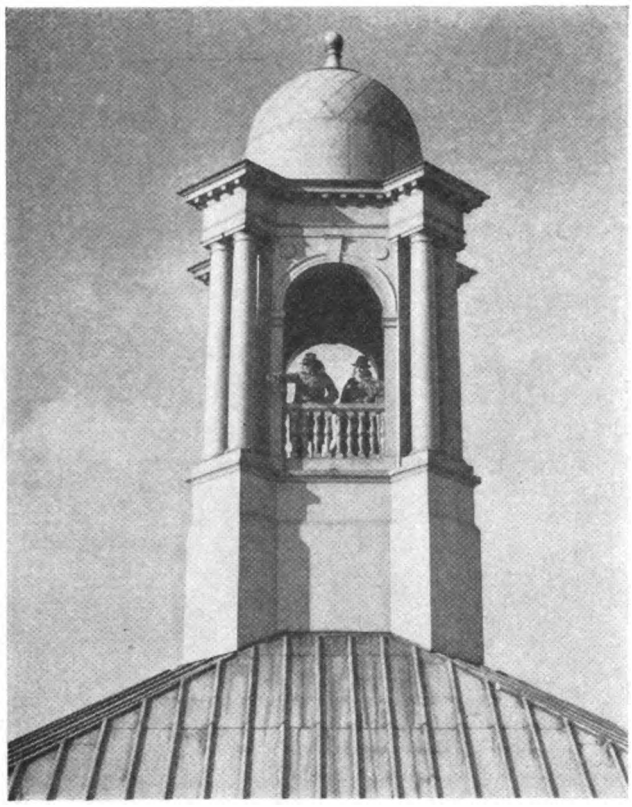
1. Keep the victim lying down.
2. Examine for injuries if not clearly seen.
3. Give immediate attention to serious bleeding, asphyxia and poisons.
4. Keep victim warm and yourself cool.
5. Call a physician.
6. Do not give an unconscious person anything to drink.
7. Keep crowd away.
8. Make injured comfortable and allay his fears.
9. Procure proper transportation.
10. Get name and address before victim becomes unconscious.

After completing advanced training in the recognition, segregation and first aid care of disaster victims, field workers in the Civilian Defense Program of the American Red Cross are equipped with first aid kits containing:

4 2-inch bandage compresses
2 3-inch bandage compresses
2 4-inch bandage compresses
1 applicator 2 per cent tincture iodine
2 tubes tannic acid jelly
16 1-inch adhesive compresses
1 1-yard absorbent gauze
1 roll 4-inch gauze bandage
2 cravat triangle bandages
1 book indentification tags
1 skin pencil or red lipstick
Scissors, tweezers, indelible pencil

(The bandage compress is a gauze bandage folded for quick application and secure fastening. The cravat bandage is a convenient fastener for fixing splints and may be easily folded into a sling. The skin pencil or lipstick is for use in marking victims requiring first attention after transfer to first aid station or field hospital.)

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The watch tower at the New Haven Hospital, a familiar landmark, will serve as an observation post during all emergencies for the protection of hospital buildings.

Blueprint for

"ALL DOCTORS, NURSES and other hospital personnel report immediately to their respective stations for emergency service!"

When this general alarm is sounded over the loud-speaker systems in the hospitals of New Haven, Conn., an efficient organization of hospital and medical personnel which has been worked out in detail will move into high gear to handle community-wide war-time disaster. Throughout the country, other hospitals are organizing their personnel and equipment facilities to provide adequate protection for civilian populations exposed at last to the possible catastrophes of organized sabotage or total war. Plans to provide first aid, transportation, hospital care and facilities for



Hospitals are defense control headquarters for the entire community! The direction and coordination of disaster activities will be centered in this group working at the hospital.

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Disaster Defense

By JAMES A. HAMILTON

evacuating disaster victims—or to carry on normal operations during blackouts, power or water supply failures have been or are being drawn up in thousands of communities from coast to coast; civilian defense committees are working with public health departments and volunteer medical groups to make certain that death and suffering shall be held at the minimum if and when war comes to American homes.

Because New England, and particularly New Haven, have been for over a year centers of defense industry of vital importance to the entire nation, and because munitions plants and powder depositories have made this area a likely target for attack from within long before the declarations of war brought attendant possibilities of bombing or attempted invasion, hospital and medical groups here began to formulate their medical defense plans more than a year ago, and the community today is among those already well prepared to cope with any kind of emergency.

As worked out for New Haven by joint committees representing the hospitals, the medical society, the public health authorities, Red Cross and health division of the civilian defense organization, preparation for protection of the entire community has included a careful study of all possible sources of water supply and the completion of emergency wells to be made available if regular sources are interrupted, the construction of emergency facilities to provide for waste disposal in event of major disaster



Hospitals everywhere are building up and storing reserves of blood plasma against the possibility of disaster involving civilian casualties. "Plasma banks" are lifesavers!

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affecting the city's sewage systems, the installation of independent power supply units in hospitals against the possibility of failure on the part of existing utilities, and the division and organization of the area for care of the injured.

FIRST AID ZONES

The New Haven area has been divided into six major zones, according to size, population and industrial occupation. Centrally located in each zone is a completely equipped first aid headquarters which will be able to provide initial care for the injured and organize transportation to fixed hospital centers. Several substations are prepared within each zone, sufficiently mobile in character to enable the quick concentration of facilities at or near the scene of any disaster involving a large number of casualties.

Each station is staffed with a physician and nurse who act as district first aid officers. Such staff members are drawn from among the residents of the zone to facilitate speedy service and are selected as far as possible from professional groups whose services would not be required immediately at the hospital during an emergency. Thus district medical officers are chosen from among school and public health physicians rather than hospital staff surgeons, zone nurses from the ranks of public health and visiting nurse staffs instead of from hospital duty.

TRANSPORTATION FACILITIES

The American Legion has assisted in recruiting and training a staff of volunteer stretcher bearers to bring the injured into district and zone first aid stations. With the cooperation of local police, the defense committee has prepared lists of all trucks and station wagons together with volunteer drivers—which can be made available to remove patients from first aid stations to hospitals. Instructions on when and where to report and how to prepare for active duty have already been issued to the volunteers. The entire zone staff units, in fact, have been named and assigned to specific duties. Called into action by a central siren which locates the scene of disaster, the organization is ready to function today.

HOSPITAL ORGANIZATION

Substation and zone first aid plans have been developed largely by the medical society; hospitals have concentrated their efforts on preparation of institutional *(Continued on page 206)*

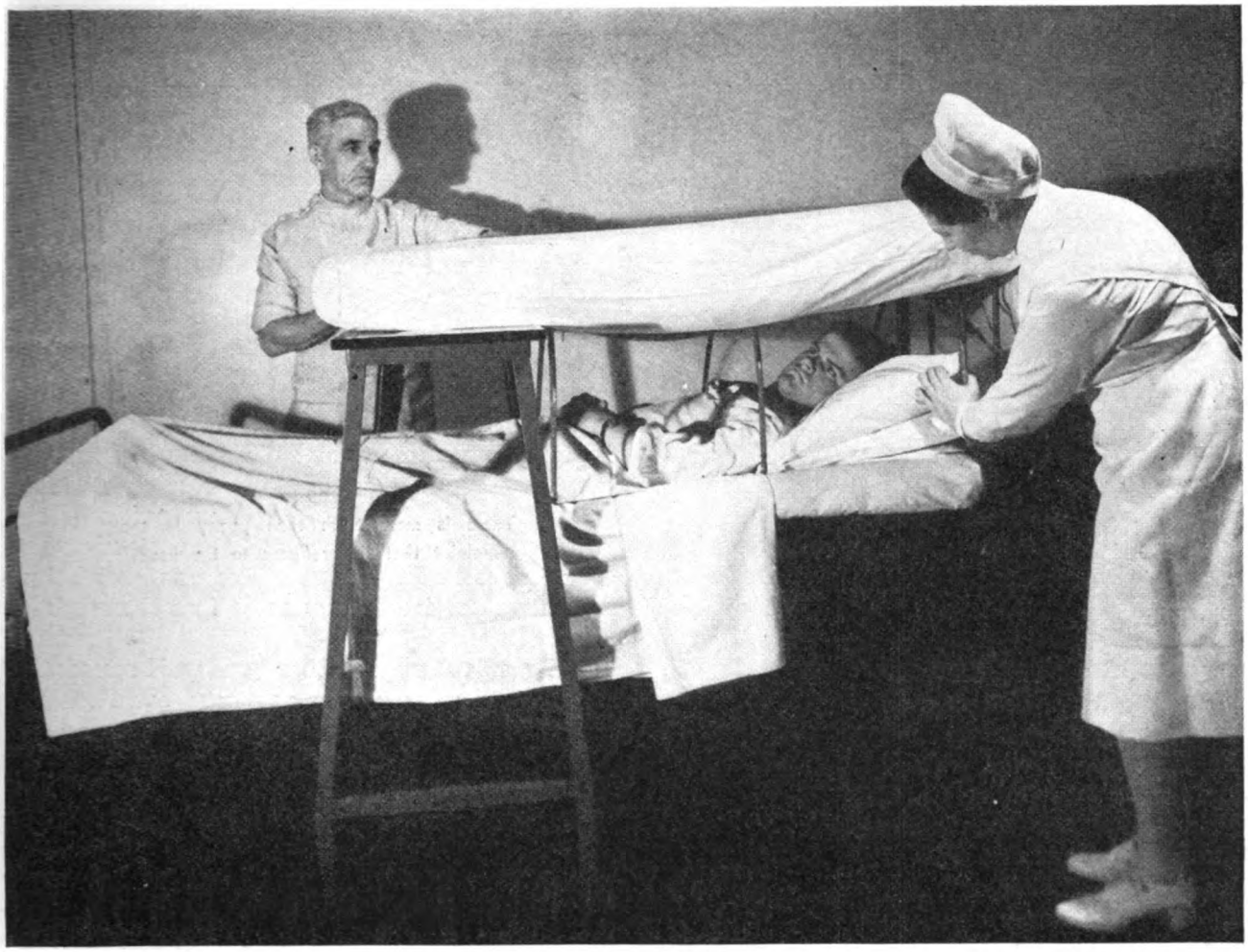


Hospitals are storing emergency supplies of blankets, cots, bandages, dressings, drugs and lanterns to insure uninterrupted care.



Volunteer workers are being trained to set up and make cots in "emergency wards."

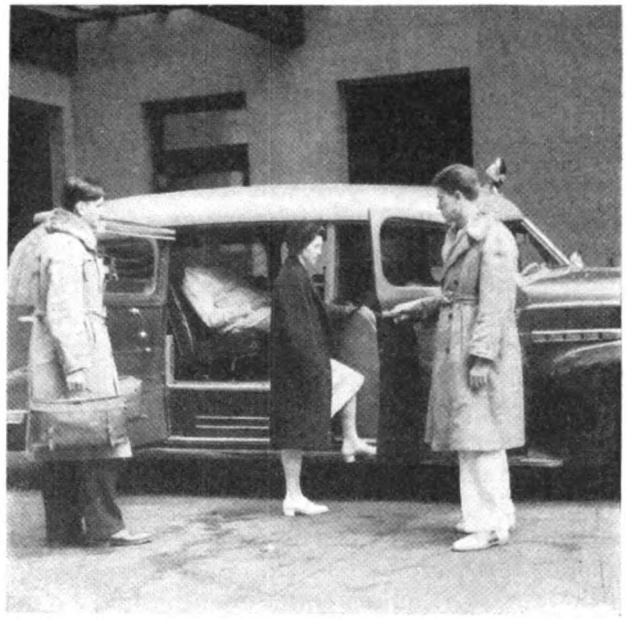
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Plans have been made for the removal of patients to safer locations within the hospital in event of air raids involving a hazard to the hospital buildings. British experience has proved that this makeshift "bed shelter" may save patients from injury due to fragmentation.



Members of the hospital's fire fighting squad have emergency drill on the roof.

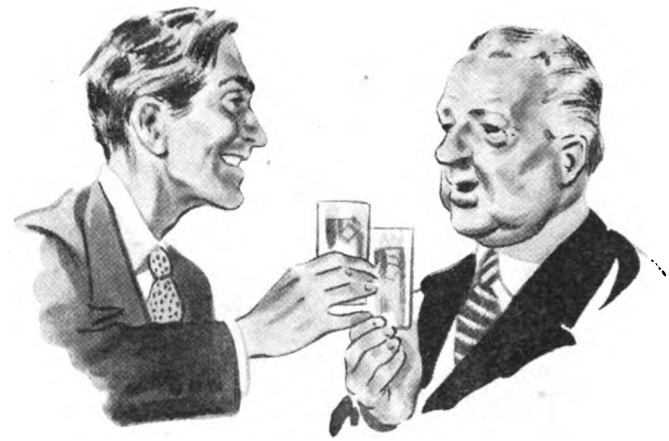


Mobile first aid units are equipped and ready to be rushed to the disaster scene.

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When is a man drunk? Where does sobriety stop and drunkenness actually commence?



There is more truth than poetry in the complaint that liquor "goes to the head."

WHEN IS A MAN

By MIRIAM ZELLER GROSS

BRADLEY WAS KILLED instantly. Gilbert died shortly after he reached the hospital. Truck driver Joe Atkins told Police Chief O'Hara that the men were "stumbling from one side of the road to the other" and that it was impossible to keep from hitting them despite the fact that he pulled his truck to the shoulder of the road trying to avoid the accident.

Was liquor responsible? The truck driver claims that the men were drunk. But is this just his alibi? Stories differ as to their behavior. They are dead. How can it be proved whether Gilbert and Bradley were under the influence of alcohol or not? Just when is a man drunk? Where does sobriety stop and drunkenness begin?

These and other questions dealing with alcohol in traffic accidents are answered in an article published recently in *The Journal* of the American Medical Association. The article tells how Dr. Thomas A. Gonzales, Chief Medical Examiner, and Alexander O. Gettler, City Toxicologist, both of New York City, studied some 13,000 deaths on the highway. Nearly 7,000 bodies were examined. Careful research to determine whether traffic victims had been intoxicated, and if so how much, were conducted in almost 3,500 cases.

Eliminated from alcohol studies were children under fifteen, adults who lived for more than twenty-four hours after the accident and would thus have eliminated any alcohol consumed prior to the accident, and persons on whom for various reasons the tests were considered unnecessary. All studied were tested for wood and ethyl alcohol to eliminate the possibility of including any persons so poisoned.

There is more truth than poetry in the complaint that liquor "goes to the head," for alcohol does not get in its befuddling job until it actually lands in the brain centers. Oddly enough, it is not how much you drink that decides either how drunk you will get or how quickly you will feel your liquor. The ability

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Tests prove that drinkers have as much as 0.6 per cent of alcohol in the brain.



Their sense of care and caution gone, they are unstable, and may kill or get killed!

Drunk?

of a person's body to burn up alcohol in the tissues determines how much or how little one can drink without getting intoxicated.

Habitual drinkers develop the power to oxidize alcohol quickly to a marked degree. Abstainers usually do not. This ability to burn up alcohol rapidly in the body explains why topers frequently drink large amounts without appearing drunk. Lack of this ability explains why others may "go under" after a few drinks. Since the actual presence of alcohol in the brain tissues causes intoxication it is logical, as pointed out by Gonzales and Gettler, that the extent to which the brain contains alcohol determines how drunk a person is.

Brains of persons who have been drinking contain between five-thousandths and six-tenths of 1 per cent alcoholic content. This has been proved by tests on thousands of persons. One brain with as much as nine-tenths of 1 per cent has been noted in studies covering twenty years. But few people can navigate under their own power with as much as four-tenths of 1 per cent brain alcoholic content. For that reason few people with that much intoxication figure in traffic accidents. Most of those killed in traffic and with alcohol in their systems have between two and three-tenths of 1 per cent brain alcoholic content. In a study conducted by S. R. Gerber, Coroner of Cuyahoga County (Cleveland) Ohio, over one third of the pedestrians killed in traffic had brain alcoholic contents of more than one and a half tenths of 1 per cent.

Now for the question—how drunk is drunk? Well here is the way the writer Thomas Peacock defined drunkenness in "The Misfortunes of Elphin," almost a hundred years ago:

"Not drunk is he, who from the floor
Can rise alone, and still drink more;
But drunk is he, who prostrate lies,
Without the power to drink or rise."

But such answers are little satisfaction for present day medical researchers—who have to have the facts! *(Continued on page 213)*

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Answers to Practical Questions

Whenever young women get together for tea or bridge—or just to visit—some phase of the subject of menstruation is sure to find its way into the discussion. This article presents the principal facts about menstruation and its effects on the normal woman in a sensible, down-to-earth discussion that should be of interest to all women, and especially to young girls of high school and college age



Camera Guild, Inc.

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on Menstruation

By MARGARET BELL

THERE ARE many false ideas about the menstrual period and about childbirth. The menstrual period is a perfectly normal function for the average woman; certainly it should not be looked on as sickness. There are relatively few women (and these are variations from the normal) who have any reason to have trouble or pain during the period, and many of these cases can be corrected. I am talking about a girl or young woman who takes care of herself and who, in addition to living in an intelligent manner, understands the anatomy and physiology of reproduction.

The appearance of the first menstrual period is a good indication that the young girl will soon possess the potentialities of motherhood. The appearance of menstrual blood means that the uterus or womb that has been prepared to receive the fertilized ovum (or the very beginnings of the baby) is disappointed. The lining membrane of the uterus, rich with blood, is discharged, and the uterus gives up the possibility of conception. Suppose, however, that this were a young married woman who had been menstruating regularly, what would have happened if this womb or uterus had received a fertilized seed? The uterus then would not have been "disappointed," and the woman would cease to menstruate not only for the length of time it takes the baby to develop (about 280 days), but usually, in addition, throughout the time the mother nurses the new baby. Thus it may be seen that there is a close relationship between the menses and pregnancy.

The normal girl, after the first year, will menstruate regularly. Intervals between the onsets of the periods will usually be three, four or five weeks, with a leeway of a day or two from the expected date. The flow is usually moderate and lasts from five to six days; however, the period may last seven days, or perhaps only two to three days. The flow is usually uninterrupted. The normal girl experiences little or no pain, although she may feel some discomfort if she has recently been sick, had a cold, been chilled or overtired, or if she is emotionally concerned about almost anything—such as love, winning a game or her studies.

The menstrual blood is bright red when the flow is free, and at the end of the period, when the flow is scant, it may be dark and almost black. The blood is coming from the inside of the womb and passes through the vagina to reach the pad. Normally, the menstrual blood does not clot, but if for one reason or another the flow is unusually free, clotting may occur. The importance of even a small amount of bleeding between periods must be emphasized. The appearance of blood from the vagina between periods is always an important fact no matter what the age of the girl or woman may be. Though the doctor may be able to explain this flow, the explanation always requires careful examination; the possibility of cancer, especially of the mouth or cervix of the uterus, must always be considered. When such cancers are recognized early and properly treated, the results are excellent. The girl who complains of some menstrual difficulty—who has severe pain, discharge, profuse, irregular or prolonged flow, or who does not menstruate—is not normal and should be examined thoroughly by a physician who understands these matters and who can promote correction of the difficulty.

The normal girl is advised to carry on as usual during the period, with one or two limitations. That the menstruating girl is able to contaminate anybody or anything is fantastic. Menstrual blood is pure and does not harm the system. It is not true that the freer the flow during the period the more the body will be purified. For esthetic reasons, it is obvious that one should bathe or wash more frequently during the period than at any other time. The main precaution to be observed is that the body temperature is *(Continued on page 208)*

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Worst Foot Forward

By ROBERT MARIS

SOME NINETY MILLION AMERICANS go about their daily chores at the office, at home or at school suffering from one or another kind of sore feet, ranging from mild disorders like calluses to serious deformities like fallen arches. The causes of pain in the feet are at times obscure; the more persistent and disabling the symptoms the more likely they are to require expert diagnosis by an orthopedic surgeon before any improvement may be expected.

Contrary to popular belief, fallen arches are not caused by faulty or ill-fitting shoes and can't be cured or corrected by changing shoes. The cause in most cases is a malformation or improper distribution of weight stresses in the bony framework of the foot; the cure must always be a suitable correction at the source of the difficulty—often involving a change of occupation for patients whose feet will no longer endure the pressure of long hours of walking or standing.

Luckily, most foot symptoms are indicative of less serious trouble. Distorted toes, bunions, corns, calluses, ingrowing or thickened nails and lumps at the back of the heel often arise from nothing worse than shoes that are too tight, too short, or too high in the heel. Most such disorders can be corrected by a shift to proper shoes. Better yet, they can usually be prevented by more careful attention to buying shoes that fit!

That this, however, is the beginning rather than the end of the sore feet problem is demonstrated in a pamphlet published a few months ago by the Bureau of Home Economics of the United States Department of Agriculture, under the title, "Shoe Sizing and Fitting—An Analysis of Practices and Trends." According to the Bureau, your chances of buying shoes that fit properly—granting an earnest effort on your part to do justice to your feet and a conscientious attitude toward his work on the part of the salesman, neither of which factors is by any means likely always to be present—are about one in six. Say you're an average size male and the shoes you're wearing now are 9B. Another 9B shoe might feel just right. So might a 7½E, 8D, 8½C, 9½A or 10AA—depending on the shape of your foot, not merely its length and width. The last—wood model over which shoes are made—for each of these sizes contains exactly the same amount of wood.

Your problem is further confused by the fact that last and shoe manufacturers, style magnates, retailers and consumer groups have never been able to get together on standard sizing practices, with the result that the 9B shoe you buy in one store may fit you perfectly, and 9B from the store across the street may not fit at all! To check on size labels and practices, it is reported, a manufacturer recently sent a girl with a 6½A foot to buy shoes in a number of stores in different cities. She came back with shoes that fitted, and among them were a dozen different sizes. Another manufacturer had a woman employee buy 12 pairs at different stores in Washington, D. C. All the shoes appeared to fit, but there were eight different sizes—out of a possible 12. Furthermore, expert examination showed that only 4 pairs were actually good fits; 3 of these had different size labels!

This crazy-quilt pattern of sizing and fitting practices has been the almost inevitable result of the application of mass production methods to the manufacture of an article designed to fit as complicated a structure as the human foot, according to the Bureau study, with further confusion added as manufacturers have sought to meet the demands of merchandising ruled by whims of fashion. Measurements of the lasts developed by early manufacturers were considered trade secrets. With every manufacturer going his own way independently, making shoes to fit lasts whose design was known to him alone, it isn't surprising

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that the result was chaos as far as the consumer was concerned. The uproar from bewildered shoe buyers was such that in 1886 the manufacturers got together and adopted a set of standard length and width measurements for both lasts and shoes. To the extent that uniformity exists at all in shoe sizes today—and of course there is some sense to present size labels—these standards are responsible. Departures from the standards by individual manufacturers have been so frequent and widespread, however, that the Bureau says conditions in sizing and fitting are about as confused today as they were before 1886.

While most manufacturers are careful to make an original model of the last for each size instead of turning several sizes from one model, no fundamental improvement in the methods of measuring feet has taken place since the days when shoemaking was a handcraft art. That precise foot measurements as a guide to shoe manufacture are a possibility, however, is apparent in the 15 year record of the Orthopedic Research Laboratory in Boston, whose program includes the provision of satisfactory footwear for patients with badly crippled or distorted feet. Working with each patient individually, the Laboratory's methods would be too costly and time consuming if applied in an effort to record the characteristics of a large number of feet to serve the needs of standard sizing, but, the Bureau claims, the findings do indicate that scientific foot data could be applied to the improvement of shoe lasts. Moreover, the British Boot, Shoe and Allied Trades Association has demonstrated that instruments may be constructed to measure the shape as well as the circumference of the foot; neglect of the shape factor, it develops, is one of the chief causes of the startling differences between apparent and actual fit.

Changing fashions, expressed in the influence of style promotion on last manufacture, are responsible for a share of America's sore feet. The manufacturer who has developed lasts which he thinks have good fitting properties may be compelled to alter their dimensions to suit the merchandiser's idea of what will sell best next season. And although a new style may be the result of some one's judgment of what is good for feet, most style changes are attributable to market rather than medical analysis. The soundness of any particular combination of dimensions and contours can be determined only by more scientific knowledge of the characteristics of feet and the relation of shoes to foot health, the Bureau concludes. Due credit is given to last and shoe manufacturers for trying to reduce the national box-score of bunions, bumps, corns and calluses; thoughtful elements in the industry have worked endlessly, by painstaking trial and error improvement in the fit of their products to model feet, to build proper fitting qualities into their lasts

(Continued on page 232)

She Walks in Beauty

She walks in beauty as Beauty ought,
Measured the swing of her fluttering skirts.
Measured with dignity? Perish the thought!
She walks in beauty and Ouch!—It hurts!

She walks in beauty. In mute appeal
Toes poke out from untoward places.
The heel's a beauty, but Beauty (the heel!)
Takes toll at the great, wide-open spaces.

In beauty she walks! But see—she halts,
Limps to a doorway, slips inside
To coddle her arches; then on with the waltz!
She walks in beauty, and yearns to ride.

She turns to the park: soft grass—cool shade—
And treacherous stone! Ye gods! What a wrench!
What shrieks from a blister newly made!
Then, heavenly solace of sheltered bench!

Gently, so gently, soothe anguish away;
That Beauty is cruel she knows to her sorrow:
And will she remember? Ah! Just for today—
She'll walk in beauty again tomorrow.

—RUTH L. F. BARNETT

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Modern aids to diagnosis in dysentery include the use of the sigmoidoscope, through which direct examinations of the intestine are made

Federal Art Project

DYSENTERY and Abdominal Pain

By JOSEPH FELSEN

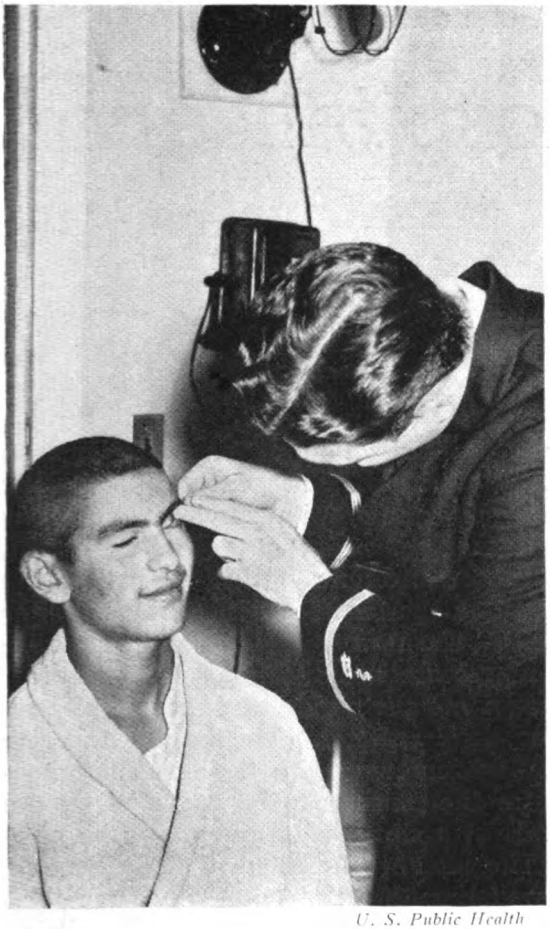
THIS IS NOT A STORY about the man or woman who is continually complaining about relatively trivial matters, the kind of person who lacks intestinal fortitude, or "guts." This tale is about that large group of our fellow citizens who have real, dyed-in-the-wool bellyaches. The first group constitute a mental problem of their own creation. They receive the most modern and intensive sympathetic interest of educators, psychologists and psychiatrists. The second group, those who suffer from a real physical ailment, until recently received little attention, even though the condition is largely the result of the negligence of others. We refer specifically to bacillary dysentery, in which the most prominent complaints are abdominal cramps, diarrhea and fever. This disease merits serious consideration because, first, it causes a high mortality among babies, who are very susceptible to it; second, its high incidence at all ages is a sad reflection on our modern era of highly developed hygiene and sanitation; third, it is a completely preventable disease.

Let us consider these three points in order. In the United States, babies have received our undivided attention. Infant mortality in the so-called "protected age group" has been materially reduced. Yet in other countries, particularly in tropical and subtropical re-

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gions, dysentery takes a huge toll among infants, being a major cause of infant deaths. Rapid strides are being made by eminent investigators in many Central and South American countries. There can perhaps be no greater source of satisfaction than our collaboration in this worthy work. It will lead to a fundamental feeling of amity unsurpassed by the more evanescent forms of international cooperation. This opinion is based on the statements of many responsible medical authorities. "Why should we worry about the infants or adults of other nations?" some one may ask. The answer will be apparent in this discussion. Briefly, we have no adequate system of public health control in the United States at present for detecting the presence of bacillary dysentery in people coming from foreign countries. Those who escape detection are potential hazards, particularly if they become foodhandlers, as many of them do.

One infected foodhandler has been known to transmit bacillary dysentery to one hundred or more victims. It is obviously to our advantage from both a moral and material point of view to have other nations adequately control this disease in their respective countries. Further food for thought is offered in the vital statistics reports of the United States Bureau of the Census *(Continued on page 217)*



U. S. Public Health

Examination of aliens at the United States Public Health Service Hospital on Ellis Island, after preliminary inspection on shipboard, helps to prevent dysentery (above).



Federal Art Project

Examining a plate for germ colonies (right).

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Hospitalization

"HOSPITAL CARE for Three Cents a Day," "Non-Profit Hospital Service Association," "Blue Cross Plans," and "Hospital Expense Insurance" are phrases which have rung frequently in the public's ears in recent years. The possibility of purchasing protection against the risk of a hospital bill appeals especially to persons in the moderate or low income groups. Hospital costs are unpredictable as to time and amount; few persons are able to set aside a specific sum to cover such costs, but most people do not have the time to make a study of all the hospitalization insurance plans to determine which contracts offer them the most benefits. There is no simple method to determine the best plan, but a description of the main characteristics of such plans should be helpful in understanding hospitalization insurance and the differences in the various policies.

Hospitalization insurance is offered by two types of agencies: hospital service associations and insurance companies. The commercial insurance companies became more active in the field after the non-profit hospital service associations had pioneered with their plans and had developed an appreciable demand for the hospital service type of indemnity.

HOSPITAL SERVICE ASSOCIATIONS

The arrangement initiated by the Baylor University Hospital of Dallas, Texas, in 1929, is often credited as being the pioneer of the present hospital service plans. From 1930 to the present, non-profit hospital service plans have grown rapidly throughout the United States. There are now 115 such plans operating in 39 states and the District of Columbia. The majority of these organizations are located in industrial cities and limit their activities to the urban areas, but 22 of them are statewide in operation. The rapid growth of hospital service plans indicates an appreciable interest on the part of the public in arranging in advance for the payment of hospital bills if the cost of such arrangements is reasonable.

These plans were introduced at a time when hospitals were finding it difficult to secure endowments, gifts and paying patients. Many hospitals envisaged in prepayment arrangements for hospitalization an increase in the number of paying patients. Because of their non-profit nature and benefit to local hospitals, the plans received free publicity from the press and secured the support of clubs, charitable organizations and other local civic groups.

Group hospitalization contracts perform an insurance function. The general plan under which most of the hospital service associations are organized provides that they be non-profit, non-stock corporations which act as selling agencies for the services offered by member hospitals. The Boards of Directors are made up of representatives of the hospitals, medical profession and the public, and they receive no pay for their services. The hospital service associations contract with their member hospitals for the services to be provided by the hospitals at a stipulated amount per hospital day. The member hospitals thereby become underwriters with the hospital service associations for the service listed in the subscriber's contract. In place of the cash reserves required of insurance companies, the participating hospitals guarantee the services listed in the contract. The hospital service associations are responsible for enrollment of subscribers, collection of premiums, payment to hospitals for services provided subscribers, and proper bookkeeping and accounting of all income and expenses.

To distinguish such contracts from the cash reimbursement arrangements offered by commercial insurance companies, they are called "hospital service contracts." They are issued to cover undeterminable hospital costs and are usually sold to groups of employed persons rather than to individuals. The premium rates and benefits of hospital service contracts cannot be established with assurance of absolute accuracy, since they are based on very

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Insurance

The rapid growth of hospital plans indicates interest on the part of the public in making arrangement in advance for the payment of its hospital bills. A description of the various types of hospital plan should be useful now

By C. E. NYBERG

limited actuarial data, but, if necessary, participating hospitals accept a reduced rate of payment until adjustment can be made in the premium rates or benefits. Good insurance underwriting principles are given consideration, and in general, hospital administrators, physicians and representatives of the local community agencies have, with the available information at their disposal, endeavored to make their plans financially sound.

In the earlier years, hospital service associations were organized as non-profit corporations under the general corporation laws of the states. The question was raised almost at once whether or not these corporations were engaged in the practice of medicine contrary to law, or whether they were insurance carriers not incorporated under the insurance laws. Many state departments of insurance ruled that the hospital service contracts were a form of insurance which required them to incorporate as insurance companies with the legally specified amount of capital stock, reserves, assessments and insurance department supervision. In some states where hospital service contracts were not considered insurance, the associations operated without any supervision by the insurance departments, a practice considered by many interested and informed persons not to be in the best public interest.

In 1933, when those who were interested in forming a hospital service association in New York City did not wish to organize as an insurance company, a special enabling act was sponsored by hospital administrators, physicians and civic leaders and passed by the New York State Legislature in 1934. The New York Act gives the State Superintendent of Insurance and the State Department of Social Welfare considerable supervision of the non-profit hospital service plans organized under the act. Other states followed New York with similar legislation, and most of the plans are now organized under such acts.

PLAN PRINCIPLES SET FORTH

In the initial period of the movement a number of plans were organized by promoters whose main interest was in the prospect of financial gain through the rapid enrollment of subscribers. In a series of articles on prepayment medical and hospital service plans which appeared in *The Journal of the American Medical Association* between October 1932 and February 1933, some of the main principles for the proper development of hospital service plans were set forth. Attention was called to the chief dangers to be avoided, such as competition between hospitals that were members of plans and those that were not, interference with free choice of physician, organization by profit-seeking promoters, uncertain actuarial basis, improper regard for insurance or other state laws, extension of benfits to include medical services and solicitation of subscribers by salesmen on a commission basis. The principles adopted by the medical profession have been modified and expanded in keeping with the experience gained from the operation of the hospital service associations.

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In 1933 the American Hospital Association endorsed the principle of prepayment plans for hospital services, and its Council on Community Relations and Administrative Practices prepared a brochure outlining certain principles for hospital service associations. These principles placed greater emphasis on public welfare than on hospital finances. They pointed out that control should be in the hands of a non-profit organization representing the hospitals, contracts should not be made with business agencies seeking to control the plan, benefits should be limited to hospital charges only, free choice of hospital and physican should be maintained, and there should be cooperation between all reputable hospitals in a community. County and state medical societies adopted resolutions recommending that hospital service associations organized in the respective jurisdictions of these medical societies should adhere to the general principles adopted by the House of Delegates of the American Medical Association and should provide for representation of the medical profession in the control of the plans.

Detailed standards for hospital service plans were developed by the American Hospital Association through its Commission on Hospital Service, which was established in 1937. At the present time, 67 of the 115 hospital associations operating in the United States have obtained approval from the Commission. These organizations are permitted to place on their literature and record forms the insignia of the American Hospital Association superimposed on a blue cross, which is the reason for the name, "Blue Cross Plans." The Commission on Hospital Service does not guarantee the performance of the associations, nor does it exercise any legal control through its approval, which means only that the associations so recognized were organized and have operated in accordance with the established standards.

HOSPITAL PLAN BENEFITS

Although differing somewhat in detail, the benefits enumerated in the subscriber contracts are basically similar. They include 21 to 30 days of hospital care in a semiprivate room, use of the operating room, general nursing care, routine medicines, surgical dressings, routine diagnostic laboratory services and anesthesia if given by a salaried employee of the hospital. Practically all the plans include maternity benefits of 7 to 12 days after a waiting period of ten to twelve months. There may also be a waiting period for hospitalization benefits for elective surgery such as tonsillectomies, adenoidectomies and herniotomies. One of the more recent developments is the offering of contracts which provide service in hospital wards. Such ward service contracts usually do not include the services of staff physicians—often provided patients in public wards. Most of the contracts provide a cash allowance for emergency care in a non-member hospital, or if the member hospitals are unable to provide the service. Allowances are also made if the subscriber wishes more expensive accommodations than those provided in the contract.

ENROLLMENT METHODS

Hospital service contracts, for the most part, are offered only to employed groups, but enrollment requirements vary considerably among plans. Eligible groups consist of persons who have a common employer and groups previously formed for purposes other than insurance, such as trade or labor unions and professional societies. One hundred per cent enrollment is required in small groups; in larger groups 50 to 75 per cent enrollment is accepted. No health examination is required, but the application blank may ask for information on the applicant's previous medical history.

While premium rates have not been standardized, the most common annual rates for semi-private contracts are about $9 for a single subscriber, $18 for husband and wife, and $24 for a family contract which includes husband, wife and dependent minor children. Rates vary with the type of contract and the benefits provided. Where dependents are given only partial coverage, the husband and wife and family contract rates are lower. The rates for ward service contracts are usually about $7 a year for a single subscriber, $14 for husband-wife, and $18 for a family. A number of associations offer ward contracts at even lower rates. The prevailing patient day charge in the hospitals of the community is the most important factor in determining the subscriber's annual premium rate.

There are no accurate figures available on the total number of people enrolled in the 115 non-profit hospital service associations, since some of the organizations do not make regular reports on enrollment. According to latest reports, the 67 *(Continued on page 202)*

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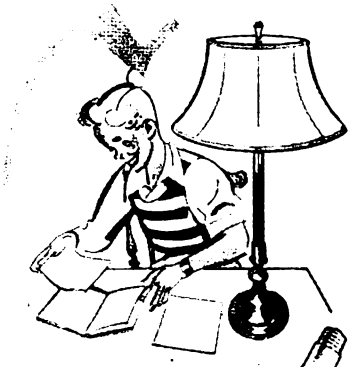
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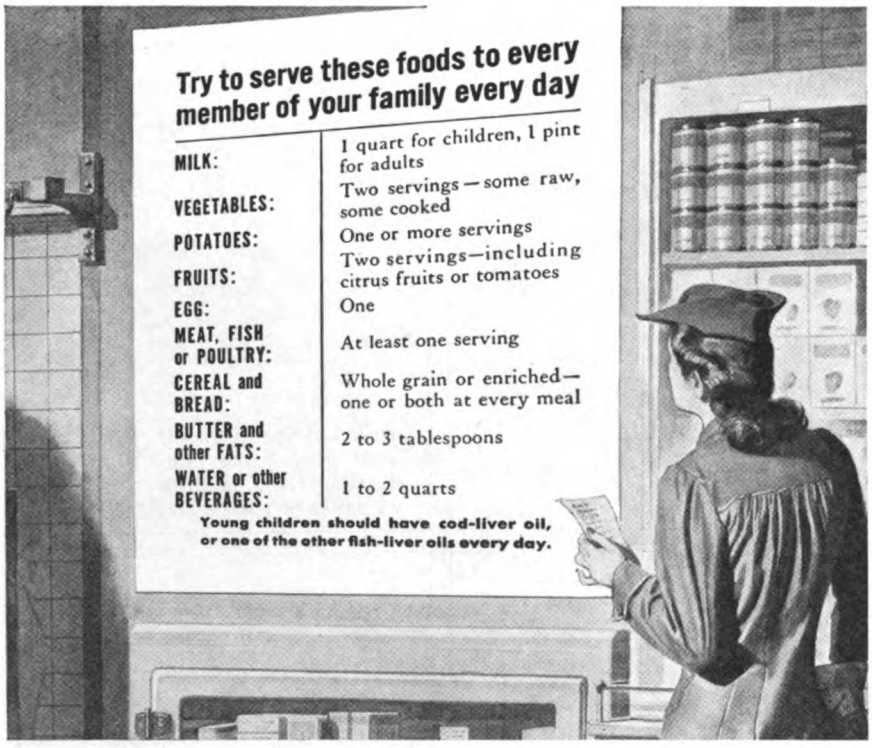


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How well do you feed your family?

MERE *QUANTITY* OF FOOD does not guarantee good nutrition. "Plenty to eat" does *not* always mean "well fed."

A proper diet requires a daily balance of the foods which *supply energy,* the foods which *build and repair,* and the foods which *protect and regulate.*

Such foods cost no more. Yet they will help you maintain the good health that keeps you on the job. A balanced diet may also help ward off the diseases which usually become more prevalent in times of great stress and strain.

Nutrition experts have prepared simple guides to help you select the right foods. One of these is illustrated above. If you will follow it, your meals will provide the elements of a good diet. You need not concern yourself with such technicalities as carbohydrates, proteins, vitamins, and minerals.

Here are some suggestions for making the family food-dollar go further, do more:

1. ***Foods in season*** are usually cheaper; buying in larger quantities more economical.

2. ***The cheaper cuts*** of meat supply the same food value as the fancier ones.

3. ***Dried fruits*** may be used in place of fresh when these are out of season, but should be supplemented with citrus or tomato juice. Canned foods supply virtually the same food values as fresh.

4. ***Cook vegetables only until tender*** in as small a quantity of water as practical. This saves fuel, preserves vitamins and minerals. Use the water, and the juices from canned vegetables in soups and stews. They contain vitamins and minerals. Do not add baking soda to vegetables—it destroys vitamins. *Use some vegetables raw.*

5. ***Milk,*** fresh, canned, dried, or in the form of cheese, is one of the most important food buys you can make. It is the best source of calcium.

For more information about planning nourishing, economical meals, send for Metropolitan's free booklet, 32-Z, "The Family Food Supply."

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Protect Against Smallpox

(Continued from page 173)

ease of smallpox in humans causes the mild infection of cowpox in cattle. The virus apparently becomes weakened and attenuated in the cow so that a human being—such as the dairymaid—when infected from the cow gets the mild form of cowpox but with it immunity from the severe form as well.

Vaccine is made today by inoculating calves with carefully guarded strains of the virus. Lymph is withdrawn from the calves and mixed with glycerine to preserve it and prevent bacterial infection. Only after exhaustive tests of several weeks' duration to rule out all possibility of such infection is the material used for human vaccination.

Smallpox as experienced in the United States today seems, for the larger part, to be milder than the so-called classical form known through the centuries in Europe. Some authorities are of the opinion that the disease as seen in this country consists for the most part of a mild type believed to have been seen first in South America and to have been introduced into this country by way of Florida in 1896. However, both the severe or classical form and the milder form are often seen simultaneously in the same epidemic.

COUNTRY MAY FACE OUTBREAKS OF CEREBROSPINAL FEVER

Epidemics of meningococcic meningitis (inflammation of the membranes of the brain and spinal cord due to the bacteria meningococci), also known as epidemic cerebrospinal fever, frequently occur during war times, involving both military and civilian populations. John H. Dingle and Maxwell Finland warn in *War Medicine* that since epidemics of the disease occurred during the last world war and are prevalent in some countries today, they may assume large proportions in the armed forces or civilian populations of this country in the near future. A total of 12,500 cases occurred in England during 1940 and it already has occurred on this continent in Nova Scotia. However, they say, the outlook for the disease has been considerably improved since the advent of sulfanilamide and its derivatives even though the death rate in the past has been high.

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ENRICHED BREAD

By HOMER C. BENNETT and STUART ITTER

IF YOU HAVE HEARD OF "enriched bread," you may have wondered just what kind of bread it is. Is it richer in butter, is it a sort of cake in bread form, or is it just another advertising stunt?

Enriched bread is none of these. It is white bread to which important vitamins and minerals native to wheat have been added to help restore a balance of these factors in the American diet. The word "enriched" has been used to describe the product in the absence of a more appropriate name. You will hear a great deal about enriched bread in the next few years. The character of its vitamin and mineral content has been worked out by the Food and Nutrition Committee of the National Research Council, a Committee made up of the leading American authorities on nutrition, headed by Dr. Russell M. Wilder of the Mayo Clinic.

The Committee was formed in 1940 to advise and cooperate with the United States Public Health Service and other government agencies interested in improving the basic American diet as a means of strengthening the national defense effort. After more than a year of study, the Committee recently made public its recommendations for restoring needed nutritional factors to our food supply. This platform is being followed by the Food and Drug Administration in its work of establishing standards for common foods.

You may ask, "How does it happen that we, the best fed people in the world, can be lacking in any needed food substance?" To appreciate the answer to this question it is necessary to understand the part vitamins play in life processes.

Vitamins are chemical substances which occur in minute amounts in most of the foods we eat. The human body needs all of them to function properly. To get a sufficient supply of every vitamin we have to eat a wide variety of foods. Vitamins are not a source of calories, like sugars, starches and fats; but they are necessary to keep the machinery of the human body working smoothly.

The function of vitamins may be illustrated in a way by comparison with an automobile. Gasoline is the food of the automobile. It is, however, of little value unless the automobile has spark plugs to ignite the gas, oil in the crank case, water in the battery and other similar essentials. In the same way, the foods we eat will do us little good unless we have vitamin A to help keep certain vital tissues intact, vitamin D for bones and teeth to develop properly, and so on. Vitamins, therefore, are not a fad or a

Resolution of the Committee on Food and Nutrition of the National Research Council on the Fortification of Foods

Whereas there exist deficiencies of vitamins and minerals in the diets of significant segments of the population of the United States which cannot promptly be corrected by public education in the proper choice of foods, be it resolved in order to correct and prevent such deficiencies:

1. That the Committee endorses the addition of specific nutrients to staple foods (as indicated under 6 below) which are effective vehicles for correcting the above deficiencies in the diets of the general population, or of significant advantage of geographic, economic or racial segments thereof.

2. That the Committee opposes the inclusion of additions of specific nutrients under definitions and standards which may be promulgated under the Food, Drug and Domestic Act, except in the case of foods which constitute such effective vehicles of distribution;

3. That the Committee favors unequivocally the fulfilment of the nutritional needs of the people by the use of natural foods as far as practicable and to that end encourages education in the proper choice of foods and the betterment of processes of food manufacturing and preparation so as to more fully retain the essential nutrients needed thereto;

4. That, to avoid undue artificiality of food, the Committee favors, whenever practicable, the choice, as vehicles for the corrective distribution of vitamins and minerals, of those foods which have suffered losses in refining processes and recommends that the vitamins and minerals added to such foods should preferably be the kinds and quantities native thereto in the unrefined state;

5. That the addition of other than natural levels of vitamins and minerals to foods which are suitable as vehicles of distribution may be sanctioned when more natural routes are practically unavailable as ways to correct known nutritional deficiencies;

6. That, at present, the Committee favors appropriate enrichment of flour and bread (and perhaps corn meal), the fortification of milk with vitamin D, the suitable addition of vitamin A to table fats, and of iodine to salt for dietary use. There is no information available to the Committee at the present time which indicates that it is desirable for the Committee to recommend the addition of vitamins or minerals to foods other than those named;

7. That specifically, the Committee oppose the addition of synthetic vitamins to carbonated beverages and confectionery.

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passing stunt to sell certain foods. They are an absolute necessity of life.

Some skeptic may say, "Our forefathers knew nothing about vitamins and they seem to have gotten along all right." But did they? The records do not so indicate. A century ago, many of the vitamin-rich foods we eat today were not popular. Milk, a splendid source of vitamins A and B_2, used to be regarded as good only for small children and very old people. Due to its pale color, it was supposed to enervate adults. Butter was held to be unsuited to children, and was thought to make them lazy and corpulent. Vegetables, also, were in disfavor because people thought they produced belching and melancholy, and contributed to indigestion. Fruits, furthermore, were taboo because they were thought to be the cause of fevers. We now know that without milk, butter and green vegetables it is hard to obtain sufficient vitamin A from foods. In fact, the ailments our forebears attributed to the use of these foods were actually the results of eliminating them from the diet!

Scurvy was a very common condition among our forefathers because of their failure to eat fresh fruits, known today to be the best food sources of the scurvy-preventing vitamin C. Rickets was another common affliction among children of our ancestors' times, especially since the industrial revolution. Not until about a century ago did medical men in Europe find cod liver oil to be of value in curing rickets, and it was only in fairly recent times that this disease was known to be the result of a lack of vitamin D.

Besides causing poor bone formation, rickets led to poor teeth and probably was an important contributing cause of the small stature of many people in those times. When you look at the coats of armor in our museums you get some idea of the shortness of the men in early times compared to the average man today. Much of this is now attributed in large part to a chronic lack of vitamin D over several generations. Since the value of vitamin D has been established, the growth rate of the population has increased. In England, for example, a recent survey shows that the average weight is increasing at a very steady rate of about four tenths of an inch every ten years. Other dietary essentials also may be involved.

The principal shortcoming of the diets prior to the modern period was a lack of vitamins A, C and D. Modern diets supply much more of these vitamins than they did in our great grandfather's day. We now eat many more of the fruits and vegetables which supply the vitamin C needed to prevent scurvy. The importance of vitamin C is well appreciated, so there is relatively little rickets, at least among those who can afford to buy cod liver oil or vitamin D milk. Milk and butter are now widely available, so that our vitamin A supply is much greater than at any time in recent history.

In one important respect, however, diets of a hundred years or more ago were much better than they are today. Although our predecessors had serious deficiencies of at least three vitamins, they were well provided with vitamin B_1, now called thiamin.

Cereals constitute the principal source of energy in the diet of nearly all the races of the world. Whole cereals are one of the best natural sources of vitamin B_1. However, there has been a steady decline in the use of cereals over the last hundred years. In 1894, the per capita consumption of wheat was a little less than a pound a day, but by 1931 it had fallen to approximately a third of a pound.

This will account for a considerable reduction of vitamin B_1 in the modern diet. The wide use today of fruits and vegetables helps to some extent to make up this loss, but, unfortunately, it takes excessive amounts of these foods to equal the rich content of whole wheat cereals. Much of the vitamin B_1 in vegetables is often lost when the cooking water is thrown away. For example, a recent test shows that in the cooking of spinach for as little as fifteen minutes, one-half the vitamin B_1 was lost in the discarded cooking liquid. Many housewives add soda to vegetables, which is apt to be destructive to vitamin B_1.

Food statistics reveal that the reduced intake of cereals has been replaced for the most part by sugar. One hundred years ago the average consumption of sugar amounted to only about five pounds per capita per year, but today it has increased until it is over a hundred pounds per year, and sugar contains no vitamin B_2 or any other vitamins.

In addition to increased sugar consumption another factor which accounts for the reduction of vitamin B_1 in our diets compared to those of a hundred years ago is that modern milling gives us a flour with a vitamin B_1 content only about one-eleventh that of the old stone-ground flours.

One leading authority has estimated that 55 per cent of the calories in the American diet of a hundred years ago, coming from cereals and sugar, provided twelve times as much vitamin B_1 as these foods provide today. If we continue to consume refined wheat products and sugar at these present levels, and there is little reason to indicate otherwise, it will be practically impossible to make up for the vitamin B_1 by eating more everyday foods. For example, it has been estimated that, on the basis of the average American diet, it would require the additional daily consumption of well over a pound of fruit and potatoes, nearly two pounds of vegetables and over a quart of milk adequately to supply the needed B_1.

The vitamin B_1 content of the diet could be greatly improved if whole wheat bread were consumed in much greater quantities than it is. Unfortunately, many people soon tire of it. As a result, about 98

VITAMIN C AND ANTISYPHILIS DRUGS

Evidence that ascorbic acid (vitamin C) may be the solution to the treatment problem presented by those persons with syphilis who are hypersensitive to the antisyphilis drugs known as arsenicals has been presented in *The Journal of the American Medical Association* by Herman N. Bundesen, Hans C. S. Aron, Regina S. Greenebaum, Chester J. Farmer and Arthur F. Abt of Chicago.

"Our studies," the Chicagoans, say, "give promise that the majority of hypersensitive patients whose local reactions to neoarsphenamine are prevented by ascorbic acid should be able to tolerate intravenous doses if the ascorbic acid in the circulating blood is maintained at a level high enough to inhibit the formation of toxic products of oxidation."

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per cent of the bread Americans eat is white bread.

Enriched bread is the result of scientific appreciation of this situation. If people generally have a dislike for whole wheat bread and thus unwittingly deprive themselves of needed vitamins and minerals, nutritionists reasoned, something should be done to put these factors into white bread. Bakers rallied to the challenge. Through the medium of enriched flour or enriched yeast, bakers in all parts of the country started making enriched bread in the spring of 1940. Today about 35 per cent of all the white bread sold in this country is enriched. This percentage is gaining steadily as public appreciation of this bread stimulates the demand. It can be had everywhere in the United States for the asking.

The formula for enrichment established by the Committee on Foods and Nutrition of the National Research Council and endorsed by the Council on Foods and Nutrition of the American Medical Association calls for the restoration of vitamin B_1, niacin (nicotinic acid)—another vitamin of the B group—and iron to levels approximating those found in whole wheat bread. These three factors are the ones known to be removed to the greatest extent in the milling of white flour. Other B vitamins, such as pyridoxine and pantothenic acid, have been found to carry over into white flour to a much greater extent than the three first named. Many bakers are using substantial quantities of dry skim milk, liquid milk or condensed milk in the making of enriched bread and by so doing are increasing its content of all these vitamin factors, and especially of riboflavin. In addition, milk in bread contributes important amounts of calcium and high grade protein, vital particularly to growing children.

It is difficult to overemphasize the importance of this development to the present and future well-being of America. A country must be able to feed its people properly if it is to be strong. In the world crisis of today, skill, stamina and courage are the prerequisites of survival. Enriched bread, by giving back to our people vital nutritive factors lost along the road of our recent industrial progress, can make an important contribution to an invincible America.

AN ARMY...

130,000,000 STRONG!

This isn't a war just for soldiers, sailors, marines and the air force.

This is total war.

We're all in it.

President Roosevelt and Winston Churchill and every other leader has impressed us with the fact that this is everybody's war . . . every man, woman and child has a duty to perform.

This means that physical fitness is a patriotic duty.

So it's well to take a tip from the diet of our armed forces.

A very important part of this adequate daily diet is bread. The records show that our armed forces eat, on the average, no less than eight slices of bread per man per day—this means about 12,000,000 slices of bread a day at present.

And you may profit from this example, especially since you can now obtain Enriched White Bread, containing vitamins and minerals natural to whole wheat.

Make sure that your family . . . that those who turn to you for advice . . . are duly impressed with the necessity and soundness of this good bread . . . in the daily diet.

For high up, among the orders of the day, is this one . . . "KEEP FIT".

And one of the most important . . . and the most economical . . . articles of this daily diet to help keep fit is . . . ENRICHED BREAD!

ACCEPTED AMERICAN MEDICAL ASSN.

Department of Nutrition

AMERICAN INSTITUTE OF BAKING

10 ROCKEFELLER PLAZA NEW YORK, N. Y.

SEND THIS COUPON

Please send me your new free booklet entitled, "Enriched Bread—What Leading Authorities Say About It."

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City.....*State*.....

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Dieting?

Reducing Diets
by E. M. Geraghty. Recipes and nutritional information. 30 pages. 15 cents.

Watch Your Diet
by E. M. Geraghty. 8 pages. 10 cents.

Pocket Calorie Index
compiled by Esther Bogen Tietz, M.D. 10 cents.

Nerves and Indigestion
by Walter Alvarez. 4 pages. 5 cents.

AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St. Chicago, Illinois



This is the way so widely recommended by doctors

Just add ½ "Junket" Brand Rennet Tablet to a glass of milk, stir until dissolved, let stand 10 to 20 minutes, then drink. That's all. The rennet enzyme causes the milk to form soft, fine, easily digested curds when it reaches the stomach, performing the first step in digestion.



Carry Them in Your Purse
"Junket" Rennet Tablets come in handy tubes of 12 tablets. Vest pocket or purse size. At all druggists and grocers.

FREE TRIAL OFFER

"THE 'JUNKET' FOLKS," Chr. Hansen's Laboratory, Inc., Dept. 333, Little Falls, N. Y.

Please send me FREE SAMPLE packet of "Junket" Rennet Tablets and your illustrated recipe book of rennet-custard desserts.

Name.....

Address.....City.....

Hospital Facilities for Boom Towns

By E. K. GUBIN

NATIONAL DEFENSE boom towns in 19 states and the Territory of Hawaii will shortly have needed additional hospital facilities under plans now being carried out by the Federal Works Agency in cooperation with the United States Public Health Service. Health center and clinic facilities are also being provided in 13 states and Alaska under the same program.

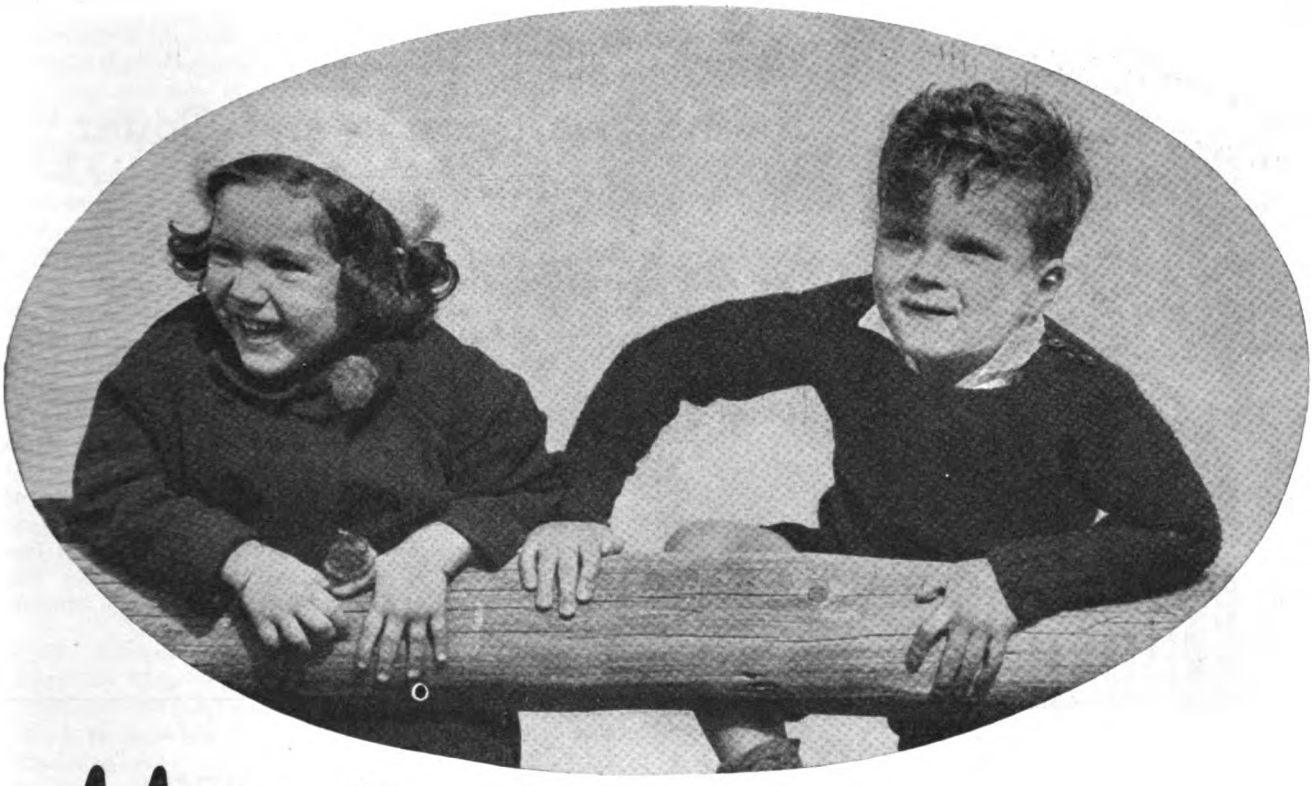
As of Jan. 3, 1942, a total of 61 hospital projects to cost $20,000,000 for land, construction and equipment were approved by President Roosevelt. The federal government is making an outright grant of a little over $15,000,000 of this amount, with the sponsoring communities furnishing the rest. In one instance the federal government is making a loan of $110,000. The federal funds will come out of the $150,000,000 voted by Congress in June 1941 for public works in defense areas under the provisions of the Lanham Act.

These projects will furnish additional daily hospital capacity approximating 3,500 beds in the following communities:

City	Estimated Cost
Childersburg, Ala..	$ 20,000
Fort Smith, Ark....	120,000
Florence, Ala.....	175,000
Fairfield, Calif.....	60,094
Fairfield, Calif.....	63,750
Los Angeles, Calif..	194,000
Salinas, Calif.....	527,606
Hartford, Conn....	303,994
Miami, Fla.....	1,050,000
Tallahassee, Fla....	400,000
Albany, Ga.....	160,000
Savannah, Ga.....	93,398
Alton, Ill.....	135,000
Joliet, Ill.....	80,000
Joliet, Ill.....	125,000
Savanna, Ill.....	163,000
Jeffersonville, Ind..	190,000
La Porte, Ind.....	242,000
South Bend, Ind....	226,000
South Bend, Ind....	201,000
Louisville, Ky.....	164,350
Alexandria, La.....	237,035
Portland, Me.....	224.875
Elkton, Md.....	240,000
Havre de Grace, Md.	222,000
La Plata, Md.....	35,000
South Weymouth, Mass.	150,000
Lansing, Mich.....	425,270
Muskegon, Mich....	381,000
Saginaw, Mich.....	268,062
Independence, Mo..	232,000
Ilion, N. Y.....	$ 110,000
North Tonawanda, N. Y.....	383,840
Sidney, N. Y.....	133,000
Watertown, N. Y...	400,000
Fayetteville, N. C..	400,000
Jacksonville, N. C..	160,470
Wilmington, N. C...	126,300
Wilmington, N. C...	163,200
Wilmington, N. C...	373,000
Akron, Ohio.....	100,000
Akron, Ohio.....	225,000
Akron, Ohio.....	410,000
Akron, Ohio.....	225.000
Ravenna, Ohio.....	250,000
Tarentum, Pa.....	465,700
Charleston, S. C....	675,000
Charleston, S. C....	70,000
Columbia, S. C.....	894,000
Spartanburg County, S. C.....	402,570
Humboldt, Tenn....	178.000
Beaumont, Texas...	350.000
Corpus Christi, Texas	1,387,921
Hampton, Va.....	181,700
Newport News, Va..	179,320
Newport News, Va..	298,120
Norfolk, Va.....	240,000
Radford, Va.....	260,000
Bremerton, Wash..	470,000
Honolulu, Hawaii..	350,000

(Continued on page 227)

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Meat... In the Special Nutritional Needs of the Growth Years

America at war realizes more than ever the importance of good nutrition for its children of today—to them will fall the task of building a new world. For in children, a nutritionally inadequate diet may leave effects which hardly can be overcome in later years. Nutritionists assert that there is no period in life when an adequate diet is as important as during the formative years of the growth period.

In order to be nutritionally adequate, the diet during these years must contain foods rich in calcium, iron, vitamin A, thiamine (vitamin B_1), riboflavin (vitamin G or B_2), niacin (nicotinic acid), vitamin C (ascorbic acid), and vitamin D. Proteins must be supplied in sufficiently liberal amounts to satisfy fully the greatly increased needs of this period—a 13 year old boy, for instance, actually requires more protein than his father or mother, and an 8 year old girl requires just as much as her mother. Ample calories must be supplied for the great energy expenditure of childhood and adolescence.

If these requirements are not satisfied, growth is retarded, resistance to many diseases is lessened, deficiency states develop, and behavior problems are harder to rectify.

Most of the nutritional essentials can be supplied in adequate amounts by well balanced meals, as indicated by the dietary recommendations of the Food and Nutrition Board of the National Research Council. Meat, with its wealth of high quality proteins and its important store of B vitamins, iron, copper, and phosphorus, ranks high among the important foods of the growth years.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

CHICAGO

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A well-turned tool for transforming health ideals into daily practices

HEALTH EDUCATION

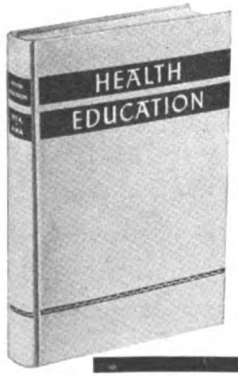
Second Revision—1941

A GUIDE FOR TEACHERS IN ELEMENTARY AND SECONDARY SCHOOLS AND INSTITUTIONS FOR TEACHER EDUCATION.

VALUABLE illustrative units of work contributed by teachers and supervisors throughout the country.

BUILT of such pertinent working material as: Trends in Health Problems . . What the Schools Can Do . . Facts All Teachers Should Know Relating to Child Growth and Development . . Facts Relating to the Protection and Improvement of Child Health . . Plans and Policies of School Administration . . Learning Situations: Processes of Meeting Them . . Learning Situations: Activities, Materials . . Reports of Learning Experiences.

368 pages . Cloth bound . 5¾ x 9 . $1.50 postpaid . Reductions for quantities.



By the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with the Cooperation of Advisory Committees.

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago

Iodine, Sea Sponge and Goiter

(*Continued from page 175*)

to whom large doses of iodine had been given as a preoperative measure. They had taken advantage of the fact (noted by others) that the good effects of iodine are only temporary and advised operation for the removal of the toxic goiter when the iodine had exerted its maximal beneficial effect. This usually took from two to four weeks. Plummer's findings were quickly corroborated in all first class clinics everywhere in America and on the continent. Operation for the removal of a toxic goiter could now be carried out with a minimum of risk, and the mortality in the hands of capable surgeons fell to an astonishingly low level. No good surgeon today would think of operating for this disease without the careful preliminary administration of iodine. The operation of thyroidectomy for toxic goiter is one of the great achievements of modern surgery, and is due almost entirely to the careful preparation of the patient with iodine—a far cry, indeed, from the crude "burnt sponge" of the ancients.

Hospitalization Insurance

(*Continued from page 194*)

plans approved by the American Hospital Association had 7,500,000 subscribers at the end of September 1941. Many of the 48 remaining plans are single hospital plans limited to a few hundred subscribers.

INSURANCE COMPANY CONTRACTS

Insurance companies offer reimbursement contracts which provide that cash benefits are paid for the expenses incurred for hospital confinement, the amount of the benefit for each day the policyholder is confined in a hospital under the care of a physician depending on the premium paid. These insurance companies may be divided into two classes: those which offer hospitalization insurance on a group basis only, and those offering policies for individuals as well.

Many legal reserve life and casualty insurance companies offer a complete insurance program to employed groups either through the employer or directly to the employees. A complete insurance program may include life, accident and health, accidental death and dismemberment, hospital and surgical expense insurance protection. A limited program may include any combination of these. Insurance companies usually require that there be at least 50 persons in the employed group, that not less than 75 per cent of the group shall enroll, and that the total premium charge shall be paid through the employer or a representative of the group in a lump sum. The hospital expense policies provide benefits for 31 or more days of hospital care for any one disability. Reimbursement is also provided for diagnostic laboratory services and use of the operating room up to a maximum of five times the amount of the daily benefit. The maximum amount of benefit that will be paid out in a contract year is usually stipulated in the contract. Premium rates are computed according to the amount of daily benefit, the type of employment and the age and sex of the members of the group. To the extent that benefits may be compared, premiums for insurance company contracts are approximately the same as the rates for contracts of the hospital service plans, but the insurance companies' rates and benefits are often more flexible and can be more easily adjusted to fit the needs of a particular group.

If surgical benefits are included with group hospitalization there is an additional premium. The in-

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demnities or cash benefits paid for surgical procedures are stated in the policy and are maximum benefits, but do not necessarily represent the total physician's fees for services. The maximum benefits stated are purposely set below the usual physician's charges for the services in order to avoid claims for benefits beyond the actual expenses, or for unnecessary services, since the benefits are paid in cash directly to the insured. The policies do not provide for any contract with hospitals or physicians, although they usually require that the policyholder obtain hospital service in a legally constituted hospital under the direction of a licensed physician.

SURGICAL BENEFITS OFFERED

A number of well-established casualty insurance companies offer hospital and surgical expense insurance to individuals or families not enrolled in groups or not eligible for group insurance. The benefits are usually similar to those sold to groups, although the premium rates are considerably higher. In most instances the individual policies for women do not provide benefits for maternity care, since the insurance companies have experienced an unfavorable selection of risks when maternity benefits were included. Premium rates for individual hospital expense policies are usually about $12 a year for men and $15 a year for women. The premium for surgical benefits is usually about $6 a year.

A number of relatively new mutual insurance companies and benefit associations, usually organized on an assessment basis, have attempted to enter the field of accident, health and hospitalization insurance with low-rate contracts. These contracts frequently provide that the charges for hospital or medical service sustained by the insured will be paid by the insurance company directly to the physicians or hospitals. The contract may be written in such a manner that the insurance company or benefit association will control the type and amount of services the policyholder may receive. Such control is necessary for the insurance company if maximum benefits are not stated in the contract. Sound actuarial principles require

(Continued on page 223)



How will your little girl look at 18?

One precaution every mother should take . . . WORCESTER . . . the salt with the *extra* benefit.

Science now knows why



APPLES are good for Nutritional Defense

IN WASHINGTON STATE, where people are almost brought up on apples, the average life span is 2 to 3 years longer than the U. S. average.

To learn the facts behind this record, Washington growers have now for many years had scientists studying the nutritional values of the apple. Here are some things that have been learned:

Apples are rich in substances which help promote normal intestinal activity —are an aid to good digestion. Apples contain pectin, which combines with water to form a kind of "bulk" absorbing and soothing to the intestines.

Apples furnish extra supplies of vitamins A, B_2 and C as well as much needed food minerals, iron, calcium and phosphorus. Also much more needed sustaining power than was formerly supposed. Apples provide an alkaline mineral residue. In addition, apple-eating exercises the gums and helps keep the teeth white and clean.

The world's most famous apples, such as Washington Delicious and Winesaps, are grown in Washington State. Here mineral-rich soil, sunny days and crisp nights all combine to produce apples that are crisp and juicy, marvelous to eat.

For winter nutritional defense at your house, keep a bowlful of our fine-eating Washington apples in your icebox regularly. Enjoy two or three daily. For free booklet, write Washington State Apple Commission, Wenatchee, Washington.

WASHINGTON STATE APPLES

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If you can eat one salted peanut, you have the secret of effective dieting!

Can You Take It or Leave It?

By PHOEBE M. WALTERS

HAVE YOU HEARD the new definition of will power? It is the ability to eat one salted peanut. And therein lies the secret of all effective dieting. It's as simple as that, and as unpleasant. It's so unpleasant that we go to almost any lengths to get around it. We play golf, or ride a horse, or swim, or roll, or "vibrate" or mostly just talk. But the most effective exercise I ever heard of for losing weight is shaking the head.

Hunger, in a robust energetic human being, is still a primitive urge, an urge which cannot be civilized, which, on the contrary, has been coddled by civilization to a point undreamed of by primitive man. And will power, on the other hand, has been reduced to a minimum. In our daily lives we say what we please, go where we please and do what we please in perfect freedom. We are used to making our own terms in any bargain. When suddenly we try to bargain with the laws of nature and find that the terms must be hers and not ours, we are dismayed. We try to argue with her, plead with her or defy her but nature says if we eat too much we shall be too fat. We can take that or leave it.

So we try to find that thing called will power, lost somewhere among our many possessions, buried beneath the featherbed of our lives. We shall find that it needs shaking down. Take it from me, there is nothing that will shake it down as effectively as a siege of dieting! If, after a few frantic days, you decide that you don't lose weight as other people do, that you "eat practically nothing, and still don't lose an ounce," just tell that to the marines! I once heard of a young man, mightily overweight, who went to a scientifically run diet kitchen week after week, and didn't lose an ounce. The doctors and dietitians couldn't understand it. Finally they said to him: "You might as well go home and try keeping on with this diet at home for awhile. You don't mind the diet, do you?" "Oh no," said the patient, "I don't mind it at all, as long as I can eat what I want to between meals."

I was interested, not long ago, in looking over the various charts in this diet kitchen, showing the average daily diet in calories for the various types of workers: housewife, office worker, laborer, farmer and the like, and I found to my horror that the farmer's diet, plus slightly more creampuffy selections in desserts, would just about satisfy me. And I am not a farmer! Why would nature play such a trick on a lady? I searched for an explanation, and it seems to be this. The stomach is like a rubber bag or balloon. Overload it with food and it stretches. Having been stretched, it will call for the same overload again in order to be filled to capacity, and so on, and so on. If this is allowed to go on indefinitely, the farmer's appetite and the "bay window" are the inevitable results —come middle age. It is quite prob-



Picture of a man on a diet: he doesn't mind dieting as long as he can eat all he wants! Only firmness and patience will win.

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A lady of fashion can't take off excess pounds on a farmer's diet.

able that if we never overloaded our stomachs, never ate that extra helping, that additional piece of chocolate cake, we would never find ourselves in such a dilemma. But having done so we must pay the price.

A half-filled stomach is like an undisciplined child. It shrieks and howls to have its way. Only firmness will conquer it—firmness and patience, perseverance and superior determination. We must say no, and mean no, and at long last elasticity will return to those sagging walls, and the stomach will shrink back to its normal size, and it will wail no more. One small comfort there is in all this—the less we eat the less we want. The normal sized stomach is easily satisfied, but the stretched stomach, except after a hearty meal, is never satisfied.

The time to start is *now*. Most people "decide" to diet after a huge meal, and with the sagging walls the will sags. But get up in the morning, weigh yourself before breakfast, and make up your mind that nothing, no one, shall tempt you to sell your birthright, a fine, strong, beautiful body, for a mess of pottage. If the problem involves more than five or ten pounds you will need the help of your doctor and dietitians, but if you are taking the bull by the horns while he is still young you can throw him yourself if your will power is of the he-man variety and hasn't suffered from fatty degeneration also. It is really simple. Just remember this motto: "Nothing too much." To hold your weight, that would be sufficient, but to lose weight you

LOOK FOR YOURSELF IN THIS CHART

This chart indicates what Dole Pineapple Juice contributes to the daily allowances for specific nutrients recommended by the Committee on Food and Nutrition of the National Research Council. The left-hand column gives recommended amounts. The right-hand column represents the percentage of the recommendations found in a 6-oz. serving of Dole Pineapple Juice.

Percentage contributed to daily recommendations by a 6-oz. serving of Dole Pineapple Juice	THIAMIN B_1		ASCORBIC ACID C	
	REC. N.R.C. MGS.	DOLE	REC. N.R.C. MGS.	DOLE
AVERAGE WOMAN Moderately Active	1.5	20%	70.	17%
Very Active	1.8	17%	70.	17%
Sedentary	1.2	25%	70.	17%
Pregnancy	1.8	17%	100.	12%
Lactation	2.3	13%	150.	8%
AVERAGE MAN Moderately Active	1.8	17%	75.	16%
Very Active	2.3	13%	75.	16%
Sedentary	1.5	20%	75.	16%

Authoritative analyses and assays accepted by the Council on Foods and Nutrition of the American Medical Association show that a 6-oz. serving of Dole Pineapple Juice (approximately 100 calories) contains 240 I.U. (12. mg.) of Vitamin C (Ascorbic Acid) and 100 I.U. (0.3 mg.) of Vitamin B_1 (Thiamin).



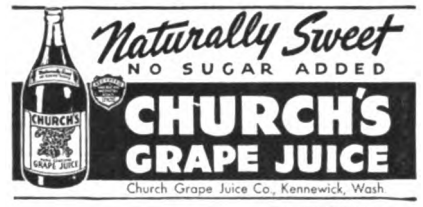
Dole Pineapple Juice is a good source of Vitamins B_1 and C for children and adolescents as well as men and women. It is tempting to healthy appetites and easily assimilated. Dole Pineapple Juice is the true juice of sun-ripened pineapples and a satisfactory addition to the fruit juice diet.

DOLE Hawaiian Pineapple Juice FROM HAWAII U.S.A.

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YOUR TEETH

OUR FOOD AND OUR TEETH, by Percy R. Howe. 4 pages. **5 cents.**

THE CARE OF THE TEETH, by W. M. Gardner. Causes and prevention of dental decay and pyorrhea; dentifrices and mouth washes; brushing-with-pressure method; cooperation with dentist. 27 pages. **15 cents.**

TAKING THE CHILD TO THE DENTIST, by William M. Gardner. 4 pages. **5 cents.**

WHAT THE MOUTH CAN TELL, by Louis Cohn. 4 pages. **5 cents.**

DENTAL NOSTRUMS AND THE PUBLIC HEALTH, by Samuel M. Garden and Eleanore B. Dufour. A reprint from Hygeia of three articles on the promotion of dental nostrums and dentifrices. 32 pages. **10 cents.**

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street Chicago, Illinois

must go hungry for all the sweets that you have enjoyed not wisely but too well.

Not your tastes, but your needs, are to be satisfied. Never substitute your desire for your necessity. Never take a second helping. Never eat between meals. Never skip a meal. Remember that there are nine essentials to be included in the day's diet, and only nine. They are these:

First: 1 pint of milk (2 glasses).
Second: 1 serving of leafy, green or yellow vegetables.
Third: 1 serving of citrus fruit or tomatoes.
Fourth: 3 servings of other fruits or vegetables.
Fifth: 2 servings of lean meat, fish or poultry.
Sixth: 1 egg.
Seventh: 1 serving of whole grain cereal or vitamin bread.
Eighth: Fats, which will be taken care of if the vegetables are prepared with a small amount of butter and the vitamin bread is thinly buttered.
Ninth: Plenty of water.

For instance:

Breakfast: 1 serving of citrus fruit (no. 3); 1 boiled egg (no. 6); 1 slice of vitamin bread, toasted and thinly buttered (nos. 7 and 8); coffee (with milk, and sweetened with sacharin).
Lunch: 1 serving of lean meat, fish or poultry (no. 5); 1 serving of leafy green or yellow vegetables (nos. 2 and 8); 1 serving of fruit, other than citrus fruit (no. 4); 1 glass of milk (no. 1).
Dinner: 1 serving of lean meat, fish or poultry (no. 5); 1 serving of vegetables, other than leafy green or tomatoes (nos. 4 and 8); 1 serving of fruit, other than citrus fruit (no. 4); 1 glass of milk (no. 1).

There it is. It will do the trick. Anything else you eat will be extra, will merely pad the curves. Can you take it or leave it?

Blueprint for Disaster Defense

(Continued from page 182)

facilities. The hospitals of New Haven were asked to provide 300 additional beds—an increase of 25 per cent in the community's bed capacity. Cooperative planning made possible a division of the necessary facilities among hospitals according to the availability of suitable space in hospital solariums, corridors or adjacent buildings. Lists of the additional bedside equipment needed—such as basins, bedpans, syringes, linens and bandages—were turned over to the local Red Cross, which furnished the funds necessary for their purchase. The Red Cross has also supplied army cots to serve as extra beds wherever they are needed; these are already stored in the hospitals, along with blankets, dressings and reserve supplies of medications—including blood plasma—earmarked for emergency service only.

HOSPITAL STAFF

Plans are also complete for the mobilization of hospital personnel for emergency service. In one hospital, the general alarm quoted at the beginning of this report will sound the call to duty; employees are already instructed that the general alarm means the expansion of personnel by an immediate report from all employees who are off duty and by the extension of working schedules to cover twelve, eighteen or, if necessary, twenty-four hour shifts. Employees living away from the hospital have been cautioned not to try to return during an air-raid alarm until the "all clear" signal is heard, and not to report by telephone—so that all lines may be kept clear for the emergency.

● In event of sudden disaster, the Civilian Defense Control Center will dispatch six emergency field casualty units, each consisting of two doctors, two nurses, two nurses' aides and two orderlies, recruited from the hospitals.

The hospital staff has been organized into casualty station teams consisting of one surgeon, one physician, two nurses, two orderlies and two medical students, with a senior surgeon appointed to supervise the activity of each four teams. Anticipated traffic problems have been analyzed in advance to permit the greatest efficiency in ad-

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mitting patients to the hospital and the dispensary; visitors, relatives and friends will be identified at an emergency admitting office set up on the hospital grounds and will not be permitted to enter the hospital itself until first aid care has been completed. The information center is staffed with a social worker, guards, information clerks, guides, stenographers and messengers selected from the hospital personnel and from volunteer groups.

The dispensary lobby has been set aside as a casualty "sorting station" for the identification and segregation of the seriously injured; necessary medical, nursing and administrative personnel assignments have been made. An emergency surgical examination and treatment station is ready to be set up in the basement of one of the hospital buildings—certain casualty teams have been assigned to this unit, and others are ready to go into action at specific posts established as "shock wards," medical stations, and operating rooms. Additional telephone girls and information clerks are available for expected peak loads; certain of these have been selected and trained in the special requirements of handling inquiries and information for the press.

AIR RAID PRECAUTIONS

The hospital itself is divided into zones to expedite the safety and comfort of patients during air raids. Zone chiefs are responsible for blackout protection within their own sections, and have been instructed in detail on the procedure to be followed to effect blackouts in each hospital room. Teams are organized for the removal of patients to safer locations within the hospital, and for their removal to "satellite" institutions outside the metropolitan area in event of damage to the buildings during severe bombing. Roof watchers are assigned for each hospital building to guard against incendiary bombs and direct fire-fighting squads to the scene of conflagrations.

Hospital activity in the community as a whole will be coordinated and directed in emergencies from a Hospital Control Center staffed by representatives of each of the main divisions of the disaster program, such as fire-fighting and rescue, casualty, evacuation, procurement of volunteers and supplies, and liaison with Civilian Defense and Red Cross.

Consideration of wartime problems, forced on public attention by the events of the past few months, emphasizes the vital part that physicians and hospitals must play in the national defense. When New Haven's "blueprints for disaster" were first drawn up the likelihood that these units might be called into active service seemed remote, except for the hazard of sabotage. As the possibility of civilian emergency grows in New England and elsewhere, it is the public's good fortune that the hospital and medical professions are accustomed to deal with crises. The present war emergency simply spotlights old problems and challenges us to improve our present methods of handling them.

Gangway! It's Time for Doctor's Post's Bran Flakes!





Delicious nut-like flavor—plus 3 Extra Benefits!

1. Post's 40% Bran Flakes provide enough bran to help prevent constipation due to lack of bulk in the diet.

2. They supply important nourishment of wheat . . . phosphorus for the teeth and bones . . . and iron for the blood.

3. Post's Bran Flakes are enriched with the precious Vitamin B_1 — provide 50 U.S.P. Units per ounce, or 15% of an adult's minimum daily requirement.

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Answers to Practical Questions on Menstruation

(*Continued from page 187*)

not too greatly changed. The bathroom and surrounding air should be warm, and the water kept about at body temperature. Extremes of temperature are apt to effect changes in circulation that may produce cramps. Observing these precautions, a girl may get into the tub at any time during the period! It must be recognized that there is the rare person who does not seem to tolerate bathing well. In these cases, local sponging is the rule.

Many girls ask for advice about swimming during menstruation. I should hate to get into a pool with a menstruating girl, who should be excluded from the pool—for purely esthetic reasons if for no other. Outdoor swimming should follow the general rules stated for the bath; I see no objection to swimming out-of-doors if the girl tolerates it well and her periods show no prolongation or cessation as a result of swimming and diving.

The menstruating girl is normal, and a douche is not necessary. The organs are arranged in such a way that the flow is constantly downward, and these parts are continuously cleansed. The external parts should be washed more frequently than usual on account of odors and possible irritation; it seems that more and stronger perspiration often accompanies menses, requiring more bathing. Every girl should know that there are always some secretions from these organs, and that the parts should be washed carefully every day to prevent odors and irritation.

Each girl should try out the sport she wishes to undertake and see how it affects her. I have found from my experience over a long period of years that about 85 per cent of all girls may engage in their sports with the usual satisfaction during the menstrual period. While there are a few for whom vigorous exercise during the period seems to bring on pain and cause a profuse or heavy menstrual flow which may be prolonged, many girls who complain of severe pain are delighted to find the pain relieved by vigorous exercise; in fact, the majority of girls who complain of menstrual pain are relieved by suitable exercise.

In discussing participation in recreational sports, the anatomy and physiology of the reproductive tract should be kept in mind. The small, pear-shaped, freely movable uterus—slung in bands of ligaments—is topheavy and engorged with blood during menstruation. I should refrain from active competition in the more vigorous games and be disinclined to indulge in the roughest sports, or in high-jumping, broad-jumping, acrobatics or tumbling. It is interesting to note that while many girls can play any game, even basketball, *for fun* without discomfort, the tension and strain that come into the competitive contest are apt to disturb the cycle—especially during the first few days of the period. It is on account of this emotional strain as much as on account of the possibility of physical injury that competition in strenuous activity is often discouraged during the first two or three days.

Vaginal discharges are frequently a source of worry to uninformed girls, and their nature should be made clear. There are discharges from the vagina that fall within the normal. There is the white, milky discharge that not infrequently appears before and after the period; this is much more commonly found in the tired, weak, non-athletic type of girl—the girl who sleeps too little, eats irregularly, uses faddish diets, plays too few games and soaks in hot tubs. There are other discharges, common in school girls and college women, which need the special care of the doctor. All of us seem to be subjected to them, for no particular reason. Then, of course, there is the greenish, profuse, heavy discharge of the venereal disease called gonorrhea. This condition formerly caused the doctor great concern for the woman patient because it was not only hard to cure but was apt to cause serious complications. Today the doctor has the sulfonamides—the famous new drugs—and gonorrhea, if seen early and properly treated, can be cured. To be sure that a discharge is harmless and not a symptom of disease, the girl should be examined by the doctor, who will take a sample of the discharge and, where indicated, examine it under the microscope.

Other questions often raised by young girls are: What should I know about misplaced wombs? Why do some girls have to have "shots" of glandular medicine when they have menstrual complaints? Why are older women so afraid of the change of life—is there any reason for it? Is childbirth hard on the normal woman?

In reviewing data on 1,500 college students we find that variations in the position of the uterus are not uncommon; in one year we found slight to marked displacements of the uterus in over 25 per cent of 200 girls examined. The statistics from the Mayo Clinic in Rochester, Minn., at one time showed in the examination of all women for all causes (many of which did not concern reproduction and menstruation or pelvic organs) that 25 per cent of the women had some displacement of the uterus—either mild or marked. I do not believe, therefore, that the greatest part of menstrual pain is, on the whole, due to displacements. It must be remembered that the uterus is freely movable and that it may vary its position within a limited range.

There is a great deal of publicity in regard to the effectiveness of the glandular products or preparations from the glands of internal secretion (the endocrines) being used for the cure of menstrual disorders. I am opposed to the promiscuous use of endocrine products unless they are used in the unusual case under the direction of a doctor (a gynecologist or endocrinologist) who is thoroughly trained in the use of such a powerful medication. The one exception to the rule is the use of small amounts of thyroid gland secretion.

In the "change of life," menstruation gradually diminishes and stops at around 45 years of age; this is

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called the menopause, or climacteric. There is no reason for the normal woman to anticipate the menopause with apprehension and fear. Again, we are confronted by a phenomenon as natural as menstruation and childbirth.

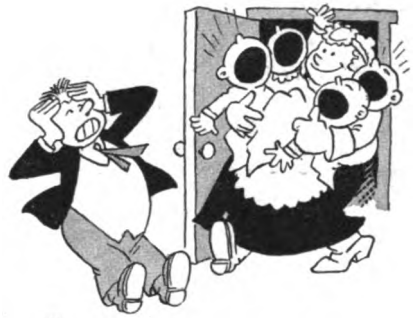
Childbirth and menstruation are closely related aspects of reproduction. It should be possible for a girl to be brought up in such a way that she looks forward with the hope of being a successful wife and mother. Every girl should have the potentialities of delivering a robust, vigorous baby without too much discomfort. A vigorous woman entering the last half of her pregnancy usually feels better than she has ever felt before in her life. Difficulties in child bearing, which are supposed to be more prevalent in the athletic woman, come as a result of the hereditary type of build rather than from athletic experience. The woman with the boyish or mannish type of build has narrow hips and straight shafts in her upper leg. She has less weight from the waist down and therefore is not only apt to be a faster runner but can usually handle herself with greater facility for many sports, especially if she has what we call the "athletic build"—broad shoulders, narrow hips, straight thighs and less weight below the waist. In these women, difficult labor is the exception rather than the rule. However, the possibilities of prolonged childbirth are inclined to be associated with the older age group.

The purpose of the reproductive organs is to add satisfaction to the lives of women as well as men. A young woman should look forward to being a companionable wife and a worthy mother, as a man looks forward to being a good husband and a good father. Understanding and respect for one's sex have a great deal to contribute to the stability and progress of civilization.

HYGEIA INDEX AVAILABLE

The complete index to Volume 19 of HYGEIA (January-December 1941) is now available. A copy for reference use may be obtained by sending a stamped, self-addressed envelope to Mr. Frank V. Cargill, Circulation Manager, HYGEIA, 535 N. Dearborn St., Chicago, Ill.

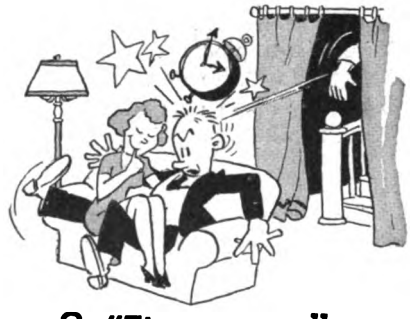
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AMERICAN MEDICAL ASS'N., 535 N. Dearborn, Chicago

QUESTIONS AND *Answers*

Use of Voice in Adolescence

To the Editor:—I am a boy 13 years of age and my voice is beginning to change. I was a boy soprano. Would you please tell which is best to do—keep on singing during the change or quit entirely? Would imitations ruin it?

J. K., Illinois.

Answer.—Normal or light use during the change in adolescence is proper and good for the voice. Light usage, as in discussions and ordinary singing, serves to keep the muscles in good condition and to facilitate the adjustment of the muscles to the enlarging larynx. The forced use of the voice, as in forensic contests, character parts in plays, imitations, cheer leading, singing in a large hall, or taking a leading part in a chorus, is generally recognized to be deleterious. There should be no attempt to force the voice up or down. It would appear from observations made on subjects but not reported in the scientific literature that an attempt to force the voice down is especially injurious. The adolescent should continue to sing in order to keep the laryngeal muscles in condition, but it is necessary to keep the volume down and not attempt to force the voice.

Whooping Cough Immunization

To the Editor:—We have a baby almost a year old and the problem of whooping-cough injections has arisen. Do the injections immunize, and if so how long does the immunization last? In what percentage of cases is the immunization successful in preventing the disease? Is it as successful as the other vaccines for the prevention of smallpox and diphtheria?

Should these injections be given only if the disease is prevalent, or should they be given at a certain age regardless of whether there are cases in the community?

G. W. S., Pennsylvania.

Answer.—1. Immunization against whooping cough with Sauer's vaccine is thought to endure for several years.

2. With properly prepared vaccine, immunization is claimed to be successful in more than 95 per cent of cases.

3. It cannot as yet be conceded that vaccination against whooping cough is as dependable as vaccination against smallpox or against diphtheria.

4. The degree of immunity established is probably greater when the vaccine is given at the age of eight months or later than if it is given prior to eight months of age. It is not well to postpone immunization until whooping cough is prevalent.

Mental Factors in Arthritis

To the Editor:—I recently read a book called "Arthritis and Rheumatic Disease," by Dr. Maurice Lautman, and I am most interested in knowing whether doctors who have made a special study of this disease hold to his general theory of cause: that influencing factors are mental and physical fatigue, foci of infection, improper function of gastro-intestinal tract, excessive and inadequately balanced food intake, exposure to cold and damp, and possibly congenitally poor ner-

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vous system; and that the actual arthritic condition seems to be caused by an increased sensitivity to the poison caused usually by streptococcus bacteria along with lowered resistance and possibly disturbance of the endocrine system.

Also—and this is a most astounding theory to me—he states that there is possibly no disease in which mental condition plays so important a part, and that many times some type of mental upset is associated with the precipitation of arthritic symptoms—emotional strain or psychologic maladjustment such as would result from financial reverses, death of a loved one, a defective child, a philandering husband, or some such. He goes on to say that many believe arthritis is primarily a disease due to ductless gland disturbance, but that this theory lacks verification at too many points to be tenable at this time.

Is the absence or continuance of worry very much of a factor in recovery from the disease?

A. L. T., Kansas.

Answer.—The book referred to gives a good discussion of arthritis and represents, on the whole, what most authorities believe. Perhaps the author's remarks on the psychologic implications of the disease are a bit overemphasized by the correspondent. Students of rheumatic diseases realize and agree, as Dr. Lautman indicates, that the ultimate cause of chronic arthritis is not known. Factors such as fatigue, infection, exposure, nervous strain, poor diet, metabolic disturbances and the rest are thought of as operating together or in various combinations to produce changes in joints not resistant, for some reason, to the attack. Joint tissues which can and do withstand such insults may be equipped to do so because of hereditary excellence or for other reasons not exactly understood.

The relation of mental or emotional strain to the precipitation of symptoms of arthritis is quite a variable one. In any particular instance, the relation of cause and effect may seem clear but be impossible of proof. Even could



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coincidence be disregarded, physicians know that people tend to date the onset of symptoms by other prominent events in their lives. The cause of the symptom, as proved at some later date, may have been in operation for a considerable time though not noticed by the patient until a major appointment or shock brought other imperfections into consciousness, too.

This is not to deny the very great importance of the mental or psychologic side of illness in general, or particularly in arthritis. Personality changes are a part of all types of illness; it is impossible to make a sharp division between mind and body. The fairest attitude toward the patient is to consider him a unit, mind and body interdependent, whatever the disease. Thoughtful physicians always, consciously or unconsciously, take such an attitude, and on it much of their success in treatment depends. It is, therefore, a commonplace that the proper mental attitude hastens recovery from any disease, though the exact mechanism is not always clear. Because of its chronicity, arthritis makes severe psychic demands on its victims over long periods of time. In this sense, at least, it is an affliction in which the absence of worry would tend especially to aid recovery.

Early Memory

To the Editor:—Will a 2 year old child remember everyday happenings, or are incidents permanently remembered only after the age of three? A. C., Illinois.

Answer.—It is difficult to determine whether a child will recall in adulthood incidents and experiences that happened at 2 years of age. There are no well conducted experiments of memory to give us reliable information on the age of earliest memories. A man may say that he can recall events which occurred at 3, 4 or 5 years of age, but it is possible that he is relating incidents and experiences that relatives, usually parents, have often recited. There are autobiographies, some written by prominent people, which report memories of childhood incidents at about age 3, but here again one cannot determine whether the person actually remembers the incidents or reports what others have told him. In our opinion it is not probable that an adult can consciously recall incidents and experiences that happened at 2 years of age.

Cleaning Dental Plates

To the Editor:—I have dental plates and they turn black. I get some of the stain off by scrubbing them with one thing and another, but it comes right back on. I am wondering if you could tell me the cause of it and how to remove it? O. C., Indiana.

Answer.—The formation of stains on artificial dentures is sometimes very troublesome. In most cases, examination of the denture and of the patient is required. There are a number of factors which may determine the frequency, extent and appearance of these stains. Among these factors are the character of the soft tissues of the mouth, the saliva and organisms contained in it, the physical properties of the denture material, diet, smoking, use of certain medicaments such as iron preparations and methods employed in cleaning the denture.

The following general instructions may be helpful in some cases. All deposits should be removed from the denture and the denture should be polished. This work should be done by the dentist or by a well qualified assistant under his supervision. The denture should be removed and rinsed in clear water after each meal if possible. At least once daily it should be scrubbed with a denture brush. The action of the brush may be assisted with some simple cleansing powder such as powdered borax or sodium bicarbonate (baking soda).

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

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When Is a Man Drunk?

(Continued from page 185)

When a person has been drinking, alcohol may be found in the body fluids and breath as well as in the brain tissues. Through this knowledge numerous intoxication tests have been developed. Some authorities favor one and some believe in others. It is stated that blood alcohol is one and two-tenths times that in the brain, nine-tenths that in spinal fluid, eight-tenths that in the urine and 2,000 times that in the breath.

The Drunkometer, the best known device for breath testing, was developed by Dr. R. N. Harger of Indianapolis. The suspect breathes into a rubber bag and whoever assists holds a brass ring which just fits the bag when its contents are something over two quarts. The nozzle is then attached to an apparatus which allows the contents to bubble through a dilute solution of permanganate in strong sulphuric acid. If all the gas in the bag bubbles through without changing the color, the test is negative. But, if the solution changes from purple to yellowish brown, supposedly the person has been drinking. If there is any question, the test is repeated with fresh apparatus. One investigator says that people usually get so panic stricken when they see the color changing before their eyes that they break down and tell all.

Through the courtesy of Kansas City police—setting up confiscated liquor—28 voluntary human guinea pigs were given 2 ounce shots every thirty minutes up to seven drinks. Traffic and Drunkometer tests were given between drinks. Results, yet being tabulated, emphasize the fact that a drunk at the wheel is dangerous.

Northwestern University's Traffic Safety Institute, in trying to find out the extent of drinking among drivers, used Drunkometer tests on 1,750 drivers stopped at random in Evanston, Illinois. They found that slightly better than one driver in eight had been drinking. Rather a startlingly high percentage. Blood alcohol tests were also made and tended to prove that a driver whose blood has fifteen-hundredths of 1 per cent alcohol is between five and six times as apt to have a personal injury accident than if his blood contains no alcohol.

Drs. Walter W. Jetter and Merrill Moore of Harvard, together with Dr. Glenn C. Forrester of Niagara Falls, also developed a breath alcohol apparatus. This device, with which preliminary studies on 1,000 cases have been made, uses magnesium perchlorate and ascarite.

Objections to breath studies are that the results may be misleading if the person has had a drink as recently as fifteen minutes before the breath sample is taken, or if the person has recently vomited. At least one investigator believes that results may vary in the same person taken at the same time depending on whether he breathes deeply or not.

Probably blood tests are the most generally accepted chemical tests. Indiana, Illinois and Maine have passed laws declaring any one as too drunk to drive if tests show the blood alcohol to be fifteen-hundredths of 1 per cent or more. The House of Delegates of the American Medical Association passed a resolution recognizing this limit as showing intoxication but taking individual tolerance differences into consideration. The National Safety Council also bases chemical determination of drunkenness on blood tests.

Dr. H. W. Haggard of Yale University has concluded that you can drink a whisky highball, a Martini cocktail, or more than a quart of 4½ per cent beer before a meal and twice that after a meal without your blood alcohol exceeding the limit. Of 1,150 cases admitted to the Buffalo City Hospital, diagnosed as intoxicated according to beha-



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vior, about one in eight showed no blood alcohol at all. These and other findings lead some authorities to feel that the subject of blood alcohol needs further study. The animal studies conducted by Dr. H. W. Newman, neuropsychiatrist of Leland Stanford University Medical School, throw new light on the subject of blood alcohol, as do his more recent studies on human beings. He feels that intoxication may be connected with tissue tolerance and again calls attention to individual differences in tolerance.

Irrespective of some difference in opinion as to which chemical test shall be used, practically all physicians attest to the importance of chemical tests. Dr. Herman A. Heise of Milwaukee, who developed a urine alcohol test, declared in a September 1934 issue of *The Journal* of the American Medical Association that considering a person sober as long as he can walk and talk was responsible for the small value of the statistics then available.

Gonzales and Gettler report that it makes no difference whether it be man or woman, youth or patriarch, toper or abstainer—anybody is intoxicated when two and a half tenths of 1 per cent of the brain by weight is alcohol. And, in every case, people whose brains have that alcoholic content exhibit the same general behavior. Their speech is "thick" and slurred; they stagger and have trouble keeping their balance.

Alcohol has no noticeable effect on those with less than one-tenth of 1 per cent in their brains. But how thin is the line between safety and danger! Much too thin to take a chance! While just under one-tenth of 1 per cent may mean safety—just over that unfits people either to walk or drive. Those with as much as one tenth of 1 per cent lose their sense of care and caution, disregard traffic signals and regulations, have trouble getting their muscles to coordinate, and are somewhat unstable emotionally. They talk too much, get into fights, or otherwise conduct themselves for later regret. But worse yet—they may either kill or be killed in traffic.

"No drinks for me tonight. I'm walking." Ever hear that remark? The chances are that you never have. Yet you have a better chance to live if you drive a car while drunk than if you get in the way of some drunken driver. Gonzales and Gettler's figures indicate that eleven pedestrians meet death for each driver. These medical scientists feel rightly that too little thought is being given those who walk our highways and streets while under the influence of liquor.

The inebriated pedestrian is a bad traffic risk, they point out, because alcohol makes people take chances and disregard traffic safeguards, and slows up their actions. When the split second may mean the difference between life and death—the pedestrian who has his brain befogged with alcohol cannot make the grade.

Included in traffic fatalities studied by Gonzales and Gettler were those caused by automobiles, elevated and subway trains, passenger cars, trucks, motor cycles, horse drawn and other vehicles.

Some of the figures included in a report on the life extension examinations of 10,000 persons aged 10 to 60 are interesting. They show that over 57 per cent of the men and nearly 30 per cent of the women use alcohol. Of this number, 80 per cent stated that they use it at least once a week. Of women 20 to 29, over 40 per cent used alcohol, and 65 per cent of the men between the ages of 30 and 39.

There were 40,000 people killed in traffic accidents last year in this country; 1,400,000 were injured. Of those injured, about 110,000 are disabled for the rest of their lives.

Now, as never before, this country needs a healthy, whole and very much alive citizenry. Medical investigators constantly point to ways to conserve life and health and avoid economic waste. Today's world is steeped in tragedy and the American way of life is to give a helping hand. Nowhere more than in traffic deaths should serious thought begin at home—with a solemn resolution to heed the warnings of medical science. These unnecessary killings on wheels and on foot can be stopped.

During each of the 12 months of 1941, we killed more Americans in traffic than the total casualties in the attack on Pearl Harbor. It appears high time that we as Americans soberly resolve that it is noble to live for our country as well as to die for it.

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Prevention of Diphtheria

(Continued from page 170)

played a part in this decrease. Diphtheria is a disorder that fluctuates in its prevalence over varying periods of many years. During the last sixty years it appears that we have been on the downward slope of such a fluctuation. This decrease in the number of cases of diphtheria may be due, in part, to changes in the virulence and invasive power of the diphtheria organism.

True natural immunity to the diphtheria germ exists in many persons. The degree of natural immunity also depends on a number of factors. If there are a large number of carriers of diphtheria to whom persons are exposed from time to time, these persons may acquire immunity to the disease without actually contracting it. They breathe in minimal numbers of the germs, and gradually resistance is built.

Where cases of diphtheria are frequent and the population is dense, natural resistance to the disease also is more likely to develop.

It may be seen that in the process of acquiring immunity naturally, many children as well as adults may contract diphtheria.

Because diphtheria is such a dangerous disease, efforts to produce artificial immunity should not be neglected. Every child should be given injections to help in building up this protection.

SYMPTOMS OF DIPHTHERIA

The symptoms of diphtheria vary to some extent, depending on the severity of the disorder and the complications. Usually, the disease develops in about one to four days after exposure. Small, yellowish-white or grayish-white deposits form on the throat and tonsils, if they are present. This deposit has the character of a membrane and is rather difficult to remove from the mucous membrane surfaces. The color of the membrane is a dirty gray and there is an offensive odor from the mouth. The nose also is usually involved.

There may be difficulty in swallowing, and pain in the throat. The



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height of the fever is not closely related to the severity of the symptoms. At times the temperature may be only 101 to 102 degrees, although a severe infection is present. The fever in diphtheria is highest at the beginning of the attack, and then falls. The patient, as a rule, is greatly prostrated.

One of the most dangerous forms of diphtheria is that affecting the larynx, trachea and windpipe. Laryngeal diphtheria comes on usually about the fourth or fifth day of sickness. The first symptoms consist of coughing, hoarseness and noisy breathing. Difficulty in breathing gradually develops due to obstruction of the windpipe. A bluish color of the skin, called cyanosis, may develop because not enough air gets into the lungs.

In 1913, Von Behring developed toxin-antitoxin, a mixture of equal parts of the toxin formed by the diphtheria germ and the antitoxin. Antitoxin is usually produced in horses by injecting the animal with the diphtheria germs and later on withdrawing the blood serum.

In 1928, Ramon presented a diphtheria toxoid preparation containing no horse serum, which is made by the addition of formaldehyde to a culture of diphtheria germs. Still another preparation, known as alum-precipitated toxoid, was suggested as an immunizing material by Glenny and Barr in 1931.

Many studies have been carried out to determine the relative efficiency of these various preparations. The first injection of one of these preparations produces some increase in the number of antibodies against diphtheria in the blood. When a second injection is given a more rapid and greater increase in the antibodies occurs, so that they reach a much higher level. A third injection brings about a still further increase. Thus, the modern method of producing artificial immunity to diphtheria consists in giving at least two and often three injections of the immunity-producing material.

One study made on more than 2,500 children has shown that two doses of alum-precipitated toxoid given about three weeks apart give the highest percentage of children sufficient antitoxin in the blood to protect them against diphtheria. The results with three doses of plain toxoid were almost as satisfactory. Two doses of plain toxoid apparently do not produce a very high degree of immunity. Reactions to injections of toxoid do not occur with anywhere near the frequency of reactions to toxin-antitoxin.

A test, known as the Schick Test, has been devised, which helps to tell whether or not a person is immune to diphtheria. This test is made by injecting about a drop of diluted diphtheria toxin into the skin. If immunity to diphtheria is present, no reaction occurs. If there is no immunity, a red area forms on the skin about the point of injection. This reddened area will persist for several days.

At present, physicians for the most part recommend that injections to prevent diphtheria be started when the baby is about 9 months of age. Before this time, there may still remain some of the immunity which is present in most children at the time of birth.

With the passage of time there is apparently a gradual loss in the antitoxin content of the blood. For this reason, it may be advisable for children to be reinoculated against diphtheria with one dose of toxoid or alum-precipitated toxoid at intervals of from three to five years. In this way, a sufficiently high level of antitoxin will be maintained in the blood to ward off the disease.

Since diphtheria may develop in children who have been inoculated against it, and since it is such a dangerous disease, every child who has a severe sore throat, or other symptoms of diphtheria, should be promptly examined by a physician. A culture of the throat will be taken to determine whether or not diphtheria germs are present. If the physician suspects that the disease is present, he will not delay in starting treatment. Injections of diphtheria antitoxin given in the first twenty-four hours of the disease usually are life-saving. If there is delay in giving antitoxin, the chances of overcoming the condition are materially reduced.

Parents whose children have not been immunized against diphtheria or smallpox should consult the family physician immediately to have the procedure carried out. Immunization without expense, where necessary, is provided locally in most communities.—ED.

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DYSENTERY

(Continued from page 191)

for 1934-1938. Deaths of infants under 2 years of age from diarrhea and enteritis varied from 13,204 to 17,019. Interestingly enough, the latter figure is for 1934, when bacillary dysentery was on the rampage, causing epidemics such as the large Jersey City epidemic of that year. "Diarrhea and enteritis" are loose terms referring to a poorly defined group of cases which in general bear a close parallel to bacillary dysentery. By preventing the latter we may reasonably expect to eliminate many of the former, since the mode of infection is similar.

The sad reflection of the present high incidence of bacillary dysentery on our presumed high hygienic and sanitary standards is apparent from a brief examination of the record. In 1933, the reported cases (United States Public Health Service) of bacillary dysentery were 625, and 17,042 were listed as unclassified dysentery. With increasing interest in bacillary dysentery and diarrheal disease in general, the figures for bacillary dysentery rose to 21,327 in 1939 and 19,152 in 1940. At the same time the unclassified group fell to 1,183 in 1939 and 1,484 in 1940. The obvious inference is that when diarrheal cases are carefully studied bacteriologically the majority prove to be bacillary dysentery. Now, what does all this mean? It signifies that a large number of people suffer from this disease, yet they do so unnecessarily because it is completely preventable. Its disabling effects are often masqueraded under the fashionable term of colitis. The figures quoted above are not intended to arouse mass hysteria. Indeed, they represent but a fraction of the actual incidence, as the disease is often unreported. All public health officials admit this. A pertinent observation is that bacillary dysentery is preeminently a disease of armies, and the same measures we shall outline for civilians are equally efficacious in military practice. This brings us to consideration of the prevention of bacillary dysentery.

In 1934, The International Dysentery Registry was formed for the cooperative study of the infectious diarrheas. A seven point program was formulated as follows:

1. International cooperation for detecting cases at their source.
2. Certification of passengers and crews of ships as to presence or absence of infectious diarrhea at points of embarkation and before disembarkation.
3. Compulsory universal reporting by physicians of all infectious diarrheas.
4. Adequate sanitary supervision of transportation systems, summer camps, food and foodhandlers.
5. Education of the physician and layman in isolating every patient with diarrhea until cultures for specific organism prove negative.
6. Appointment of an epidemiologist to the staff of every hospital.
7. The prophylactic use of vaccine and serum in bacillary dysentery.

The first two points are obvious in their implications. Why put the burden of proof on the country welcoming an alien? This is illogical and economically unsound except under present conditions when our health officials may find it necessary to carry out their own bacteriological examinations for the sake of safety.

The compulsory reporting of all infectious diarrheas has been a major source of difficulty for many years. In 1937, bacillary dysentery was actually not reportable in fifteen of our states, even though it far exceeded the number of cases of typhoid and paratyphoid combined in 1938 and 1939. By 1941, through the cooperation of our public health officials, it was re-

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portable in all states. This is a major advance in the prevention and control of bacillary dysentery. The surest way of eradicating a weed is to pull it out by the roots. The best method of eliminating bacillary dysentery is by tracing it to its source and then removing the cause. This is the work of epidemiologists or disease detectives attached to all modern departments of health.

The adequate sanitary supervision of transportation systems (boats, trains, trailers, aeroplanes), summer camps, food and foodhandlers can be accomplished only by the intelligent cooperation of our citizens. They must provide the laboratory facilities and efficient personnel and take public health out of politics. Every case of bacillary dysentery is caused by a germ which comes from the intestine of an infected person to the mouth of the victim. It travels on the "FFF" (food, fingers, flies). In other words, food (including water) is infected by the germs of the intestinal tract; these are swallowed and give rise to cramps, diarrhea and fever. When one stops to think of the heterogeneous collection of employees handling our food in cafeterias, the wonder grows that we escape dysentery at all. Many of these employees are transients coming from areas where dysentery is rife. We have no adequate system of supervision at present. The same applies to our summer camps, many of which have little or no efficient supervision. They are often established in areas where the water supply may fail or contamination occurs from privies or poorly disposed sewage. Our summer camps are really little communities in themselves, subject to the same hazards as towns and cities. Their period of existence, however, is brief and the burden of control often rests on poorly equipped or inefficient local health departments. This problem has been under consideration for many years by state health officials and camp owners, but it has not been adequately solved. Similar conditions prevail in many summer hotels. "When in Rome, do as the Romans do" is pretty poor advice when it comes to bacillary dysentery. The natives may have had the disease and are now relatively immune. Fingers and flies are merely vehicles of transfer. The remedies are thorough washing of the hands with soap and water before handling food and the elimination of flies by screening and the destruction of breeding places. It is surprising that many who are meticulous at home suffer a complete letdown at vacation resorts or other places away from home, when a little intelligent foresight might prevent serious illness. If you are greeted with "Diarrhea, why that's nothing! Every one gets it when he first arrives, until he gets used to the water," do not unpack your bags! You are better off at home, protected by your health department, which functions all year round.

Education and isolation, constituting the fifth point in our program, are the real reason for writing this article. What is simpler than cleanliness? What is easier than isolation? They are the keys to the prevention and control of all infectious diarrheas. By observing the simple rules for avoiding bacillary dysentery we may avoid amebiasis, typhoid, paratyphoid and a host of other intestinal infections, all cousins under the skin in that they are contracted in a similar manner. The time to start is when we are young. A single pre-vacation talk to school children and college students would be valuable. Educational films are most instructive, particularly those of the type, "Hand to Mouth," which was shown at the New York World's Fair. This was produced through the cooperation of the Bronx Hospital in New York and the Federal Art Project as part of the educational program of the Dysentery Registry and presented accurate information in an interesting manner.

No health organization can function efficiently unless our citizens observe the rules laid down for their protection. Where unsatisfactory conditions prevail, citizen interest will effectively remedy them. Procrastination is fatal, as shown by some of our worst epidemics. The time to put out a fire is at the beginning, when only a pail of water is needed. The time to stop the spread of dysentery is at the start. Act quickly and with firmness. Isolate every person with diarrhea until the fecal cultures prove negative. Insist on the cultures. If they prove negative, the only inconvenience is a few days spent apart from others, the use of individual eating utensils, sterilization of all contact articles by boiling and the liberal use of soap and water.

We come now to the hospital epidemiologist. Hospitals and other institutions differ in no respect from small communities. In fact, the hazard is greater in hospitals, since sick people with undiagnosed illnesses are frequently admitted. Outbreaks of bacillary dysentery do occur with disturbing frequency. The hospital epidemiologist is autocratic. He isolates patients with diarrhea as soon as they are admitted, cuts all red tape, publicity complexes and procrastination. He does not wait until an outbreak occurs but bends his energies to prevent one. The system of isolation of diarrheal admission cases, periodic monthly cultures of all foodhandlers and of lay and professional personnel on the obstetrics and pediatrics services of the Bronx Hospital has proved simple, inexpensive and most effective since its inception in 1934.

Mention should also be made of the newer advances in prevention and treatment by means of specific vaccines and serums. Bacillary dysentery is completely preventible by ordinary, well recognized hygienic and sanitary measures. However, their non-observance will always be a cause of dissemination of the disease. Experimentally, there is conclusive evidence that the serum of immunized rabbits will protect susceptible white mice against several fatal doses of dysentery germs. Increasing data in human investigation point in the same direction, although these are as yet too limited to be conclusive. Immunization by vaccination is being used effectively, according to recent reports, in many parts of the world. In outbreaks, immune rabbit serum and convalescent human serum offer new possibilities in the prevention of bacillary dysentery, particularly in babies. Lastly, a new drug, sulfaguanidine monohydrate, holds some promise in curative therapy but is still in the experimental stage. No discovery, however, will change the fundamental concepts of hygiene and sanitation essential for the prevention of bacillary dysentery.

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Back of everything your doctor does

You take your doctor's skill for granted—and there is every reason why you should. It is reassuring to know that back of every prescription he writes—or the smallest bit of surgery he performs—there is a wealth of scientific knowledge.

An infected wound, for instance, almost certainly involves the application of bacteriology. A digestive disturbance draws upon your doctor's knowledge of biochemistry. Any physical change in the body caused by disease comes within the science of pathology. These are but three of the twenty or more medical sciences your doctor knows intimately and uses in his profession.

In addition, he borrows from other fields. The repair of deformed or broken bones and joints is based upon several well-known principles of mechanics. The use of x-rays, fever therapy and electrocardiograms of heart action requires a fundamental knowledge of high-frequency currents, electrical amplifiers, and even of photography.

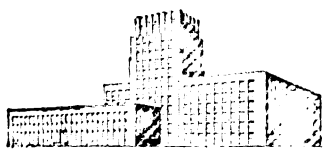
Your doctor is seldom called upon for more than a fraction of his knowledge in the treatment of any single case. But, since he never knows what problems the next case will present, he keeps abreast of new developments not only in medicine but also in allied sciences.

Medical advice based on a foundation so comprehensive is available to you through your physician. He should be consulted in all matters pertaining to health.

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Handicapped Children

First problem for parents of handicapped children is to accept the defect frankly and resolve to make the best of it, says RUTH E. BECKEY in the first of a series of articles about handicapped children.

"MY CHILD IS DIFFERENT from other children," is an admission which is very difficult for most parents. Even though the child has a pronounced defect, the parent is often slow to admit the failing even to her close friends. However, the best mental approach to the problem for both the parent and child is to accept the situation and make the best of it.

What children are considered seriously handicapped, or differ enough from other children to make adjustments to life very difficult? These children may be classified in four different ways. Perhaps the largest group includes the physically handicapped—the crippled in body, the blind and the deaf. The crippled refer to those children who have lost arms or legs as the result of accident or disease, to those children who have become crippled as a result of brain injuries or paralysis, or to those who are extremely weak in health.

The second group may include the mentally deficient children, or those who cannot compete satisfactorily in educational pursuits with the majority of other children. The wise parent is eager to find the real reason for his child's difficulty and will welcome the cooperation which the school psychologists can give him in ascertaining what type of work the child should do. The results of an intelligence test are interpreted in terms of the child's educational progress. It measures his intellectual power and not his ability to use his hands in the various skills, nor does it measure his ability to get along with people in social situations. Such tests, however, help the teacher and parent to work together efficiently, thereby giving the child an opportunity to do work suitable for his mental abilities.

A third group includes those handicapped children who have unsocial behavior. They may lie, steal, fight or withdraw entirely from any social situation. Sometimes the child may become so unmanageable that the parent has to seek the aid of some juvenile delinquency officer. Usually, however, the parents and teachers can adjust most behavior problems before serious consequences result. Parents often take injurious attitudes toward the child who develops a form of unsocial behavior. One group of parents refuses to recognize the annoying problem, and the child goes from bad to worse until he may become uncontrollable. A second group of parents may become too interested in the child's welfare. They read every book on habit formation and try to apply all the principles to the child. As a result, the child may try to get away from so much domination. He resents too much attention! The mother may then say, "I can't understand Patty. I have done everything I can to keep her from sucking her thumb—and look at her!" Too much attention!

Other parents know that the child will naturally pass through difficult periods but will not worry too much about them, allowing the child to find his own way as much as possible. An occasional guiding word setting the stage for good behavior will in many cases be enough to help the child to become adjusted to difficult situations.

The fourth classification of handicapped children may be composed of a combination of physical, mental, and psychological maladjustments. Under this heading language disabilities may be found.

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Speech defects and reading difficulties are the principal problems. The causes of these disorders are often overlapping, and no one factor may be said to cause a speech defect or reading disability to the exclusion of all others.

In the analysis and classification of all four groups of handicaps, the physician is the foremost consultant. Not until he is consulted can the educational director proceed with her program of reeducation. Due to the child's physical condition, there must be a close association between the physician and the teacher at all times. Until quite recently, however, the activities of the handicapped have been under medical supervison entirely. The necessities of life—food, shelter, and medical service—have been provided. State and national education departments have developed facilities for the care of some of the various groups of unfortunate children, but the development of a mental hygiene program for the child and his parents seems to be the most neglected. The child can be well fed, well housed and well cared for in every way physically and yet remain unhappy. He has not learned to live with his handicap.

"I can't dance like the other girls. What's the use of living?" was the wail of one spastic high school girl after seeing a beautiful evening gown on one of her girl friends. This girl was beginning to realize that she was different from other girls, and as a result she withdrew from social activities altogether and became dependent on her mother. She was unwilling to accept the reality of her situation.

How to be happy with a serious handicap is the problem! To be happy, the child must have the right attitudes toward his deficiency; he must be healthy mentally. He is not mentally healthy until he is able to adjust himself to his environment with the least friction and at the same time find his life highly satisfactory and pleasant. A mental hygiene program for the handicapped child is not essentially different from that for the normal child, since both groups are motivated by the same fundamental human drives. All children want to be loved, to belong to some one, to achieve success, to gain approval and to feel security emotionally and economically. The child also wants

Is *YOUR* Child One of This Appalling 70 Per Cent?

THE CHICAGO DAILY NEWS

Faulty Shoes Found Worn By 70 Per Cent of Children

Approximately 70 per cent of Chicago school children between the ages of 5 and 15 wear shoes that fit badly, it was indicated in a survey of two schools published in the current Clinical Journal, monthly chiropodist organ.

The survey made by Maurice ... years. Faulty locomotor function seems to be closely linked with mental and physical ill health, and general letting down of natural alertness, even to the extent of seriously impairing a child's ability to learn or an adult's ability to perform his work efficiently."

This figure does not apply to Chicago children alone. A similar study published by one of America's foremost weekly magazines reveals that 75% of ALL school children are wearing misfit shoes! What can you do about it?



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For all baby's things



to feel well physically. However, since the adjustments to life are often difficult for the handicapped child, he will frequently resort to some defensive mechanism which will help him to escape from the reality of his true condition. He may develop bad, anti-social habits of lying, stealing, negativism, temper tantrums or daydreaming. He may compensate for his lack of reading ability by drawing or building in the shop. Moreover, instead of admitting his true handicap he may rationalize and blame his backwardness on some other factor.

What should the handicapped child do to make himself happier in his environment? All mental hygiene for the child is based upon his need for security—emotionally, economically, physically and socially. Certain attitudes and substitute activities may prove valuable to him in his attempt to become adjusted to his handicapped condition. If the substitute activity, however, does not solve the child's particular problem, then that method of adjustment to life becomes entirely undesirable and even harmful.

Most important of all, the child should face the reality of his situation. He must realize that he cannot do some things. He should find the things he can do well and do them! He must learn to accept his limitations and try not to exceed his physical and mental capacities. If this is done, rationalizations or excuses for his inferior performances would not have to be made. Sometimes substitute activities are advisable, as long as the child does not dodge the real problem. Compensation in some other field also helps the child to forget his own shortcoming. However, the improvement of the handicap should not be neglected for the development of the other field.

The child must learn to live in a normal society, as most of his activities will be with normal people. He should feel that he is normal in any situation not demanding the use of his special deficiency. For instance, the child without the use of his legs cannot usually be expected to enter strenuous physical activities with his normal playmates, but he can perform in intellectual functions with them.

In order to become socially secure, the child needs to develop an attractive personality to offset any unpleasant appearance or effect he may have. For instance, he should learn several interesting and profitable hobbies. He should learn to read, so he can take part in conversations. Society will often overlook physical defects in a person, when that person has achieved a charming personality. In other words, "What you *are* speaks so loudly, that they do not observe your imperfections!" Early application of proper mental hygiene for the handicapped child will usually prevent the personality maladjustments so often accompanying physical deficiencies.

In addition to helping the child maintain a stable mental balance, the parents also need to apply some mental hygiene to themselves. They need encouragement. In many instances, they are more unhappy than their handicapped child. They realize what problems life holds for the normal person without any handicaps, and what complications are added when the child has to live with a handicap too!

The parents' most difficult period occurs when they realize for the first time that their child has a severe handicap and is different from other children. Emotionally they are upset so much that they are unable to help the child who is also going through a difficult situation. The parent needs to be ready to help the child reorganize his whole life, especially if the affliction has occurred rather suddenly.

The child should be prepared for the difficult periods of adjustment in his life. During adolescence, he will want many things that will be impossible for him to have, and unless he is prepared to meet these situations, he may grow unhappy and develop some unpleasant personality problem. He must also be prepared for the period when he will leave the protection of the school and must look for a job. He must know that people will not be too eager to hire him even though he is capable of doing the work as well as his normal friends.

As the child must, the parent must also face the real situation. He must admit to himself that his child *is* different from other children. Failure to do so may prove harmful to the child. One parent —a superintendent of schools, too —refused to admit that his oldest daughter had a severe hearing defect. He would not allow his wife

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to send the girl to any special school for treatment. The mother, knowing that the child needed help very badly, finally had to resort to divorce before she could have her own way with the handicapped child.

Parents should also try to treat the child as though he were normal. Feeling sorry for him will not help; too much attention may cause the child to lean too heavily on his parents for help. Some children have grown entirely helpless as the result of too much parental solicitude. The parent may find out what his child wants and needs, though he should supply these wants and needs in much the same way as he does to the normal child.

In case the parent needs further help, he may consult the superintendent of schools in the city or county where he lives. The superintendent should know what special classes or schools exist for the handicapped child. Other agencies which are ready to help are the health centers of the city or state.

Dr. Beckey's next article, dealing with the problems of parents whose child is afflicted with spastic paralysis, will be published in an early issue.—Ed.

Hospitalization Insurance

(Continued from page 203)

that the premium rates be sufficient to cover the benefits offered, and if maximum benefits are not stated it becomes necessary to exercise control over the amount of service provided. Insurance companies organized on the assessment plan are able to meet this problem through their privilege to assess additional premiums if the regular premiums are not sufficient to cover expenses. From the selling point of view, it is more desirable to restrict benefits than to raise premium rates; thus subscribers to low rate hospitalization insurance policies with mutual benefit associations often find that there are greater restrictions on claims than they anticipated. In fact, it must be borne in mind that all hospitalization insurance contracts are limited contracts.

PLANS COMPARED

The hospital service associations offer coverage to dependents at lower rates than insurance companies. The insurance company policies, however, usually provide benefits for a longer period—31 to 70 days, compared to 21 to 30 days for the associations. Insurance companies have also enjoyed an advantage in their ability to offer surgical benefits, although this advantage is decreasing as more non-profit medical service plans are organized by the medical profession to provide surgical service on a prepayment basis to employed groups. Insurance companies endeavor ultimately to show an underwriting profit, and their acquisition costs are usually higher than non-profit associations because of competition between companies and duplication of sales agencies. However, insurance companies utilize already organized sales agencies and personnel, whereas non-profit plans must form their own acquisition organizations.

The non-profit hospital service associations for the most parts are exempt from state, county, district, municipal and school taxes. This enables the non-profit plans to use a larger part of the premiums to pay for services rendered to subscribers. Although the non-profit plans claim to be social welfare agencies, the indemnification of loss due to hospital confinement is an insurance function, and any plan must be prepared to meet the difficulties inherent in casualty insurance. Casualty risks do not have the scientific basis of life insurance, and inexperienced management or unsound underwriting may disrupt the financial status of the program before the necessary changes can be made.

FUTURE OF VOLUNTARY PLANS

Either type of hospitalization insurance is prepared to make benefits available to eligible employed workers at reasonable costs. As

(Continued on page 226)



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H. Armstrong Roberts

CRITICAL PERIODS IN BREAST FEEDING

By FRANK H. RICHARDSON

BREAST FEEDING is indisputably the best kind of feeding for a baby, and although possible for the great majority of mothers it is not always to be obtained without effort. The best and easiest way of insuring this is for the mother to place herself unreservedly in the hands of her physician, with the determination to take her baby to him at regular intervals and follow his instructions conscientiously.

The physician will prescribe the time intervals at which the baby is to be fed, the composition and preparation of such complementary feedings as the baby should have, and the choice and care of the bottles and nipples. He will demonstrate the simple but essential procedure of manual expression, and he will explain and regulate the details of management that frequently spell the difference between success and failure in the technical business of maintaining breast feeding.

He will tell the mother when she is to bring the baby to his office to be weighed and measured. He will note the baby's physical growth and mental and emotional development. He will inquire about the important though seemingly insignificant little events that have occurred between visits; he will order such changes in diet, clothing, and general management as he finds necessary from time to time. Not the least of his functions is the important task of warning the mother that there will be many times when she may be tempted to give up nursing her baby because she feels that her supply of milk is diminishing and may be about to disappear. He will tell her well in advance of their appearance that there are certain times when a decrease or even temporary disappearance of her milk supply is to be expected.

If the mother knows this and expects it to happen and realizes that it is only temporary, she will not be upset when the time comes. Instead, she will meet the situation as her doctor has told her to, by allowing the baby to take as much as he will of the complementary feeding which has already been prescribed. Assured that the amount of her own milk will quickly build up to normal, she will not allow herself to be stampeded into premature weaning or even to worry and thus further diminish her supply.

The following have been noted as times when the fate of breast feeding is very likely to tremble in the balance, especially with mothers who have not been told to expect diminution at these critical periods:

1. *When the milk first comes*—two, three or four days after the birth of the baby. This used to be even more common when many people thought a "good dose of castor oil" facilitated the return of the mother to health and the removal of waste products of labor and delivery than it is today, when that good old custom has been allowed to fall into the discard.

It is made more acute when some officious friend suggests a strict limitation of liquids or when an oversympathetic neighbor or nurse binds up the breasts, which become uncomfortably full and tense, with a tight breast binder. *Letting things alone* is all that is required for the

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amount of milk secreted to become sufficient for the child and not excessive. All these measures are only too successful in relieving the discomfort of the breasts—and with it the adequate flow of milk causing the slight inconvenience that is easily borne when a mother realizes how transitory it is.

2. *When she sits up for the first time* after the birth of the baby. The weakness and giddiness accompanying the shift to the vertical after her long time in bed are enough to account for this.

3. *When she first gets out of bed.* Even more to be expected is the decrease due to this effort and its consequent fatigue and nervousness. These yield quickly as the flow accommodates itself to the changed conditions that may cut it down for a few hours.

4. *When she returns from the hospital,* if the baby was born there, or *when she lets the nurse go,* if the baby was born at home; and assumes the responsibility she laid down a few weeks earlier. In either case the work and worry attendant upon directing her household and the care of the new baby produce fatigue and discouragement, with their inevitable lessening of the milk flow.

5. *When menstruation is reestablished* and starts again for the first time. The dreaded so-called "menstrual milk" that the old time nurses used to consider poison for the baby is nothing more than a decreased milk supply due to loss of the fluid constituent of the sanguinous discharge from the body. To be sure, the baby cries; but it is because of the perfectly natural hunger that ensues from the lessened amount and not from any faulty quality of the milk itself.

6. *When excessive perspiration, diarrhea* or any other *draining of fluid from the body* causes a decrease of fluid available to make milk.

7. *When loss of sleep or rest, worry, or extra work brings about excessive fatigue.*

8. *When a nervous shock or emotional strain* comes to a nursing mother.

It is not difficult to see that one or two factors appear in each of these situations; with the exception of the last one mentioned (nervous or emotional shock), either fatigue or a decrease in the amount of body fluid, or both, is the causative factor.

The treatment is obvious. If fatigue is present, as it has been found to be so commonly among first year mothers, it must be cut to a minimum; other members of the family must be made to realize how necessary it is that the nursing mother have adequate sleep and rest and whatever assistance is necessary in order to guarantee these for her. Just as the cow that is hitched to the plow in backward countries of Europe and Asia cannot compete in milk production with the leisurely, browsing American dairy animal, so the harassed, overworked mother cannot be expected to supply sufficient milk for her nursing baby.

The treatment of the second factor, decrease in body fluid, is quite as obvious. All that is necessary is to increase the mother's fluid intake, and at the same time make up for the temporary diminution of milk secretion by giving water after each feeding, or, if that proves inadequate to satisfy the baby's hunger, by adding the complementary feeding that the doctor orders.

Simple and logical as all this seems when explained, it is not nearly so obvious to the worried, harassed mother, who is considered fair prey for every amateur adviser who ever had anything to do with a baby. Her only safe course is to turn a deaf ear to all these volunteer counselors and take all her orders from the physician who has been trained to diagnose conditions and apply a scientific remedy.

To be sure, many mothers will go through the nursing period without serious upsets, though it is safe to say that probably no woman goes through the five, six or seven months of lactation without some anxious times. But the solicitous doctor can do so much to minimize this anxiety, and can be so valuable in insuring the continuance of breast feeding as long as he believes it is desirable, that it seems foolish indeed for the modern mother to attempt to get along without his services.

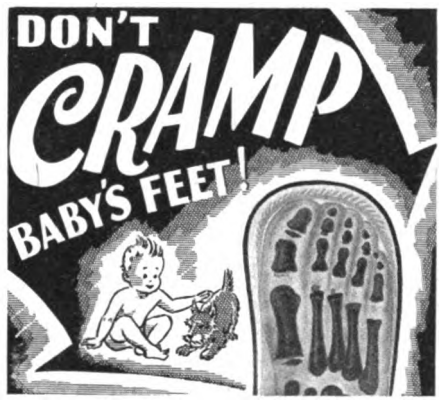
Of course, there are other things which he will watch carefully and provide for. We have not mentioned the administration of protective inoculations, interest in which is increasingly pre-empting



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Every nursing mother is entitled to the results that *supervised breast feeding* brings in health and happiness for herself and her baby. The physician is the only person who can render such supervision. He wants to give it, but he is powerless to provide it except as the mothers in his practice ask him for it and will cooperate with him by carrying out the procedures he directs. The cost in money, time and effort are negligible in comparison with the benefits that flow from proper supervision of the critical periods in breast feeding.

Hospitalization Insurance

(*Continued from page 223*)

part of a general social security program, voluntary hospitalization insurance with surgical benefits has many advantages over compulsory governmental insurance. The lack of basic actuarial data and experience on changes in the demand for hospital service which take place under a prepayment arrangement make it desirable to obtain such data through experiments now being conducted. The provisions of voluntary plans can be changed more readily than those of compulsory plans established by law. Under voluntary plans as now conducted, control of the hospital and medical services remains with the hospital administrators and the medical profession. This is essential for the maintenance of the quality of service provided. Consequently, it is important to the subscribers to such plans that the medical care be under the direction and control of physicians, since lay administrators concerned primarily with the financial side of the program might attempt to lower the quality of medical care or restrict the benefits in order to make a better financial showing.

It appears that there are opportunities for the voluntary hospitalization insurance program to be extended to a larger proportion of the people in the low income group if those who are interested in this movement can establish and maintain the necessary enrollment and premium payment arrangements to fit the public need, and if they will, at the same time, maintain high standards in the quality of service rendered under insurance agreements.

SULFAPYRIDINE FOR PNEUMONIA IN CHILDREN

Results obtained from the use of improved methods, chiefly sulfapyridine, in the treatment of pneumonia have sharply reduced the death rate from this disease among children during the past fourteen years, Craig D. Butler, Noel G. Shaw, Samuel J. Hoffman, Sol Ditkowsky, Emerson McVey and Mary Zeldes, Chicago, point out in *The Journal of the American Medical Association.*

Sulfapyridine was the sole treatment in 87.1 per cent of 731 cases of pneumonia in children aged 1 to 13 years, serum and sulfapyridine was used in the treatment of 2.6 per cent and nonspecific treatment in 10.2 per cent.

The total death rate of this group, treated in Cook County Hospital, Chicago, in 1939-1940, was 2.7 per cent. In 1938, prior to the advent of specific treatment, the death rate in 441 cases was 6.6 per cent. In 1926, the rate among 442 children was 15 per cent, it is pointed out in the study.

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Hospital Facilities for Boom Towns

(Continued from page 200)

Under the provisions of the Lanham Act, money may either be loaned or given in an outright grant to public or even private non-profit agencies out of the $150,000,000 fund whenever the President finds that additional community facilities are necessary in areas where national defense activity has unduly increased the population.

Congress realized that hospital facilities could not be increased in these boom areas without imposing an excessive tax burden on the citizens of the areas or an excessive increase in the debt limit of the public bodies desiring to build the hospitals, unless the federal government stepped in to help. Consequently broad powers were given to the Federal Works Agency in the Lanham Act under which the government itself in certain instances could construct and equip the hospitals, retaining title to the structures but leasing them and the equipment, at a nominal rental, to the community or non-profit organization desiring to operate them.

An example of such a federally constructed hospital is the project recently approved for Fayetteville, N. C. This calls for the construction and equipment of a hospital building at a cost of $400,000, the federal government erecting the structure and leasing it fully equipped to the county which will operate it, at a nominal rental. The federal government will retain title to the completed building. Fayetteville is in Cumberland County, N. C., which had a population of 59,320 in 1940. The population is expected to exceed 114,000 by the first part of 1942, because Fort Bragg with a military personnel of 60,000 is located within this area. Hospital facilities are wholly inadequate, not only for defense workers and their families who reside in the vicinity but also for the families of the military personnel.

Another method of assistance to defense area communities possible under the Lanham Act is that of an outright gift or grant of federal funds for hospital construction and equipment. An example of this is found at Jeffersonville, Ind., where defense activities at the Indiana Ordnance Works, the Hoosier Ordnance Plant, and the United States Quartermaster Depot greatly increased the normal population of the community. The Board of Commissioners had some funds to use but not enough to build and equip the 85 bed addition to Clark County Memorial Hospital needed to take care of this increase in population. The estimated cost of the addition was $190,000, so the federal government made an outright grant of $165,000 toward the project, the county furnishing the rest.

The federal government under the Act also has the power to grant outright a small portion of the cost of the project and at the same time loan the rest to be repaid over a period of time. An example of this is the project at South Weymouth, Mass. Defense activities served by the Weymouth Hospital are Bethlehem Shipbuilding Corporation, Naval Munitions Depot and many industrial plants, all of which have recently expanded tremendously in size. The 1940 population of South Weymouth was 19,994, and during the first part of 1942 it is expected to rise a little over 100,000. The present hospital has a 74 bed capacity, and the project will add 26 beds and 18 bassinets. During the first six months of 1941, the hospital had to refuse admission to 103 emergency patients, so it is obvious that the need for additional hospital capacity is really acute in this area. The estimated cost of the project is $150,000, the federal government making an outright grant of $40,000 and loaning the remainder.

Most of the areas having Army camps or expanded defense industries in their immediate vicinity found they lacked sufficient hospital facilities to take care of the added population. When the Lanham Act was passed in June 1941,

(Continued on page 239)


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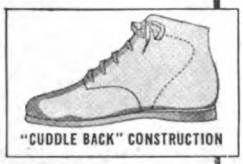
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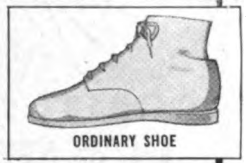
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How Well Do You Know Your First Aid?

(Continued from page 178)

Answers

1. c	6. c
2. c	7. b
3. d	8. d
4. e	9. c
5. b	10. b

1. Although lard and other nonsalty fats were formerly approved as home remedies for burns, many doctors now prefer nongreasy applications. Greasy ointments and cooking fats interfere with subsequent medical treatment and must be entirely removed before the physician can apply his medications. For this reason the best home remedy for burns is in the form of a solution, and baking soda is the substance which gives the greatest relief.

2. Rubbing frozen tissues injures them to such an extent that gangrene often results. Exposure to sudden heat is extremely painful and may even be injurious. Therefore the best treatment for a frostbite is gradual warmth, and the best means of obtaining this is through contact with a warm part of the body, such as the hand, the arm pit, or between the thighs.

3. Although one would surely like to identify a hit run driver if possible, the first aider's immediate responsibility lies with the victim. Since to move him when he might be suffering from broken bones or internal injuries may cause further injury or even death, the thing to do first is to examine him very carefully and very gently to discover the nature and extent of his injuries. Not even a stimulant should be given until it is certain that he is not suffering from hemorrhage, either external or internal, and that he has no head injury.

4. Hemorrhage, or severe bleeding, is always accompanied by shock. Since this means that there is danger of the patient falling unconscious it is well to prevent such an occurrence by making him lie down. Elevation of the arm will help to reduce the flow of blood, but the only way to stop it entirely is to press directly on the artery from which the blood is escaping. In order to do this effectively it is necessary to find a point where this artery can be pressed against bone. The best place to press on the arm artery is a hand's breadth below the arm pit, on the inner surface of the upper arm. There is no other spot on the entire arm where the artery can be easily located and pressed against bone.

In the case of this boy, pressure on the veins at the wrist would not stop the bleeding because the bleeding is coming from an artery, not a vein. We know this because we are told that the blood is spurting from the cut, and only arterial blood spurts. If the blood had been flowing smoothly it would have been coming from a vein, in which case pressure either directly over the cut or on the side away from the heart would have been the proper treatment. The explanation to the answer of question number 10 will tell why a tourniquet should not be used.

5. This is a case of shock, and the danger is unconsciousness and prolonged shock. To prevent this, three steps are necessary, namely (1) making the patient lie down with the head low, (2) keeping her warm by means of warm covers and hot drinks, and (3) administering a stimulant. For the latter, aromatic spirits of ammonia, hot tea, hot coffee, even hot soup, are all acceptable. Tea is suggested here because it is probably the easiest drink to prepare and it serves the double purpose of supplying both a stimulant and warmth.

6. This person is suffering from heat exhaustion, a condition very similar to shock, but caused by extreme heat. The treatment is the same as that for shock. In addition to this, salt is often given in small but frequent doses, usually dissolved in water. This serves to replace the salt lost through excessive perspiration.

7. Both heat exhaustion and heat stroke are caused by excessive heat, but the symptoms, and therefore the treatment, are totally different. In this case the person is suffering from heat stroke. Since the skin

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is hot and dry and the head is hot, it is imperative to apply cold, wet cloths. A stimulant must not be given, because there is already too much blood in the brain. More might easily prove fatal. For the same reason the head is supported above the level of the body.

8. The only chance for saving the life of a person whose clothing is on fire is to keep the flames away from the face in order to prevent the victim from inhaling them. Since flames leap upward very rapidly it is necessary to throw the person down. The best way then to extinguish the flames is to smother them by wrapping a rug or blanket around the person's body, wrapping from the head toward the feet. If the rescuer attempts to wrap a blanket around a person who is standing there is great danger of driving the flames up to the face before they can be extinguished.

9. When a fracture is suspected it is imperative that the patient not be moved until a splint is applied. If there is no necessity for moving the patient before the arrival of a doctor there is no necessity for the first aider to apply a splint. It is important, however, to treat for shock and to put the patient in the most comfortable position possible, making sure that there is no danger of the injured member moving inadvertently.

10. Since a tourniquet is difficult to apply correctly, and since its use is accompanied by a certain amount of danger, under ordinary circumstances it should be used only as a last resort, after pressure on the pressure point has proved ineffective. It should also be noted that the use of a tourniquet is limited to the arms and legs, it not being advisable to tie a constricting bandage around the head or neck!

RELEASE OF TOURNIQUET

In case a tourniquet is applied for the control of arterial hemorrhage, it is wise to release the tourniquet for a few minutes at thirty minute intervals, *The Journal of the American Medical Association* says in answer to an inquiry. If the extremity is packed in ice, the time interval can be safely extended to one hour. First aid manuals which emphasize the necessity for periodic release but fail to give the specific intervals leave a doubt as to the safest practice, it is pointed out.



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BOOKS ON HEALTH

Personal Problems of Everyday Life

By Lee Edward Travis and Dorothy Walter Baruch. Cloth. Price, $2.75. Pp. 392. New York, London: D. Appleton-Century Company, 1941.

Most of the books written to aid the mildly maladjusted in solving their problems have been of two kinds. One kind merely translates the contents of textbooks on psychiatry into lay terms; the other kind is the "self-treating" variety. The first type usually is so coldbloodedly presented, so systematically devised, that the patient often has either a suggestive or negative reaction; that is, he sees in himself symptoms of all of the diseases, or else he finds nothing in the books to aid him. The books which are written primarily to enable the patient to help himself are, as a rule, highly sentimental and unsound. They usually contain the sort of advice that the prospective mental patient or the maritally maladjusted person can get from his minister or even from a meddling neighbor.

The present volume, however, is an improvement on previous books containing advice to the layman. It is made up of three parts: The first is a simple, rather logical but too superficial discussion of mental processes which are currently a source of interest to psychiatrists and others who have to do with the study of the subconscious mind, emotional conflicts, and psychological material of a clinical nature. The second part brings these general conflicts down to earth in extensive chapters on child guidance, guidance of the adolescent, solution of marital problems, and the solution of mental hygiene problems due to illness. There is also a chapter on leisure time activities and the mental hygiene of work. The third part is the one place where the book differs most markedly from its predecessors in that, while it advises the patient on simple procedures with regard to healing himself, it is devoted largely to advising the patient how best to get professional help by going to a psychiatrist or psychologist. The authors recognize the differences in training and experience between the psychiatrist, psychoanalyst, and psychologist and make this difference stand out clearly. There is little attempt to encroach on the psychiatrist's field—although this might have been anticipated, since Dr. Travis is a clinical psychologist.

LOWELL S. SELLING, M.D.

From Cretin to Genius

By Dr. Serge Voronoff. Cloth. Price, $2.75. 281 pages. No illustrations. New York: Alliance Book Corporation, 1941.

This volume presents the author's philosophy of the relation of mind to brain and of the origin and nature of genius. His interpretation of mental life is that of a radiation emanating from the brain. Mind is, therefore, one species of material and is indestructible. Genius is distinct from exaggerated ability in its inherent capacity to do things with little or no training, its precocious appearance early in life, the frequency and ease with which material from the subconscious mind comes into conscious thinking, and the essential creative way in which new mental processes appear. The role of chance in creative processes is described, and the author spends much time on the struggle which genius has in getting recognition for its discovery.

It is interesting to note that frequently the author tacitly identifies himself with the whole group of people who are designated as genius by using incidents from his own life to illustrate these processes. It is apparent that one aspect of the book is an autobiographic attempt at self-justification—including what he has done with gland transplantation and rejuvenation on the basis of the introduction of gonads into the senescent adult.

From the title one would expect much discussion about cretinism. Of this there is very little, and most of that is not based on evidence which would convince a reader experienced in the field of endocrinology, except on the obvious matter of the association between cretinism and complete lack of thyroid secretion.

E. L. SEVRINGHAUS, M.D.

Understanding Yourself

By Ernest R. Groves. Cloth. Price, $2.50. Pp. 279. New York: Emerson Books, Inc., 1941.

Written by the professor of Sociology of the University of California, this book is intended for the general reader who seeks to understand himself and his problems of personal adjustment. It is ambitious in scope, attempting to outline comprehensively the determinants of personality development and social adjustment. The physical organism, the endocrine system, the role of the nervous system and the body-mind problem are explained or discussed. The reader is informed of the cultural and social influences that serve as background and environment, furthering or disturbing the development of the maturing personality. He is taught something of our modern dynamic psychology, given a glimpse as well into the modern methods of psychotherapy designed to promote mental health. He learns something of the significance of childhood experience and its influence for good or ill on subsequent emotional and social development. Sexual interest is discussed under the title, "Sex, Friend or Enemy."

The book reveals a sound understanding on the part of the author of the nature of emotional and social development and of the influences that promote or deter mental and emotional health and stability. No fault can be found with the facts he marshals, and his attitude and point of view are those of the seasoned and experienced student of human behavior. Yet it is to be questioned whether this book can

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achieve very much for the general reader. In his interest to avoid scientific terminology and to maintain an ethically elevated plane of discourse, simplicity and clarity have, at times, been sacrificed. Stylistic peculiarities have the same effect. Adolescence is referred to as "The Fateful Passage," sensory organs as "The Windows of the Mind"—picturesque, but it doesn't add up well as one reads the book.

The almost total lack of any examples or illustrations of the author's meanings, readily available out of his practical experience, is a weakness of the book. A book on the mental hygiene of personality should, part of the time, talk about real, live people, who serve to give life and meaning to the principles laid down by the author. There is an atmosphere of unreality that does not do justice to the author's broad experience and familiarity with his subjects.

GEORGE J. MOHR, M.D.

Our Sex Life

By Fritz Kahn, M.D. Cloth. Price, $5.75. Illustrated. Pp. 459. New York: Alfred A. Knopf, Inc. Revised Edition, 1942.

Perhaps the chief difficulty with books on sex is that young people are inclined to read them frivolously, and mature men and women genuinely needing information or advice find it hard to rearrange established patterns of thought and action, thus translating instruction into practice. All the specific information and practical suggestions that help to minimize these difficulties are present in Dr. Kahn's book—for the reader who will take enough pains to search them out from their camouflage of diffuse philosophy and language that is often, to say the least, extravagant.

Conventional organization into chapters on the sexual functions, intercourse, hygiene, fertility, sex disturbances, diseases, prostitution and education, competently cross-indexed, assists the reader seeking solution to a specific problem, but elaborate literary introductions and side-trips into the arts and classics, intended no doubt to demonstrate how sex is woven into the whole fabric of human life, tend to interrupt if not to confuse. Discussing the physiologic and even the psychologic aspects of the practice of contraception, Dr. Kahn is marching. It is too bad that he felt constrained to bear off the point in a long tract on the economic, sociologic, philosophic and religious significance of birth control. And when his extraneous views conflict with the reader's—as they are bound to, for example, when he says flatly that "there is no creature more useless than a genius"—confidence in his judgment is undermined to the point of rendering ineffective the excellent advice which he offers when he stays on his side of the street.

R. M. CUNNINGHAM, JR.

Fatigue of Workers, Its Relation to Industrial Production

By the Committee on Work in Industry of the National Research Council. Cloth. Price, $2.50. Pp. 165. New York: Reinhold Publishing Corporation, 1941.

This book will be of great value to every one interested in business management, industrial relations and personnel counselling. It will be of interest to the general reader because it illustrates the scientific approach to such problems as the employee-employer relationship and the improvement of working conditions. For the ordinary person who has wondered how a national committee of scientists attacks such an intricate physiological, psychological and social problem as the relation of the fatigue of workers to production, this clearly written summary of the proceedings of the committee will be a revelation. The reasons for lack of cooperation between management and labor and the effect of working conditions on physical and mental fatigue and inharmony are exposed. The book contains many important and interestingly illustrated observations which possess the fragrance of common sense and democracy in full bloom.

A. C. IVY, M.D.

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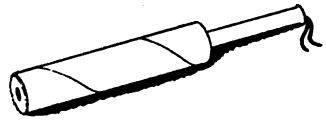
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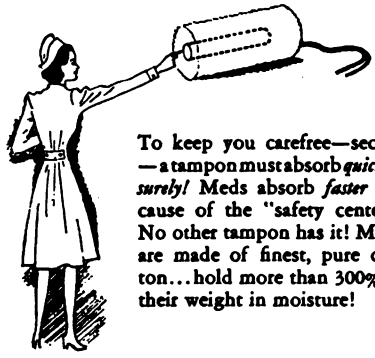
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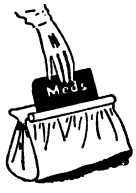


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The Modess Tampons

Worst Foot Forward

(Continued from page 189)

and patterns. In the absence of an accumulation of scientific data on foot characteristics—too large an undertaking for any manufacturer or group within the industry to attempt—it's been uphill effort.

For all the difficulties inherent in manufacturing, however, the major responsibility for sore feet rests squarely on the sufferers themselves. The shocking extent of the public's vanity and ignorance is apparent in the estimate that 70 per cent of the population suffers from foot trouble, a large part of which might be avoided by the simplest care in the purchase of shoes—without any change in sizing practice. Retailers report that many more customers are concerned with the appearance than with the fit of their new shoes, the most common fault being of course the desire to make the feet appear smaller by buying shoes that are too short or too tight, or both. Generally believed to be exclusively a feminine foible, this is held by shoe people to be as widespread among men as among women. Crowding vanity for first place among the public's contributions to its own footaches is the false belief that all new shoes will pinch until they are "broken in." Limping out of the store in shoes that look well and fit atrociously, the customer stifles his groans with the hope that his shoes will become more comfortable after he's worn them a few weeks. By that time, his corns, calluses or bunions will be on the job, and he'll blame them instead of his shoes. A few years of this practice will make his feet hurt—all the way up to his ears—most of the time, but it's unlikely that he will be any the wiser for his experience.

There is no sign that a return to the manufacture of shoes on individual order will result from today's difficulties in sizing and fitting. The buyer doesn't realize that ill-fitting shoes are at the bottom of his aches and pains, to begin with, and he probably couldn't afford made-to-order shoes if he did! Of 1,070 shoe manufacturers reporting to the Bureau of the Census, 300 are said to make 90 per cent of America's shoes—a good indication of the extent to which mass production rules the industry.

Studies by the Bureau of Home Economics indicate that from 20 to 30 per cent of the nation's clothing budget is allocated to shoes. Thus what is for most families a major expense has as its principal result 7 pains for every 10 feet! Hope for improvement is not unwarranted, though, in the opinion of Carol Willis Moffett, collaborator in the Bureau study. Progressive leaders in the industry are awakening to the need for data which may be developed from mass measurements, and from which a pattern of standard characteristics and variations would surely emerge. Such studies have been made to develop size standards for other garments, and while the foot presents difficulties not encountered in the comparatively simple height-girth relationship on which dress forms are based, the Bureau and medical authorities are offering their cooperation to the end that exact measurements may be made in large groups. These measurements, it is felt, would permit the development of standard shoe sizes taking into consideration, in addition to length, width and circumference, such characteristics as the height and curve of the arch and instep, the width of the heel and its contour at the back, length and position of the toes, angle of the inward or outward turn of the front part of the foot from the heel, and—probably the most difficult of all—the compressibility and extensibility of the foot when it is bearing weight.

In the meantime, the greatest contribution to the nation's foot comfort must—and can—come from the people. Once your doctor has told you, as he most likely will, that your foot troubles are really shoe troubles and aren't, like the weather, inevitable, the chances are you can put your sore feet away on a closet shelf for good—and put your best feet forward!

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AT TEACHERS' CONVENTIONS last year, and in talks with individual teachers, many of you made this request:

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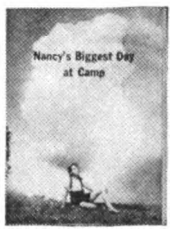
Here is the answer to the assignment. We believe you will mark it *Good*. These teaching outlines stem from the actual experience of teachers who have taught menstrual hygiene successfully and have generously given us their advice and assistance.

Leah L. Anderson
Educational Director

Two entirely new Teaching Outlines

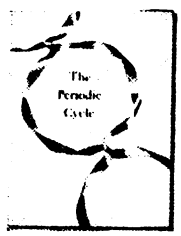
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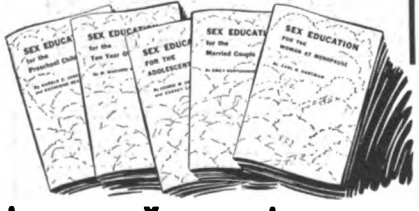
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Adding Stamina to Scholarship

By RUTH RINGLE

YEARS AGO an intellectual was expected to be a bespectacled anemic whose mental development was gained at the expense of physical vitality. We now realize that super-citizens are not only superior mentally but excel physically, and that health culture is as important as mind training for tomorrow's leaders.

The University of California, largest in the United States, had this fact brought out so forcibly thirty-five years ago that it pioneered in student health programs and today has one of the most advanced of any university. Back in 1906 professors were riled by poor class attendance and clamored for strict discipline. A few wise counselors, however, advised a survey to determine the cause of absences and to their surprise found it was illness that kept students from classes.

Determined to do something about this health problem, they began with a simple program of physical examinations for all students. When medical care was needed, a student was advised to consult his own doctor. Financial limitations made it difficult for many students to get the care they should have, however, so the university's health curriculum was gradually expanded, and today it includes not only examination, but treatment and hospitalization. It is a rather costly undertaking, but a lot of money is invested in college educations, and health care has proved to be good insurance on that investment.

The health program at California is under the direction of Dr. William G. Donald and begins with the most thorough physical examination medical ingenuity and apparatus can offer. Superficial examinations reveal only the most obvious disturbances and often fail to uncover insidious and dangerous maladies. Sometimes these examinations disclose infections or organic weaknesses the student does not know he has, such as tuberculosis, diabetes, venereal disease, and even cancer; conditions so serious that a postponed discovery might mean life-long invalidism or even death at an early age.

Young men and women from all over the world are registered at the University of California, but most of the students come from California homes. Suppose we follow a student—John California—as he goes through his health routine. He is an average, 18 year old boy, from an average American home, with a good mind and an earnest ambition to become an engineer. Away from home for the first time, the changes in living conditions, strenuous course of study and excitement of college life will all tax his stamina, and a thorough physical check-up at the start of his college career may mean the difference between enjoyment and drudgery, or success and failure in his studies.

Important to John's welfare and happiness is the discovery and correction of minor defects, so no part of his anatomy is overlooked by examiners, all of whom are experts in their field.

His dental examination is as thorough as competent dentists and x-rays can give, and it may reveal long neglected defects. Records show that about 70 per cent of students entering college have defective teeth, principally caries or pyorrhea.

Eyes get rather strenuous use in college, yet about 10 per cent of

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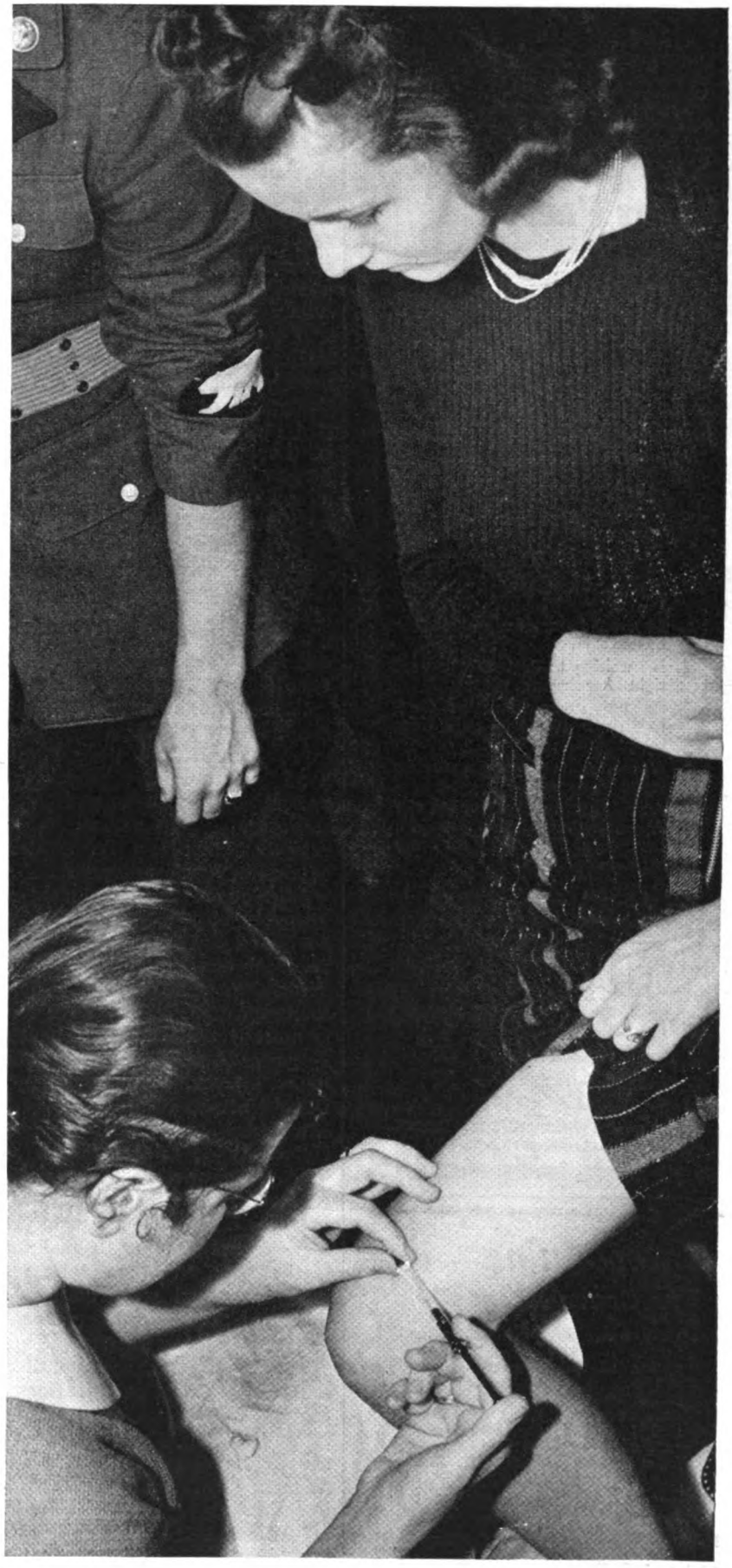
the young men and women who enter the university have uncorrected visual defects. John's vision may be so slightly defective that he is not aware of straining his eyes when reading, but glasses will be recommended to prevent eyestrain while studying.

A nose and throat specialist will check his tonsils, sinus and ears. His posture, feet, body measurements and weight are judged and, if not up to standard, a course of treatment will be prescribed. Many students are underweight and need advice on what to eat.

A general physical examination will determine John's internal condition. Besides usual heart and respiratory tests by stethoscope, he will have a urinalysis, blood analysis and blood pressure test. If the primary examination causes any doubt of soundness, more detailed and mechanical means of diagnosis, such as laboratory tests, x-ray, electrocardiograph and such modern tools are employed.

Tuberculosis, the "white plague," takes its heaviest toll among young people of college age, so University of California doctors are most thorough in discovering and stamping out this infection among students. They have found the customary stethoscope examinations inadequate to reveal the early stages of tuberculosis, so they use more elaborate and accurate means of detection. John will first be given a skin reaction test. About 33 per cent of the students have a positive response to this preliminary test, and these are fluoroscoped for accurate diagnosis. Approximately 1 per cent of the positives are found to have active cases of tuberculosis and are refused admission to the university until they are cured.

These cases are usually in the early stages of development and amenable to treatment, so that the students are often able to return to classes in about six months. If the infection were not discovered until outward signs of the disease were



The tuberculin test is a routine part of the exhaustive medical examination given each student in the University of California's comprehensive health program. The university officials are convinced that physical culture is vital in education.

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apparent, the student's chances of recovery would be greatly lessened, and he would be an invalid for years.

The advantages of early discovery of tuberculosis is not limited to the infected student. He spreads his infection to those with whom he comes in contact and is an unconscious menace to the health of many others. When an active case is discovered, all those who have associated with the patient are given tuberculin tests.

A new device has just been installed at the University Hospital to examine the heart and lungs of all students more thoroughly, quickly and inexpensively. X-ray pictures of the chest are usually made by x-rays passing through the body to a film 14 by 17 inches in size; a time-consuming, expensive procedure. In the new apparatus, a fluorescent screen is substituted for the large film, and pictures may be taken of the screened image with a miniature camera. These records can then be filed for future reference.

Careful tests and inoculations are used to guard against serious infections. If John doesn't have a good scar to prove recent vaccination, he is inoculated against smallpox. If he refuses, for any reason whatsoever, he is denied admission to the university.

John, as an average student, will probably be given a clean bill of health on the Wassermann test for venereal disease, given to all students. In spite of the belief of some oldsters that modern youth is morally wild, only one tenth of 1 per cent of students are found to be infected with syphilis. Dr. Donald has an explanation for this extremely low percentage. The University of California has very high scholastic requirements for entrance; the wild oats-sowers do not give enough time and effort to high school studies to make college credits, and those who suffer from congenital social diseases seldom have the ability to meet college entrance requirements.

The few cases of venereal disease found in physical examinations are required to take treatments, and, as is well known, these diseases can usually be cured if treated early. Advanced cases take much longer to control and are seldom cured. It is estimated that by finding and treating these early venereal infections, the university saves the state $2,500 on each case; the usual cost of treating advanced infections. More important, the infected students are saved from possible blindness, organic diseases and even from insanity by the detection and cure of venereal disease, and many useful years are added to their lives.

John's friendly, self-confident grin assures the doctors that he does not need the psychiatric tests, but about 5 per cent of the students do need such consultation, and all sorts of complexes and phobias, from fear of failure to sex aberrations, are treated as scientifically as are physical afflictions. These examinations sometimes cure imaginary diseases! A few students believe themselves the victims of ailments which the thorough tests prove nonexistent.

Like most other people, college students consult a doctor as a last resort in illness. To save a doctor's fee, the average student seeks advice of friends or landlady unless he is seriously ill. This penny-pinching seems necessary to students on limited budgets (most of them are), but they do not realize that putting off proper advice and treatment may cost them much more in the end, not only in money but in disability time and permanent health impairment.

After deciding in 1923 to give students a complete medical service, the University of California was not satisfied with halfway measures. They established a hospital and gave all necessary treatment and care except surgery and special nurses. In 1939 the program was expanded to include these services also, and today, with the exception of dental care, a student may have every medical service from the treatment of a cold to an appendectomy without cost. By having consultations and treatment easily available at the university hospital, a student soon learns that an ounce of sickness prevention is worth many pounds of delayed cure. He learns, in these few years at college, to go to a doctor instead of to a drugstore for medical advice.

A rooming house is no place for a bed-sick student, and the staff considers adequate hospital facilities essential for students away from home. A 100 bed hospital with equipment and furnishings that any institution would be proud of was made possible by an endow-

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ment in 1930. There are no private rooms or special services to be had for a price, for every student, rich or poor, gets the same accommodations and care. There are pleasant two and four-bed rooms, sunny patios for convalescence, and a staff of trained nurses to speed recovery from illness.

The hospital has several full time physicians, but this magnanimous program is made possible by the cooperation of local physicians in private practice. The University of California is fortunately located near three of California's largest cities; the campus is in Berkeley, and Oakland and San Francisco are within a few minutes' ride. Fifty of these cities' outstanding specialists in various fields of medicine are on the consulting staff.

If student John gets acute appendicitis, a leading surgeon will relieve him of the pestiferous appendage. If he has symptoms of gland disturbance, an endocrinologist will diagnose his case and direct treatment. These specialists receive a small annual fee, but they give so generously of their services that it is estimated that about 75 per cent of the health service cost is financed by the university, and 25 per cent is furnished by the doctors! The physicians take great pride in the health record of California and are proud of their part in making it possible.

If a student wants to enter any sport from football to table tennis, he must first have a special examination to classify his physical eligibility, and members of all athletic teams are rechecked once or twice a year, depending on the sport.

The care of athletes and general student health are coordinated under one department at California, and the university physician is virtually a czar of athletics. He can keep the most promising track man in the bleachers or rule the football star to the bench for the season if he thinks the health of either will be endangered by active participation in sports. This power is not theoretical but has been used many times, much to the disappointment of player and student body. Recently Jim Jurkovich, star half-back and All-America football candidate, had his promising career ended abruptly by the doctor's order. Two head injuries made it hazardous for him to continue playing, so in spite of alumni

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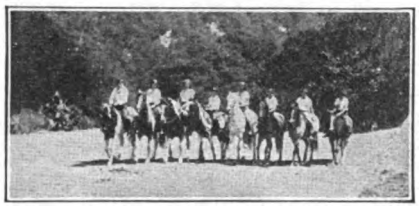
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pressure and student body moans, Jurkovich will take part in no more football games.

There has been considerable concern over the danger in some competitive sports, particularly football, but statistics show that there is more accident danger in the home than on the football field. Athletes at the University of California have more strict and solicitous medical supervision than a wealthy hypochondriac, and athletic doctors have found that with careful preexamination to determine fitness, protective equipment, proper training and immediate care of injuries, accidents are few and seldom serious.

High morale and dexterity are the best sort of accident insurance in sports. It is well known among trainers and coaches that a winning team has far fewer injuries than one depressed by failure. Fatigue must also be guarded against, because a tired man loses the coordination and agility that streamlines him against accidents. About half the season's injuries in football occur up to and during the first game: the drudgery period of training when agility and timing have not been perfected. "Cal" coaches found that by giving two weeks of intensive calisthenics preceding the football season, they could reduce injuries by one-half.

Doctors are on the sidelines at every athletic event and with their prompt and efficient care of injuries have made some valuable contributions to the treatment of broken bones and sprains. For example, a badly sprained ankle usually puts the victim on crutches for a week or two, but immediate attention by a doctor and a new method of taping—placing the tape so that it relieves the strain, yet allows normal muscular action—allows use of the injured ankle within a few hours. The important factor is immediate care after the injury.

Returning to normal activity is the big concern of an injured athlete. Bravado or loyalty makes him throw caution to the winds, and this is where he needs supervision. Other injuries are sure to follow a too-early return to the game, and these second injuries are always more severe—it's a matter of "fear psychology" created by the first accident that plays havoc with dexterity and makes him clumsy and accident-conscious.

Army draft examinations have again shocked us with revelations of the poor physical condition of a large percentage of our young men. Less publicized are the reports of doctors who examine prospective employees for large organizations, yet every year thousands of young people are refused jobs because of some physical imperfection. Most large companies require applicants to pass a physical examination before they may be hired, to meet insurance requirements or to provide the employer with energetic personnel who will seldom be on sick leave. Employers often need men and women who have had a college education, yet they must turn away many well trained, desirable and capable young people because applicants cannot pass the health tests. The university they attended examined their mental equipment before sending them out to find a place in the world but by overlooking their physical equipment prepared them only for frustration. The business and professional world demands stamina as well as scholarship of its new recruits, and unless students can pass both physical and mental tests, they are not well equipped for life. No education is complete that prepares students to earn a living without the health training that makes living worth while.

The success of California's health service is shown by the fact that the death rate of students from all causes is only about one sixth to one eighth of that of young people in the same age group throughout the nation. There has been some discussion of the wisdom of free medical care for college students, but the University of California believes that a complete medical service is as wise for a state university as for the Army. It not only assures brighter, healthier students, but offers a practical, convincing illustration of the doctor's place in their lives. Students realize for the first time that a wise health regime, regular physical examinations while well and expert advice when ill means a saving of health and of money in the long run. In addition, the University gains through more effective use of its educational facilities by students who are sound physically as well as alert mentally, and the communities to which its graduates are returned are the ultimate beneficiaries.

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Hospital Facilities for Boom Towns

(Continued from page 227)

these defense areas saw the opportunity to secure government funds for hospitals, and applications by the hundreds, calling for the expenditure of over $100,000,000 in federal funds, poured into Washington. Thus far about a fifth of these applications have been approved, and the original fund is nearly exhausted. However, much has been accomplished with the funds already allocated. Under the broad provisions of the Lanham Act not only have new hospitals been authorized and additional units to old hospitals been started, but also equipment for these hospitals has been purchased, land acquired and even nurses' homes authorized.

The funds already allotted will provide new facilities for about 2,500 patients a day. However, in December 1941 Congress approved a further appropriation of $150,000,000 for community facilities. If allocations from the new fund are made in the same proportion as from the first fund, another group of 3,500 beds will also be made available at an early date for the mushroomed defense areas.

Official List of Criteria for Recognition of Malnutrition

In order that teachers and parents who are in daily contact with children may have some idea of symptoms which are suggestive of nutritional problems, a list of these is offered by the Subcommittee on Medical Nutrition, Division of Medical Sciences, National Research Council. No symptom or sign listed can be accepted as indicating early nutrition failure, the Committee says. Such symptoms, however, are sufficient cause for a teacher or parent to seek the advice of a qualified physician regarding the nutritional status of the child in question. The following signs suggestive of early deficiency states which may be observed by parents and teachers are listed by the Committee:

IN INFANTS AND CHILDREN

1. Lack of appetite
2. Failure to eat adequate breakfast
3. Failure to gain steadily in weight
4. Aversion to normal play
5. Chronic diarrhea
6. Inability to sit
7. Pain on sitting and standing
8. Poor sleeping habits
9. Backwardness in school
10. Repeated respiratory infections
11. Abnormal intolerance of light
12. Abnormal discharge of tears
13. Bad posture
14. Sores at angles of mouth

IN ADOLESCENTS AND ADULTS

1. Lack of appetite
2. Lassitude and chronic fatigue
3. Loss of weight
4. Lack of mental application
5. Loss of strength
6. History of sore mouth or tongue
7. Chronic diarrhea
8. Nervousness and irritability
9. Burning, prickling of skin
10. Abnormal intolerance of light
11. Burning or itching of eyes
12. Abnormal discharge of tears
13. Muscle and joint pains, muscle cramps
14. Sore, bleeding gums
15. Sores at corners of mouth

"True deficiency disease is easily recognized by physicians and nutritionists," the Committee report concludes, "but early signs of malnutrition are not so easily recognized. Many children and adults never come to the attention of a physician because their minor ills or physical or nervous states are not obviously related to malnutrition as a cause."

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Medical News

OF THE MONTH

Generalized Peritonitis

The case of a child with generalized peritonitis (inflammation of the membrane lining the abdominal cavity) and acute appendicitis in whom an operation was inadvisable, whose recovery is attributed to injections of sodium sulfathiazole into the vein and of sulfapyridine directly into the abdominal cavity, is reported in *The Journal of the American Medical Association* by Julius Gottesman and Harold Goldberg, New York.

Two Reports Indicate Gas Gangrene May Be Conquered

Two reports indicating that gas gangrene, one of the deadly foes of the wounded, may be conquered, have been published in *War Medicine*. Sarah E. Stewart, Bethesda, Md., announces the development of a toxoid that has proved to be effective in immunizing guinea pigs against the most common of the three types of organisms generally involved in gas gangrene. Toxoid comprises the toxin or poisonous substance secreted by the organism, the toxicity of which has been destroyed but which is still capable of inciting the formation of antibodies.

Sulfanilamide or one of its derivatives, when introduced early into infected wounds, has been found to successfully control experimental gas gangrene in guinea pigs, G. B. Reed and J. H. Orr have reported. Their research, they say, has been aimed at devising a simple method of retarding the development of gas gangrene until such time as a wounded man can be subjected to the well recognized surgical or medical procedures. Their use of sulfanilamide, if proven effective in human beings, would have particular usefulness in the initial treatment of war injuries.

Heart Stops for 20 Minutes—Recovers

Reporting the complete recovery of a man whose heart had stopped beating for 20 minutes during an operation, two Boston physicians point out in *The Journal of the American Medical Association* that "this case demonstrates that the time interval of cardiac (heart) arrest compatible with normal recovery is much longer than formerly appreciated."

The physicians, Herbert D. Adams and Leo V. Hand, enumerate certain principles of prevention and treatment of this condition, pointing out that normal recovery of the patient is dependent on adequate saturation of the tissues with oxygen, especially the brain tissue. This is accomplished by immediate and simultaneous artificial circulation of the blood, by means of massage of the heart and artificial respiration.

In the case they report, the patient was undergoing an operation on the left lung when his heart stopped beating. Oxygen was supplied to the lungs by rhythmic pressure on the rebreathing bag used in administering anesthesia and on the heart, which was exposed by the operation and was rhythmically massaged by hand. The patient left the hospital in good condition 60 days after the operation.

Sulfathiazole for a Skin Disease

The average time required to cure 40 patients with impetigo contagiosa, a contagious inflammatory skin disease, by local application of sulfathiazole (a derivative of sulfanilamide) in ointment form was nine and one-half days as compared with from twelve to sixteen days required with the previous treatment, L. H. Winer and E. A. Strakosch, Minneapolis, report in *The Journal of the American Medical Association*. They explain that among the pus producing infections of the skin, impetigo contagiosa is the most common.

Predicts Fewer Deaths from Brain Wounds in This War

"The mortality of brain wounds in the early part of the first world war was over 60 per cent," Ralph B. Cloward, Honolulu, says in *The Journal of the American Medical Association* in a discussion of the procedures used in treating penetrating wounds of the head among the victims of the bombing of Hawaii on December 7. "Dr. Harvey Cushing," he continues, "lowered this figure to 28 per cent by improving the operative technic. The mortality rate of the second world war should be far below this figure. . . ."

He says that nearly all the head wounds encountered at Hawaii were compound depressed fractures of the skull produced by fragments of shrapnel which varied in size from thin flat pieces less than 1 cm. across to large, irregular, heavy chunks of steel 3.5 to 4 cm. wide and 0.5 to 1 cm. in thickness. There were no round smooth bullets found in the group of patients treated.

The preliminary treatment consisted of cleansing the wound, checking any hemorrhage, filling the wound with one of the sulfonamide drugs and then applying a temporary dressing. Despite the fact that, because of the large number of cases treated, it was necessary in many instances to delay operation as long as twenty-four to thirty-six hours after the injury, no infection was encountered in any of these cases.

He says that some interesting observations were made on the physiology of this type of wound of the head. Few of the patients with penetrating wounds of the brain were brought to the receiving station in an unconscious state. The majority of them had not been unconscious but were able to recall everything that had transpired from the time they were hit until they arrived at the hospital.

It is his impression that the reason the patients did not lose consciousness from their injury "was the fact that the force applied to the head was concentrated in such a small area compared to the entire area of the skull that generalized acceleration of the brain was not produced. The speed with which the objects were traveling was so great that the head was struck, perforated and penetrated before the brain as a whole had time to be set in motion. . . ."

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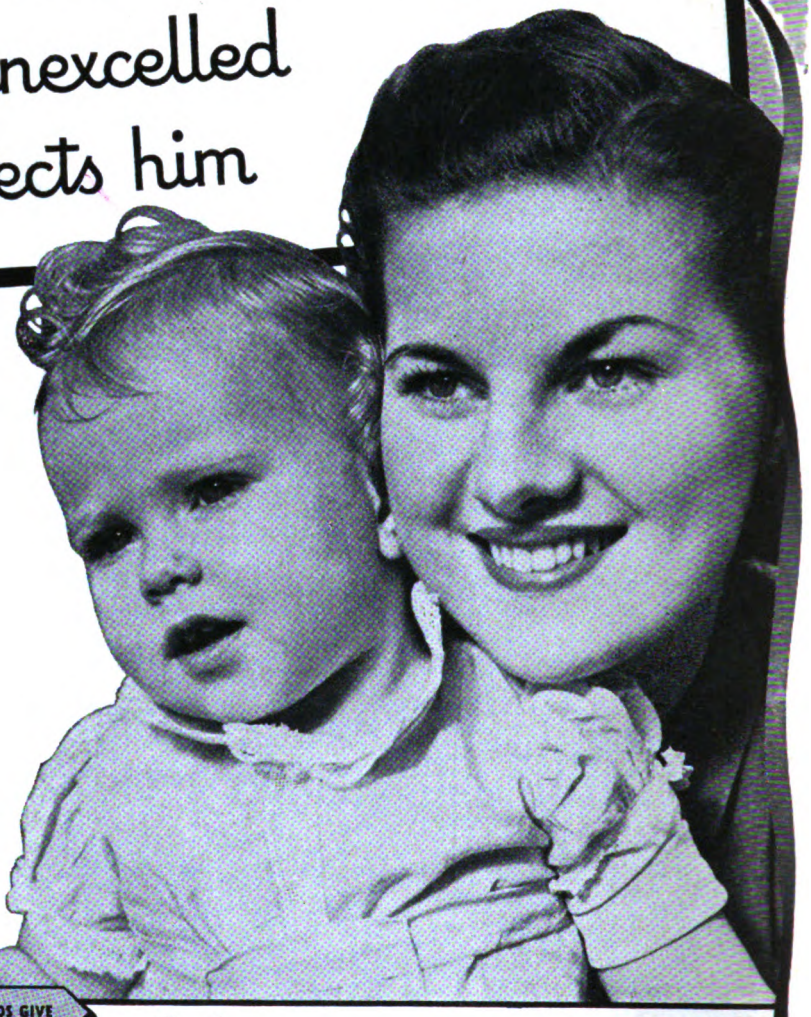


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The Health Magazine of the American Medical Association

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BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

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FORECAST

The eyes are one of the most important assets of every human being, old or young, rich or poor, sick or well, ignorant or learned, in solitude or in the midst of the activities of a busy life. The preservation of normal eyesight contributes in the highest degree to the maintenance of our existence and to the comfort and satisfaction of living.

We cannot have too much or too accurate a knowledge of these marvelous organs of vision, says John O. McReynolds, M.D., in the first of a series of HYGEIA articles on eyes. Starting in May.

Did you know that age for age, girls have more teeth missing, filled or decayed than boys? Or that 95 per cent of all preschool children have dental defects—with only 10 per cent receiving attention?

These are some of the surprising new discoveries about dental care lately revealed by the United States Public Health Service. Helpful hints to the nation's parents and teachers are also included in "Healthy Teeth for Uncle Sam's Children," by James N. Miller, coming soon in HYGEIA.

Friend's baby have impetigo in the hospital nursery? Disgraceful! There ought to be a law!

That the way you look at it? Most people do, yet actually it isn't true that physicians and hospital attendants are to blame for impetigo in the nursery. It's explained by William C. Danforth, M.D., who gives faultfinding parents the lowdown on impetigo in "Spots on the Baby." Coming in HYGEIA.

The newborn infant seems totally helpless. However, it can suck, make vocal noises, stir about and eliminate. Limited as they are, these powers assume great importance to the baby, who soon realizes that these abilities can be turned into powerful weapons to control the situation.

The importance of handling feeding problems calmly and diplomatically is discussed in two Child Care articles by George M. Lott, M.D.

Crisp, white uniforms are becoming more and more familiar in American factories and industrial plants. For nurses, the industrial field offers new vocational opportunities, not only because of the current emphasis on wartime production, but because executives are realizing that the industrial nurse is an indispensable link in the chain of efficient management. Dorothy Haller outlines career opportunities for the nurse in industry in a timely, informative article.

HYGEIA

THE HEALTH MAGAZINE

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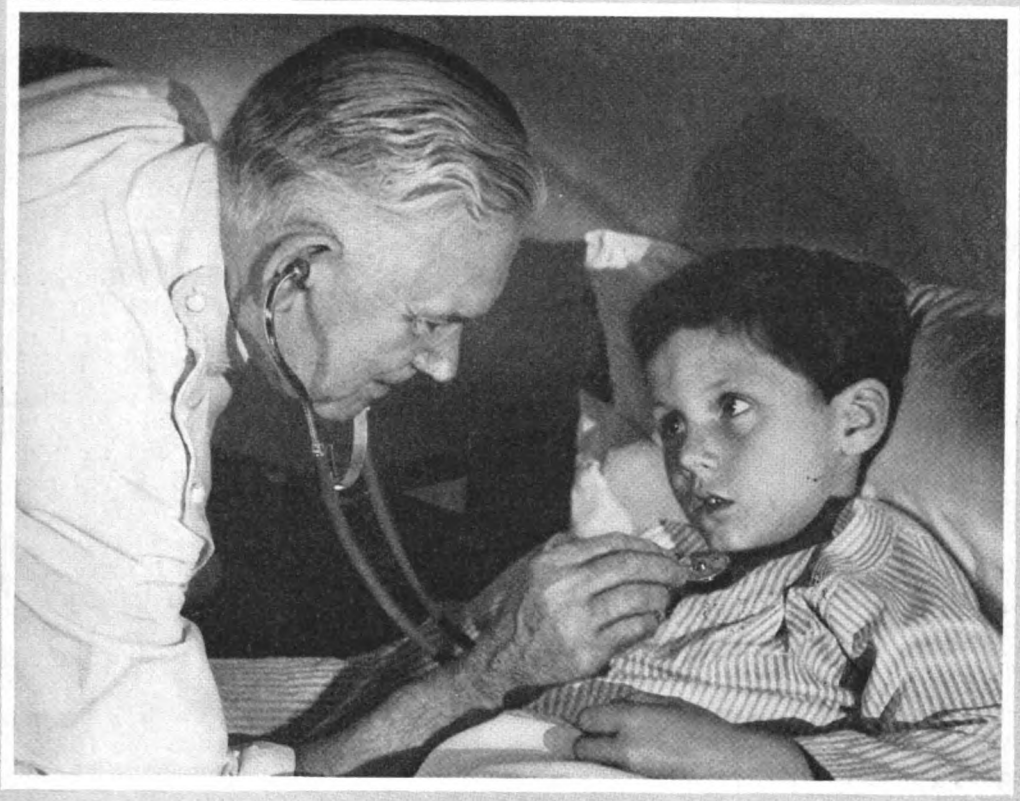
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What can a man believe in?

LOOK into this boy's eyes. There you will see something that ought to make you feel a good deal better about the uncertainties of these times.

He feels distressed, no doubt about that. But you can also see courage there, and what is more important—faith. He trusts this man, his doctor.

That doctor is just an ordinary flesh-and-blood human being, like the rest of us. And yet, because of his work, he's someone apart.

He is a member of a profession dedicated to serving humanity. One who has sworn to the Hippocratic Oath which has been the physician's creed for nearly 2400 years—dating back to the time of Hippocrates, "The Father of Medicine."

It says in part: "Whatsoever house I enter, there will I go for the benefit of the sick, refraining from all wrongdoing or corruption . . . Whatsoever things I see or hear concerning the life of men, in my attendance on the sick or even apart therefrom, which ought not to be noised abroad, I will keep silence thereon, counting such things to be as sacred secrets."

As long as this old world contains a profession based upon such a creed, as long as there are men who put service to mankind ahead of considerations of money or personal comfort, much will be left to believe in.



Every Squibb product—whether made especially for prescription by the medical profession or for proper everyday use in the home—bears an individual control number. It means that each detail in the product's making has been checked against Squibb's high standards and recorded under that number at the Squibb Laboratories. Look for the name and control number when you buy. You can believe in Squibb.

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"The Adcomber"

looks at Hygeia ads

The Usual Symptoms plus X . . . add together to determine diagnosis. That's how your doctor works . . . But what is X? X is the Human Element, the Great Unknown—the factor that calls for all of a medical man's patience and understanding. It's the reason, too, why *only your doctor* can prescribe for you wisely . . . safely. Page 277.

—◈—

"Don't distort baby's feet !!"

Keep step with those growing bones. Buy correct-fitting shoes for him . . buy them *often* . . . and buy them *reasonably.* Where can you get all this? At the Wee Walker dealers listed on page 309.

—◈—

Want to take a chance today? Then take it on something you can afford to lose—NOT ON YOUR FACE! SELECT your cosmetics with the guidance of a Beauty Counselor. A wide choice of shades to try . . . no haste . . . no pressure. OR—select with the help of the handy coupon—page 293.

—◈—

A girl has got to do her baking, hasn't she? And if the man with the camera slips up on her, unnoticed—he has to snap so charming a picture, hasn't he? *AND YOU HAVE TO TAKE A LOOK, DON'T YOU?* . . . PAGE 241.

—◈—

It's no secret about the freedom and comfort of tampons. . . . But have you heard about the "safety center" tampon? Holds more than 300% of its weight in moisture. Name? Page 317.

—◈—

For baby's amusement and mother's peace of mind . . . clever Tykie Toys are made of washable, non-inflammable, gem-like plastic . . . A SAMPLE and pictures of toy styles are yours for the asking . . . page 309.

—◈—

WANTED: One reliable T. B. Detector to warn against *early tuberculosis* . . . Undiscovered to date! But you *can* protect yourself and your family by regular x-rays and chest check-ups. And here's the offer of a helpful little book of up-to-date facts for you . . . page 278.

—◈—

Down with bottle nursing troubles! Up with the weight curve! On with the handy sealing Evenflo Nurser cap—in a jiffy! . . . Saves precious hours for busy mothers and nurses. Page 308.

THE ADCOMBER

Who's Who IN HYGEIA

MIRIAM ZELLER GROSS became interested in writing about health problems when she was a patient in a tuberculosis sanatorium, where she edited the sanatorium journal. Before her illness thus introduced her to a new profession, Mrs. Gross had been an English teacher. A pedestrian occupation for most of its practitioners, teaching was high adventure for Mrs. Gross. It took her from a rural school in Alabama, where she traveled to and from work by muleback over red clay roads, to the South China Sea, where she lost most of her possessions in a typhoon. She stayed in the Philippines, instructing the youngsters in government schools at Manila and Cavite, until ill health compelled her return to the States.

Her health restored, Mrs. Gross continued the writing she had started as a sanatorium patient. She specializes in medical subjects and has collaborated with physicians in preparing health stories for magazines and radio presentation. "Gasoline Intoxication," on page 257, shows how well she does it.

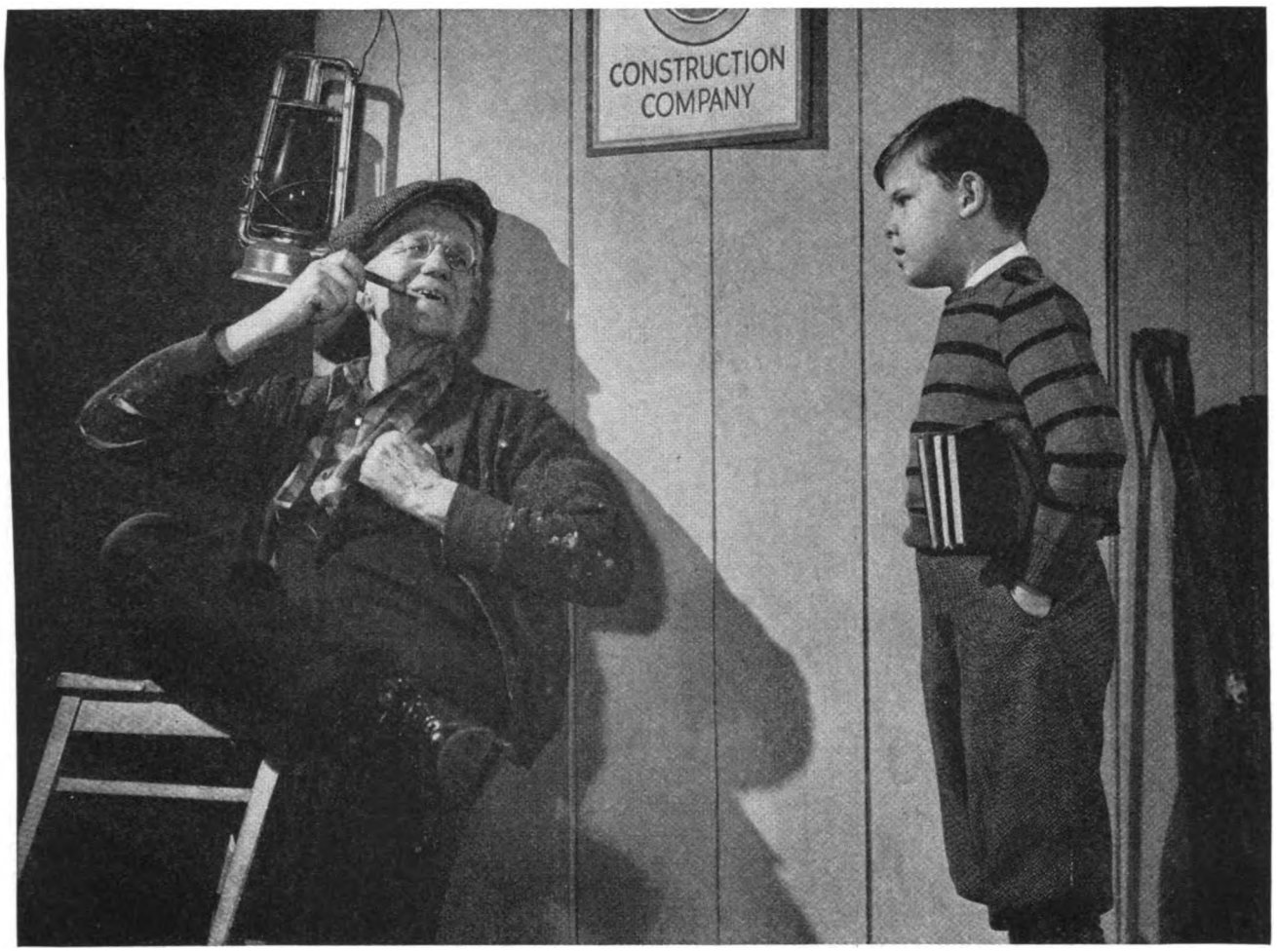
A member of the class of 1918 at Johns Hopkins University Medical School, LT. COL. AMOS R. KOONTZ, M.D., received his degree in France. With several of his classmates, he had enlisted during his senior year as a private in the Johns Hopkins Base Hospital Unit. He returned after the war to practice in Baltimore and teach surgery to Johns Hopkins medical students. Dr. Koontz resumed active Army service in November 1940. As Medical Director of Selective Service for the State of Maryland, he presents some reassuring facts about "Our Nutritional Status" on page 279.

LOUIS W. SAUER, M.D., is an attending physician in the division of pediatrics on the staff of the Evanston (Ill.) Hospital, assistant professor of pediatrics at the Northwestern University Medical School, Chicago, and medical director of The Cradle, Evanston's famous home for infants.

Known throughout the medical world for his researches in whooping cough leading to the development of the vaccine which is usually identified in medical literature simply as "Sauer's vaccine," Dr. Sauer tells the story of these researches for HYGEIA readers in "Whooping Cough Joins the Preventables," on page 266.

"I'd work for awhile, and then I'd go to college for a bit, and then I'd work again," says ROBERT M. YODER, describing his education. The work was reporting for the Decatur *Herald,* and the college was the University of Illinois, conveniently near at hand and not far from the Yoder home in Gibson City, Ill. Mr. Yoder joined the staff of the Associated Press in Chicago in 1933, leaving three years later to do humorous features for the Chicago *Daily News.* Readers of the *News* have been entertained for the past two years by his column on the editorial page, "Sharps and Flats"—a daily feature which was started years ago by Eugene Field. His articles, both sense and nonsense, have appeared in *Reader's Digest, The Saturday Evening Post, Esquire, Coronet, American Mercury* and other magazines. "Vitamania," in this issue of HYGEIA, is reprinted from "Sharps and Flats." It's entertaining, but it isn't all nonsense. See for yourself on page 264.

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"They didn't know much when I was a kid . . ."

We know more *about* children today than our parents did. We give them watchful care . . . vitamins . . . planned diets . . . recreation . . . all to help make them the healthiest in history.

But — are we really doing enough? *Take your own child* — are you *sure* you are giving him the priceless advantage of *normal* vision? Are you *sure* his eyes are all right—that he *really* sees as he should —clearly, distinctly, without strain?

Have his eyes examined! Only then can you be sure that he is not being handicapped by poor eyesight!

Remember, he himself may never suspect that his vision is at fault . . . because he has no standard of experience to guide him. It is *your* job, as a modern parent, to find out. It is your duty to him and his future.

WHAT ARE SOFT-LITE LENSES?

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Marcelle Cosmetics are known to doctors and their patients the country over...advertised in medical journals...formulas supplied to doctors...not a single secret—*for every ingredient is selected to help keep delicate complexions "in the pink"!*

Try these wholesome Marcelle Cosmetics. A week's supply of five daily necessities for ten cents—the cost of postage. Mail the coupon with a dime for your sample set of: Marcelle hypo-allergenic Cleansing Cream, Skin Lubricating Cream, Face Powder, Rouge and Lipstick.

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ADDRESS.....

CITY..... ....STATE .....

LETTERS FROM *Readers*

Growth of Children

To the Editor:

By memorizing two simple numbers—14,543 pounds and 8,432 inches—one can easily remember the standard size of a child for the first four years. The average child gains 14 pounds in the first year, 5 pounds in the second, 4 in the third and 3 in the fourth. Its usual growth may be said to average 8 inches for the first year of life, 4 inches for the second year, 3 inches for the third and 2 inches for the fourth. I think most people do not realize how simply these facts can be associated. . . .

EUGENE C. PECK, M.D.
Department of Health
State of Maryland

News Service Library

To the Editor:

Your magazine is a valuable addition to my reference library, will be constantly referred to and information taken from it will be cited as having come from this source.

FREDERIC J. HASKIN
The Haskin Information Service
Washington, D. C.

Digest in India

To the Editor:

As a constant reader of HYGEIA, I believe your paper is the best thing I have ever come across in this line of journalism. In India, I regret to say, we have nothing of the kind, although we do get inundated with missionary papers that approach health problems via religion.

There is a great need for awakening health consciousness in this country. So many articles appear in HYGEIA that are applicable to conditions here that if a digest were to be produced of articles from HYGEIA translated and published in the vernaculars, it might go at least a little way toward improving health conditions. I have spoken about this idea to doctors and they are all enthusiastic. May we have your permission to reproduce such articles or extracts?

DINOS S. BASTAVALA.
Jiji House
Bombay, India

Permission has been given.—ED.

Health Texts

To the Editor:

The article on "False Health Notions" in the January HYGEIA prompts me to write stating my views on the school's side of this argument and making a suggestion. Even in this article very little explanation is given as to the reason for these misbeliefs. People will believe fallacies until they know the reasons why they are false. A slogan is powerful and only real understanding can combat an untrue one.

I suggest . . . a text or series of texts on medical knowledge for the schools. We have a course in law—why not one in medicine?

PAUL G. WEILER
Union Township School
Van Wert, Ohio

Several excellent texts are available, and a list of them will be sent on request to interested schools. Then, too, there's HYGEIA.—ED.

Your Wish Is Our Wish

To the Editor:

May I take this opportunity to tell you that I consider your magazine one of the finest efforts in health education. I only wish it could be read in every home.

FLORENCE I. MAHONEY, M.D.
Staunton, Va.

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Salute to a car with brand-new tires

THE CAR itself isn't new. But it's one of the very few in this small town that can boast a set of brand-new tires. And the funny part of it is that the rest of the townsfolk—the ones who will have to skimp along with worn or retreaded rubber or no rubber at all—are actually glad this car has rugged new tires on its wheels.

For it belongs to a man who's mighty important in their little community. In fact, there isn't a family in town that would want to try getting along without him.

Just ask the fathers and husbands and sons who punch the clock every morning over at the local factory—and the ones who run the grocery store, the hardware store, and the dry goods store. Ask the mothers and wives who manage the homes and feed and clothe their families.

Ask the boys and girls, too. For this man with the new-tired car is a very special friend of theirs.

The family physician, everyone will agree, is the last man a community would willingly be without. You have only to imagine what it would be like, living in a town where there was no doctor.

And today, when every war-time work-hour counts, the physician's job of maintaining health is doubly important. *But it is a job he cannot do alone.* You must do your part, by keeping "on the alert" against sickness . . . and enlisting your doctor's aid at the first sign of trouble.

To keep working—
you must keep well—
SEE YOUR DOCTOR

PARKE, DAVIS & COMPANY, DETROIT, MICHIGAN

★ BUY DEFENSE STAMPS AND BONDS ★

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The Campaign for

WITH THE FIRST rationing of a food substance—sugar—the war comes home intimately to every American. Fortunately sugar is one food above all others which can be rationed in the United States with probable benefit to the vast majority of American people. Our annual consumption of sugar has varied from 25 pounds per person per year in the early 1800's to 100 pounds per person per year in the 1920's. Sugar is an energy food; it provides none of the values that we call protective. The chief advantage of the protective foods is their content of mineral salts and vitamins. Yet for every practical



In connection with the National Nutrition Program, President Roosevelt says: "Efficiency and stamina depend on proper food. We do not lack the means of producing food in abundance. Our task is to translate this abundance into reality for every American family."

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Improved Nutrition

Parents today owe their children the obligation of scientific feeding. A nation with our vast resources need not fear starvation or hunger if we conserve and use our foods intelligently

purpose we must consider foods from the point of view of proteins, carbohydrates and fats, mineral salts and vitamins.

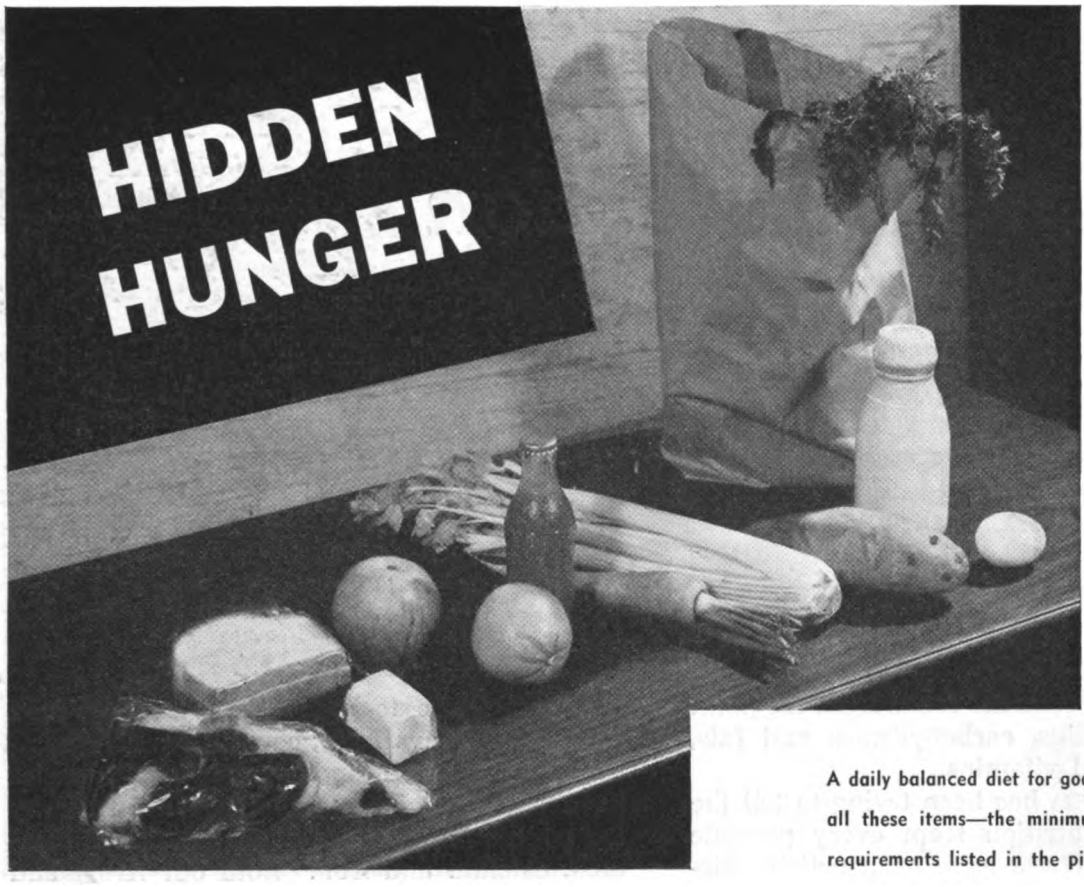
For years HYGEIA has been trying to tell the story of good nutrition from every possible point of view. There have been articles discussing the well balanced diet and discussing each ingredient of the well balanced diet separately. The food fads and follies have been exposed, yet regardless of every possible effort that can be made, there are great numbers of Americans who still eat much more from the point of view of appetite than from the point of view of the foods necessary to health and growth.

From various governmental agencies innumerable pamphlets are available which tell again and again in different ways the essential facts that every one needs to know about food. From every national organization in the food field, including the grocer, the dairymen, the packers, the canners, the producers of butter and oleomargarine, the bakers and the millers, excellent pamphlets are now available telling how the essential foods may be had at a reasonable price. Yet with all of this vast outpouring of publicity and educational material issued through newspapers, magazines, motion pictures and over the radio, there are still great numbers of people who do not know thiamine from niacin, to whom ascorbic acid is something to be avoided because it is acid, who think that the whole purpose of iodine is to be painted on wounds.

In the desire to make the necessary food factors easily available, committees representing scientific bodies and governmental agencies have encouraged the enrichment of flour by the addition of portions of the vitamin B complex, calcium and iron. Both our Army and our Navy are going to make that type of flour the usual flour used on ships and among troops even in the field. Nevertheless even though millers throughout the nation have encouraged the average housewife to buy enriched flour and to purchase bread with enriched flour, the campaign is not seizing the public fancy as it should. Eating is largely habitual. We become accustomed to certain foods which we know we like, and most of us hesitate to try new foods because of the fear of unpleasant experiences.

Examination of the young men who were registered under the Selective Service indicated that only a fraction of 1 per cent were underweight by military standards. Many, however, had evidence in their bodies of nutritional errors when they were young. The parents of today owe to their children the obligation of scientific feeding. A nation with our vast resources certainly need not fear starvation or hollow hunger if we conserve our foods properly. Unless we are intelligent, however, we will continue to suffer from those deprivations of essential substances that have been characterized as hidden hunger. Knowledge of foods and their effects on the human body is as essential as cleanliness for optimum health.

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A daily balanced diet for good health should include all these items—the minimum essential daily food requirements listed in the picture "Hidden Hunger."

A motion picture released by the Foderal Security Agency in connection with the National Nutrition Program, "Hidden Hunger," is being shown in movie theaters throughout the country. Its purpose: to help eliminate malnutrition by emphasizing good buying, cooking and eating habits for Americans

THE NEWER KNOWLEDGE of nutrition—vitally important to the health of the entire nation—is presented in "Hidden Hunger," a motion picture released recently by the Federal Security Agency as a part of the National Nutrition Program. To be shown in movie houses throughout the country, the two-reel film tells how to avoid money waste through improper buying of foods and food waste through improper cooking. The minimum essentials of a well balanced diet are emphasized in this project, which "looks toward a stronger and healthier America," in the words of Federal Security Administrator Paul V. McNutt.

Made in Hollywood under professional supervision and starring well known movie personalities, the picture presents its educational material through the medium of an entertaining scenario—the exciting adventures of a farmer who starts a one-man crusade to change the eating habits of the nation.

Faced a year ago with the fact that two out of every five persons suffered from "hidden hunger"—malnutrition, the National Nutrition Advisory Committee outlined a country-wide

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policy to combat unnecessary deficiencies in the average American diet. "Hidden Hunger" is one of the significant features of the national program which has resulted.

Choosing foods with care, spending wisely, cooking vegetables with a view to the retention of nutritious ingredients—which means cooking without soda and without too much water—are among the important tips for housewives included in the film. Minimum daily essentials for greatest health, it is pointed out, are: 1 egg, 1 pint of milk, 2 vegetables and a potato, an orange, or tomato juice, and another fruit, 3 slices of whole wheat or enriched white bread, 2 tablespoons of butter or margarine and 1 serving of meat.

"See 'Hidden Hunger' in your neighborhood theater," the Federal Security Agency urges. "Remember its message when you walk into the market to buy food or into the kitchen to cook. Remember it when you eat—the right food not only leads to good health but adds to the joy of living." The importance of proper nutrition in the national crisis is emphasized in a statement made by President Roosevelt in connection with the initial showing of "Hidden Hunger" in Washington last month. "Total defense demands manpower," the President said. "Efficiency and stamina depend on proper food. We do not lack the means of producing food in abundance and variety. Our task is to translate this abundance into reality for every American family!"



"This paper bag will hold enough vitamin-containing foods to feed a man every day," says Walter Brennan, star of "Hidden Hunger," in his one-man crusade for good health through sound eating (top). Center: Thrifty buying is emphasized in the film; "you don't have to buy a fancy steak—a cheaper cut of beef is just as nourishing, and you can make it look and taste just as good." Right: A housewife is urged to conserve food by proper cooking.

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"They Shall Not Die in Vain"

By R. M. CUNNINGHAM Jr.

MOST PHYSICIANS seeking permission to perform an autopsy, and according to the law in most states such permission must be obtained in writing from the family before the procedure may be undertaken, approach the subject gingerly, avoiding the word "autopsy" like the plague and substituting euphemisms like "examination," or "operation after death." They emphasize the fact that the body will not be mutilated, and that future generations may benefit from the knowledge to be gained.

Most families resist instinctively when the autopsy is first proposed. "He's suffered enough already," they may say of the dead with complete illogic, or, "It's against our religion," or, to the argument that posterity may benefit, "Let somebody else do it." Among thoughtful, intelligent people, the necessity for advancing medical science through autopsies will ultimately prevail with the majority. In less enlightened communities, no amount of persuasion will always overcome the stubborn reluctance which arises from a feeling that there's something gruesome about the whole idea.

That autopsies are really important in medical education and research is demonstrated in the means which have been developed to combat the reluctance of such fear-ridden families. Many hospitals have prepared brochures to assist staff members in approaching the bereaved family, including specific instructions on what to say and when to say it, and how to answer each objection that may be raised—much the kind of thing the encyclopedia people get out for their salesmen calling on housewives. Hospital authorities consider the "autopsy ratio," or percentage of hospital deaths followed by autopsy, one significant index to the quality of an institution's professional work. An alert, progressive medical staff, it is felt, should be eager to check the accuracy of its diagnoses and the effectiveness of its management of disease through postmortem examinations. Proper emphasis on the education of younger staff members, resident physicians and interns is possible only when autopsies are performed frequently to complete the pattern of history, symptoms, diagnosis, treatment and outcome. Without actual observation of the effects of disease, the practice of medicine never could have become much more than solemn guesswork; examinations of the body after death provide the opportunity for the most important of these observations.

An autopsy ratio of 70 per cent or higher generally indicates excellent staff performance, and, in fact, the Council on Medical Education and Hospitals of the American Medical Association recognizes this by giving institutions achieving this ratio honor standing in its annual publication of autopsy ranking, an event which is anticipated by hospital people throughout the country with much the same eagerness that college students await the announcement of commencement honors. Forty of the 725 hospitals approved for intern training by the Council reached an honor ranking last year. It is likely that all deaths in all these hospitals were attended by an organized effort to obtain consent to perform an autopsy; such a high percentage of failures is uncommon enough in projects undertaken by doctors to indicate the deep-seated nature of the prejudice against autopsies.

Not long ago, I heard the medical director and chief surgeon of a large hospital discussing a family which had resisted their joint persuasion and refused to consent to an autopsy. Apparently, the case had been a particularly difficult one; it appeared that the surgeon and members of several departments of the medical staff had looked forward with interest to an examination which might provide the clue to what had obviously been an unusual combination of symptoms. Their disappointment at

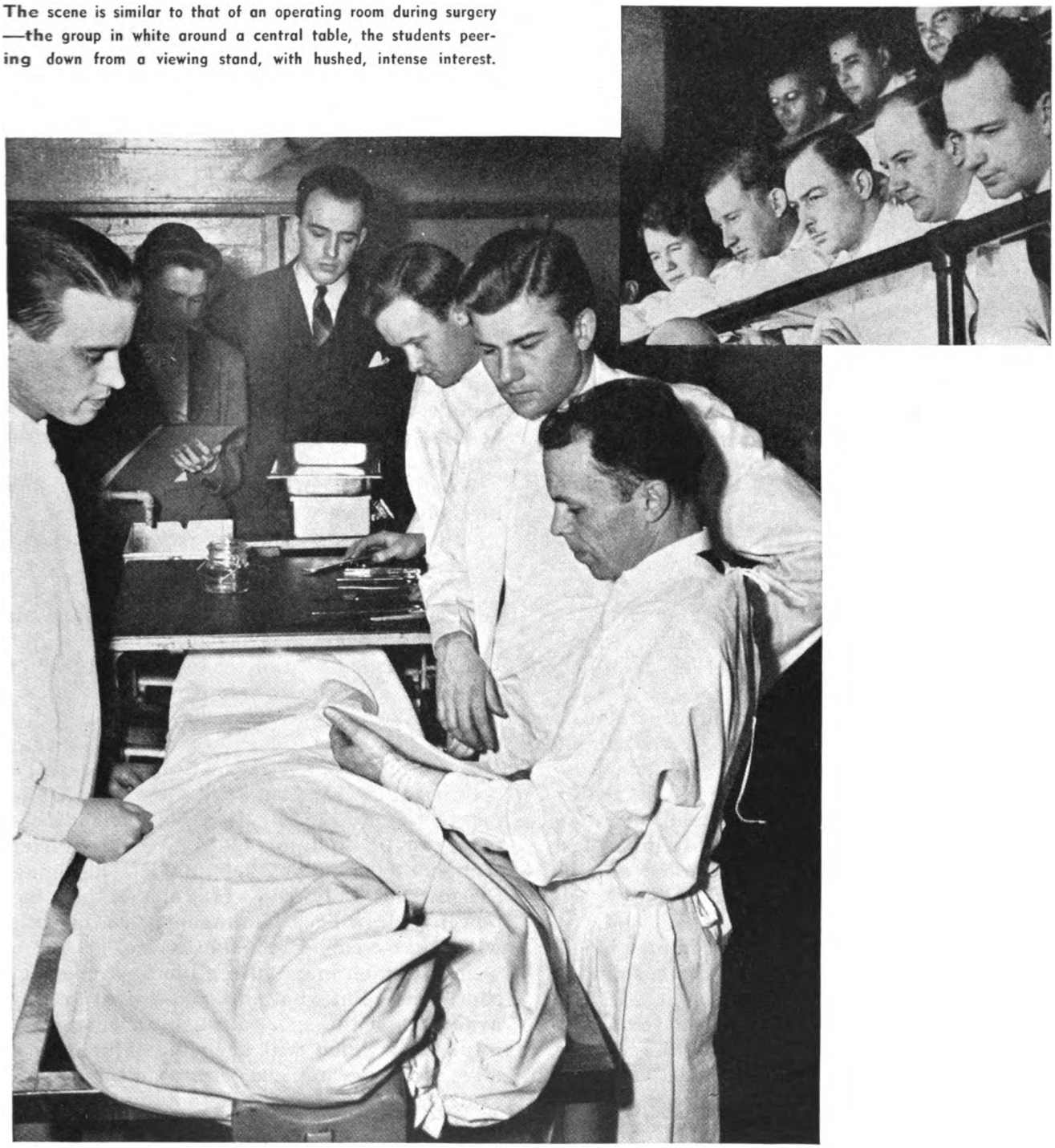
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the family's verdict was manifest. The family's spokesman had insisted that the body would be mutilated—he didn't want any part of it, and that was that.

I tried to put myself in the position of that spokesman, the eldest son, and I saw more than ignorance in his stubbornness. "He couldn't accept your assurances that no such thing would happen," I said to the doctors, "because he didn't know what you were talking about. Having only the vaguest notion of what an autopsy is like, his natural feeling was one of suspicion and fear, and the chances are your efforts to create the impression that there's nothing much to it increased his fear rather than otherwise. He knew better."

As we talked about it, I became convinced that I had something— *(Continued on page 278)*

The scene is similar to that of an operating room during surgery —the group in white around a central table, the students peering down from a viewing stand, with hushed, intense interest.



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Scene at New York Red Cross headquarters: hemoglobin test to determine a donor's suitability.



The blood pressure test is another step in the careful process of selecting the actual donors.

Your Blood Can Save a Soldier!

By MYRON STEARNS

HERE IS ONE THING which can be done by all healthy Americans who want to serve and do not know how: give to your country a small portion of your own blood. The Army and Navy of the United States want blood plasma for transfusions at the scene of battle. It is now being collected from voluntary donors by the Red Cross. The amount requested is 365,000 individual donations of about one pint each, by July 1. This gift can save the lives of thousands of American sailors and soldiers. As yet less than half of it has been collected.

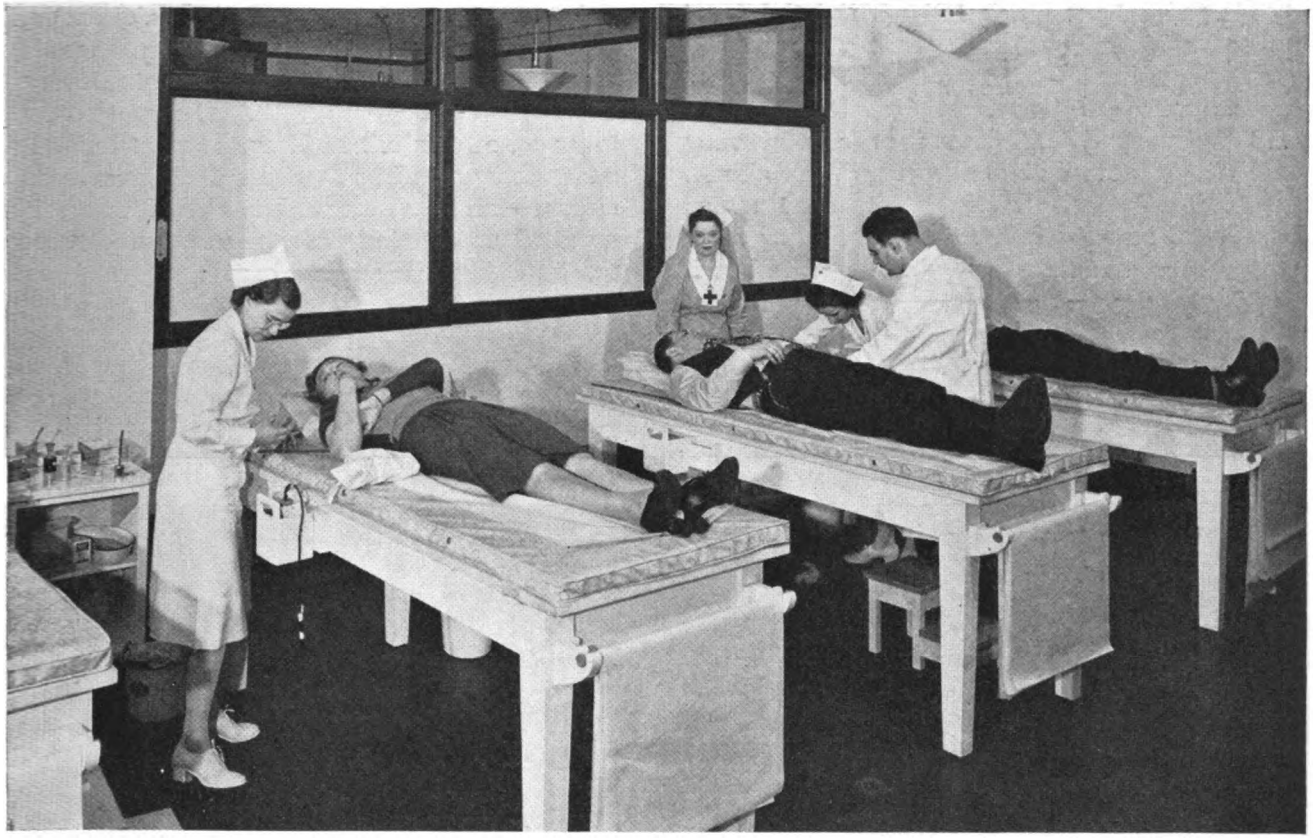
In the last war, the method of restoring blood lost by a wounded man was direct, arm-to-arm transfusion from another whose blood was of the same type. But on the battlefield whole-blood transfusion is difficult, dangerous and often impossible. Only in the last few years have medical men worked out the answer. It is the use of plasma, one of science's major miracles.

Plasma is the liquid portion of human blood. Separated from the perishable red corpuscles, it is a pale yellow fluid. While it does not contain all the substances the body's circulation needs, when pumped into the vein of a wounded person soon after the injury it can make all the difference between life and death. Plasma is universal—anybody's plasma can go into the body of anybody else. The technic of getting it from donors' veins has been perfected. It can now be preserved and sent great distances for emergency use.

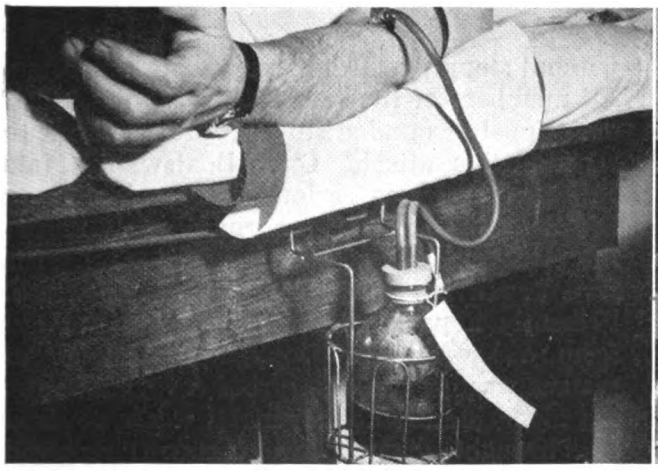
Whether or not he actually loses blood through an open wound, nearly every severely wounded person suffers from "traumatic shock." Liquid flows from the blood vessels into the damaged tissues. When you bang your head, the swelling that soon follows is caused by plasma that has quit its regular job in your circulation and rushed to the scene of trouble. The worse the trouble, the more plasma is drawn off. Then the heart no longer gets enough blood to run on smoothly; it races like the engine of a ship when the propeller is thrown out of the water. Unless some liquid is promptly injected into the blood, the injured man can be said to "bleed to death," even though no blood has actually left his body. Plasma not only restores volume, but has power to draw back into the bloodstream fluid which has escaped into the tissues.

Salt solution may do in a pinch—for a very short time. But what all doctors want to have available on the spot for such an emergency is plasma, which will keep the injured man alive for hours until, at leisure and under the sanitary conditions possible only in a hospital, the loss, if necessary, can be completely made

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The Red Cross headquarters in Chicago is busy with donors, needs more. Right: donor's blood being taken. Center: Nurse has labeled freshly drawn blood as donor recuperates.



Closeup of donor's arm during the process of drawing off blood. A pint at a time is enough.



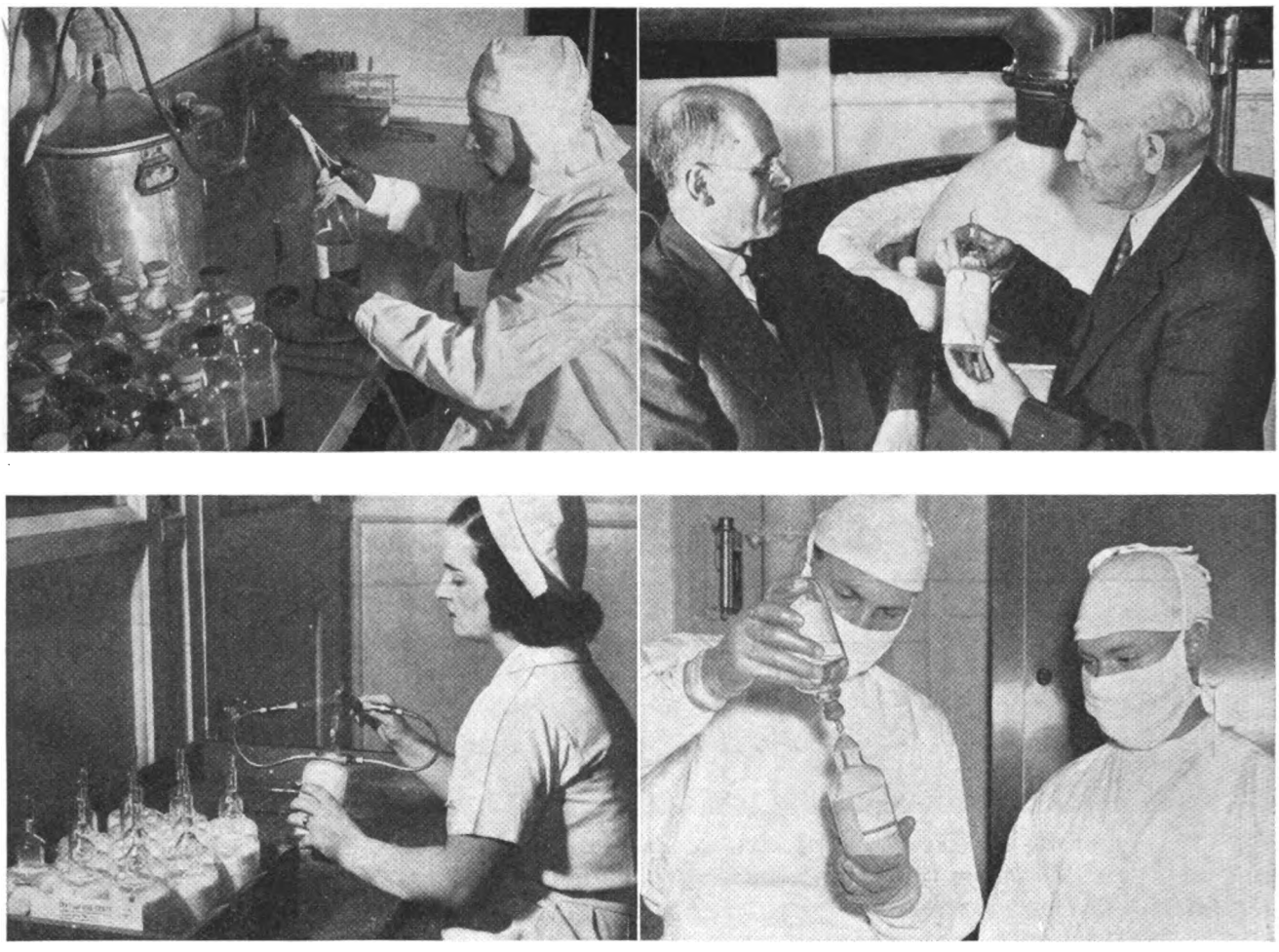
Flasks of whole blood are unpacked in processing laboratory, where the plasma will now be separated.

up by a whole-blood transfusion. For plasma, though vital in an emergency, must often be supplemented by whole blood.

Even in mild shock, a quart or more of plasma may be absorbed into the tissues from the blood stream. In severe shock this loss may be doubled. From 2 to 4 pints of plasma are usually necessary to restore the blood pressure to normal. If plasma can be administered promptly, the quantity required is far less than would be required later.

Last October, even before we were at war, the American destroyer Kearney was struck by a torpedo at midnight. A heavy sea was running. The ship's siren, pulled open by the force of the explosion, screeched deafeningly,

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After whole blood is whirled at 2,500 r.p.m. in a centrifuge, the liquid plasma is drawn off the top, like cream (top, left). Liquid plasma is frozen and pumped dry in the hugh vacuum tank shown at the right, leaving a dried powder ready for storage and transportation to war areas.

Flasks of the dry plasma are vacuum sealed in the final step in its preparation for transportation and use (lower left). Restoring the dry plasma to liquid form for use in emergency transfusions is speedily accomplished (right). A sterile needle punctures the stopper, adding the liquid.

without stopping. But there was no confusion. All members of the crew who were not killed or seriously wounded stuck at their stations to repel further attack. Chief Boatswain's Mate Frontakowski was seriously injured when a lifeboat, torn from its moorings, swept across the slanting deck of the damaged ship. His face began to turn ashy gray from shock. Presently a patrol plane which had put out from a shore base dropped a package of plasma wrapped in waterproof covering on the sea alongside the destroyer. It was recovered and brought aboard. Frontakowski received three injections of plasma, and lived.

At Pearl Harbor hundreds of lives were saved by transfusions, first of plasma, then of whole blood. Of the small supply of plasma collected from American donors before December, some 750 units (a "unit" is 500 cubic centimeters, or about 1 pint) had already been shipped to Hawaii and were ready for instant use. Army and navy base hospitals, as well as the city of Honolulu, were close at hand so that plasma could be copiously supplemented by transfusions *(Continued on page 299)*

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Gasoline Intoxication

The danger of gasoline poisoning is on the increase as American motorists and industrial workers are exposed more and more to gasoline fumes. A recent study of the subject is reported here

By MIRIAM ZELLER GROSS

PLANES CRASH. Cities are bombed. Other dramatic events in the theater of modern civilization give pause and make us wonder what price the future. But hazards of present day life creep up on us without fanfare and so go unnoticed. Take for example the hazard of gasoline poisoning and intoxication. Gasoline is poisonous!

Poisoning by petroleum products has been recognized as a danger ever since these products found commercial use. But relatively few cases have been reported and not much attention has been paid to them.

The picture is changing, warns Dr. Willard Machle of Cincinnati, writing on gasoline intoxication in *The Journal* of the American Medical Association. He points out that these dangers are on the increase and indicates that it behooves American people to inform themselves on the subject. The increased use of gasoline and the greater toxicity of that now used are the more important reasons why gasoline poisoning is a pertinent subject.

We now use more than 2,000,000,000 gallons of gasoline each month. We used but half that amount in 1927, and the increase is almost entirely due to its use as a motor fuel. Thus increasingly greater numbers of motorists as well as the men employed in producing, distributing, and marketing gasoline are exposed to possible harm from it. There are more than twice as many service stations today as there were fifteen years ago. There were 226,000 in 1938, and the number has been increasing at the rate of about 100,000 a year.

The war schedule, with its vast expansion of motorized divisions, and the aviation program mean gasoline use at a rate never hitherto dreamed. Too, it means the handling of gasoline under what may not always be ideal safety conditions. All of these, reasons Dr. Machle, mean that gasoline poisoning will occur more and more often.

Today gasoline is a much more complicated chemical entity, although it looks and smells the same as it did years ago. This is because chemists have improved their methods of refining. A gallon of crude oil yields a much greater quantity of gasoline now than was thought possible in 1925. Gasoline is a mixture of petroleum hydrocarbons. It varies widely, but chemists say it consists of four general groups, paraffins, olefins, naphthenes and aromatics. Formerly almost 70 per cent of the production was what is termed straight run, and consisted mainly of paraffinic hydrocarbons. Today only about 40 per cent of our gas is of this type, while all the rest is more highly refined: cracked, reformed, or polymerized. For years, it has *(Continued on page 293)*

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How Does the Navy

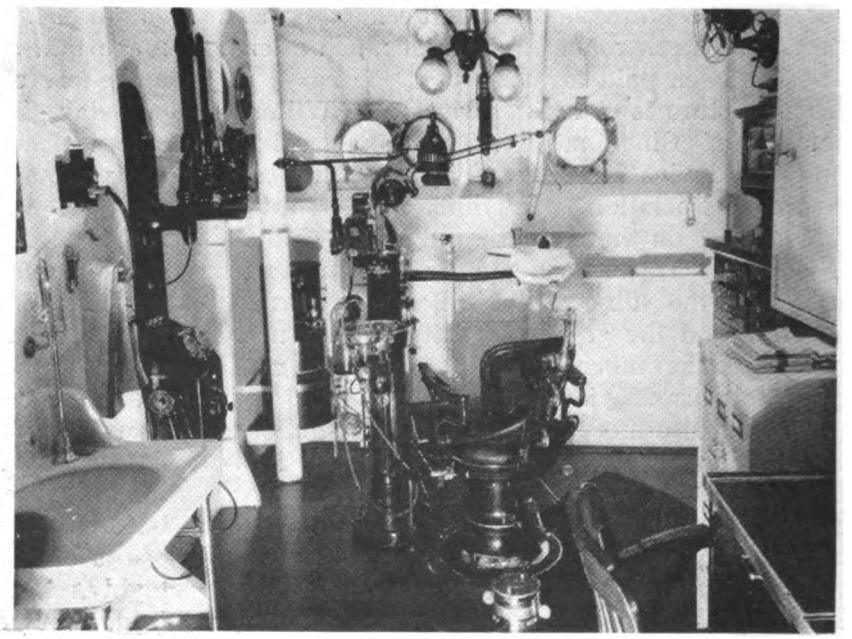
WHEN NEXT you see a man in the uniform of the United States Navy, take your mind out of neutral, slip it gently into gear, and give a little thought to this human phenomenon. The sailor is more than just a lad in wide pants. He is the essential ingredient in one of Uncle Sam's most vital tasks, and his health is as carefully guarded as though he were a prince of the royal house.

Healthy men are the working capital of this business of national defense. Like any good business man, Uncle Sam endeavors to build up his capital and prevent waste. A trained navy man is the product of a long, costly and arduous process of training and selection. If one is lost, he cannot be replaced by simply calling up the employment bureau. The only possible source from which the vacant billet can be filled is through the same prolonged period of education. One of the most important lessons acquired in one hundred and fifty years of running a navy is that protection of the life and health of the sailor is good joss and gives a rich return on the investment.

Under the direction of the Surgeon General, the Medical Department of the Navy exercises a benign supervision over the health of the sailor throughout his service career. Its mission has been stated thus: to keep as many men at as many guns as many days as possible. Its one purpose is to get healthy men and to keep them that way.

The sailor's first contact with the doctor is at the recruiting station, where there is a careful physical examination of each applicant for enlistment. It is even more important to keep persons with communicable diseases out of our ships and barracks than it is to detect the disease after it appears. So, in addition to other measures, each recruit has a blood test, and an x-ray is made of his lungs to detect any trace of tuberculosis. Of all the fifth column diseases working from within, none is more insidious than tuberculosis, for the close quarters in which men must live in some warships are most favorable to its spread.

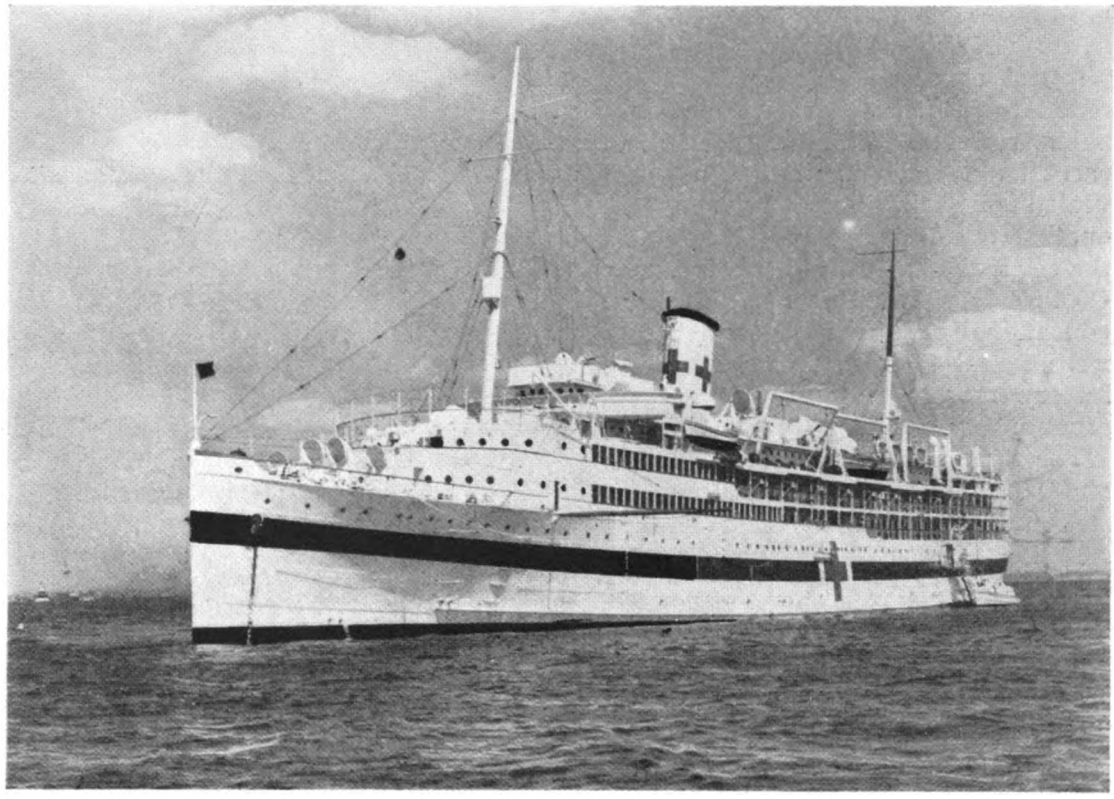
Only way you can tell that this completely equipped dentist's office (below) is on board ship is by the port-holes; everything else is just about as you see it at your dentist's — if a little less spacious! Opposite page: The U. S. S. Solace, shown at anchor, is one of the Navy's great floating hospitals. Wards on board ship, however, could never be mistaken for hospital wards ashore; bedside care is every bit as satisfactory, but shore beds stand on their own legs!

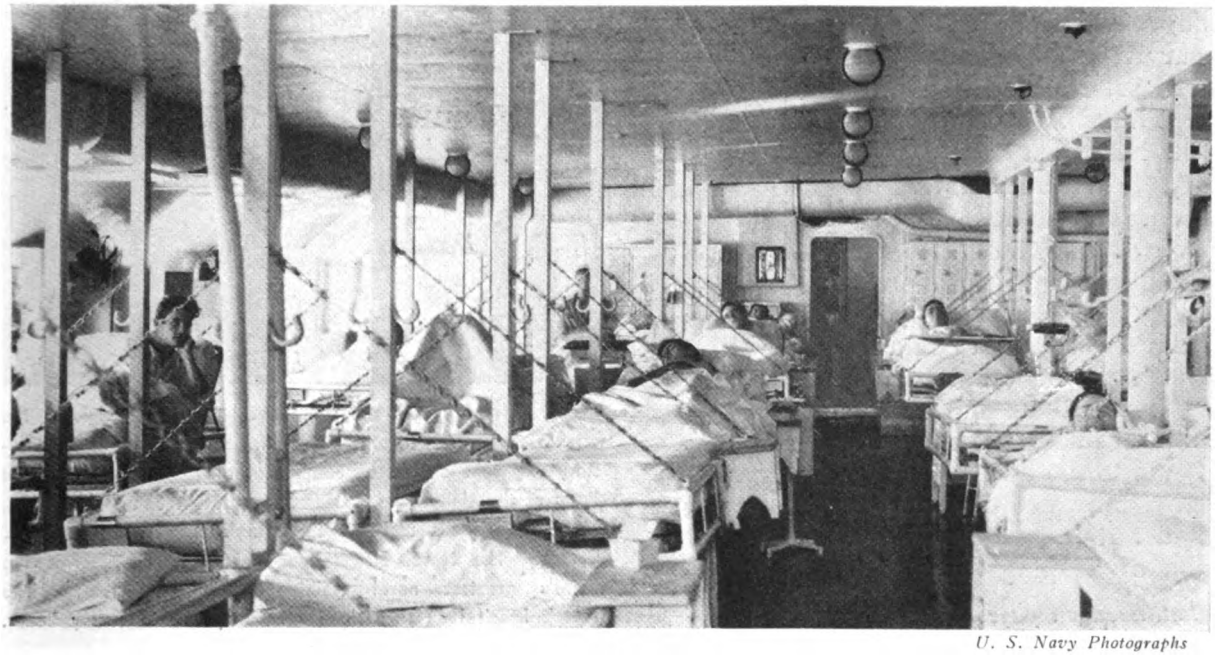


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Get That Way?

By Capt. LUCIUS W. JOHNSON





U. S. Navy Photographs

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Some people are psychic. They can detect a statistic a long way off, and will turn the dial to something else. If you are that way, hold fast, for here are just a few figures that may interest you. A recent study showed that of every 100 average young men who applied for enlistment at a navy recruiting station, about one third were advised at the first interview not to complete their applications because of evident defects, moral, physical or educational. This saved them from the stigma of being rejected. Then the very careful physical examination revealed disqualifying defects in another one third, so only 32 of the original 100 survived this far. Of these, 13 failed to meet the educational requirements, and 6 were found to have an unsatisfactory moral or family background.

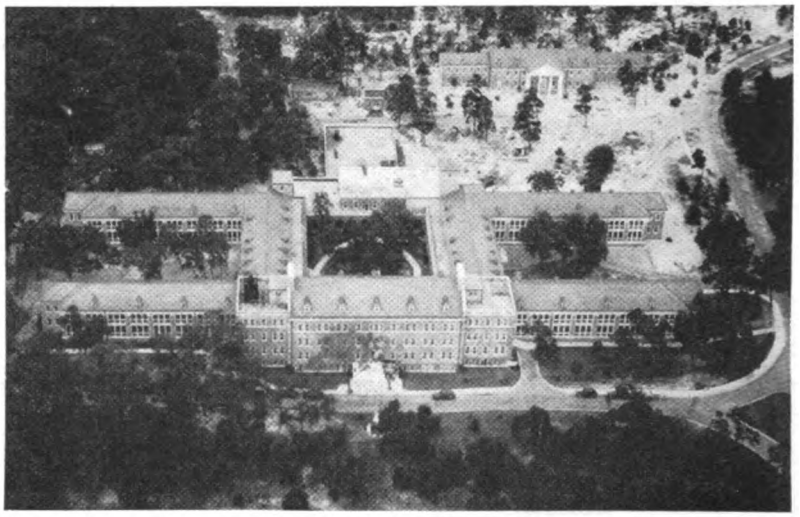
The remaining 13 were enlisted and sent to the naval training stations, where the process of selection and elimination still continued to operate. During the training period, one was discharged for latent physical defects, and one for misconduct or inaptitude. Thus our 100 average applicants dwindled to 11 recruits suitable to be sent aboard ship for assimilation into the Navy. A man may well feel self satisfied after surviving such a severe process of selection. In spite of the recent huge expansion of the Navy, it has not been found necessary to reduce materially the standards of entrance.

For every man who enters the Navy, a health record is prepared, and it accompanies him throughout his naval career. It contains a full account of all injuries, sickness, inoculations and dental treatment. It knows all and tells all, but only to the doctor.

To enlist only healthy men is important, but then there is the obligation of keeping them that

(Continued on page 287)

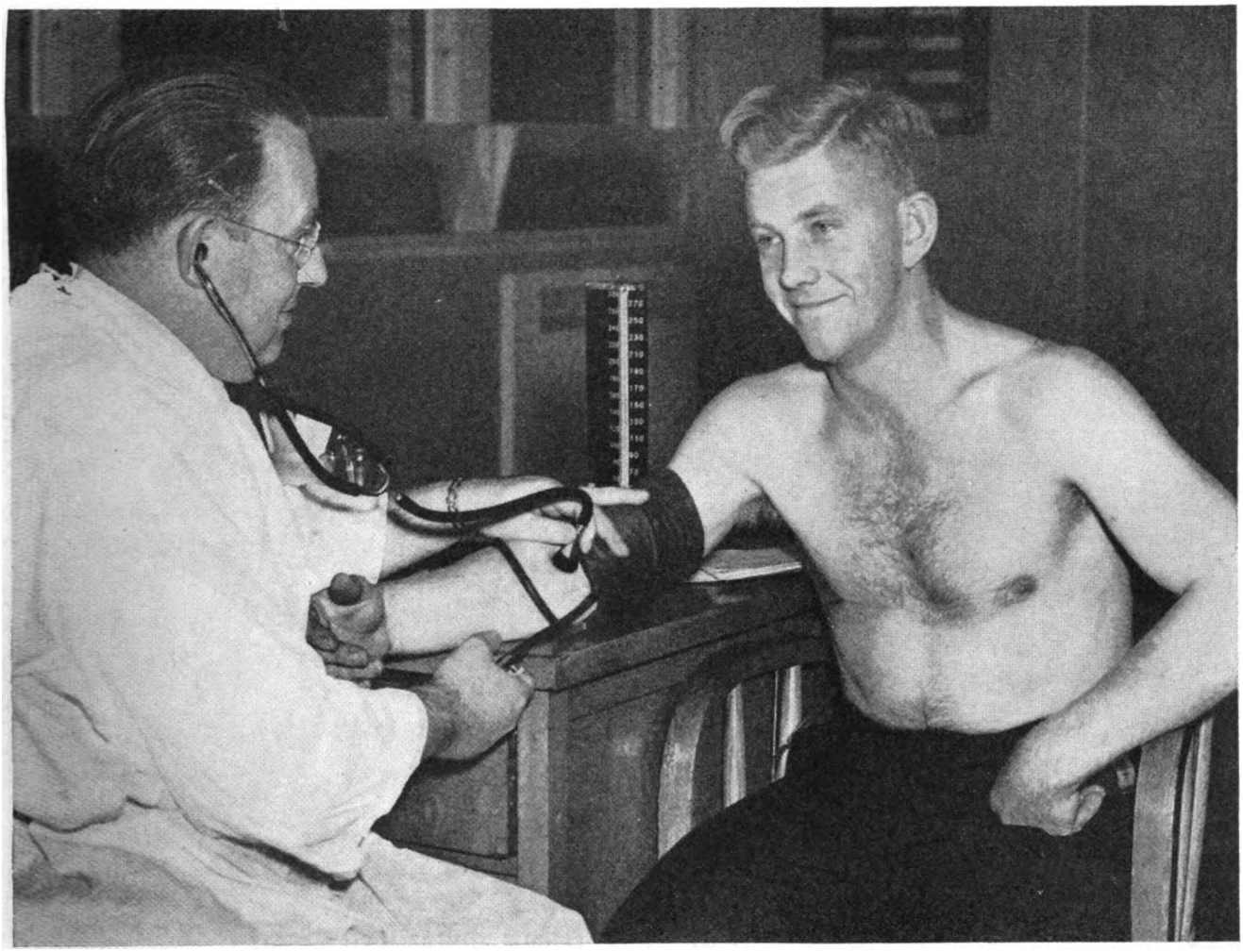




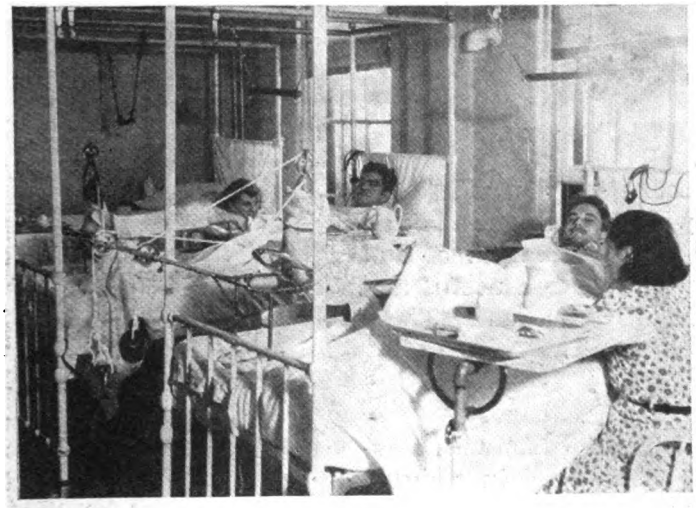


Inside, Navy hospitals the world over are trim models of the scientific efficiency characteristic of American medicine. Outside, they take on the appearance of their surroundings. Top: Patio of the United States Naval Hospital at San Diego, Calif., whose 2,000 beds make it the Navy's largest hospital unit. Center: The Naval Hospital at Pensacola, Fla., serves the world's greatest naval training station. Bottom: The Navy's hospital on the Island of Guam, now in enemy hands.

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Examining a husky recruit for physical fitness (above). Rigorous physical standards make the selection of men an important function of the Navy's Medical Department.



"They're safer on board ship than they are ashore," is what the Navy's Medical Department tells parents who worry about seagoing sons. Scene in the orthopedic ward of a naval hospital, where motor vehicle accidents are the commonest cause of disabilities. Right: Keeping the Navy fit is another big task for Navy doctors. Eyesight is tested periodically to make certain that Navy eyes will be on the alert to spot enemy periscopes and planes.



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LABORATORY TECHNICIANS WANTED

ATTRACTIVE OPPORTUNITIES—(A) CLINICAL laboratorian, general work; 5½ day week; university hospital, middlewestern metropolis; attractive salary. (b) Laboratorian, preferably registered; eastern general hospital; $110, maintenance. (c) Assistant pharmacist, for excellent large California hospital; attractive remuneration. (d) Laboratory x-ray technician; California general hospital; $125, room and board. (d) Laboratory x-ray technician, female, for defense industry in middlewest; attractive salary expected. (e) Laboratory x-ray technician, industrial clinic hospital; attractive location; $1,800, or [illegible] increase [illegible] $2,100; attractive hours. [illegible]

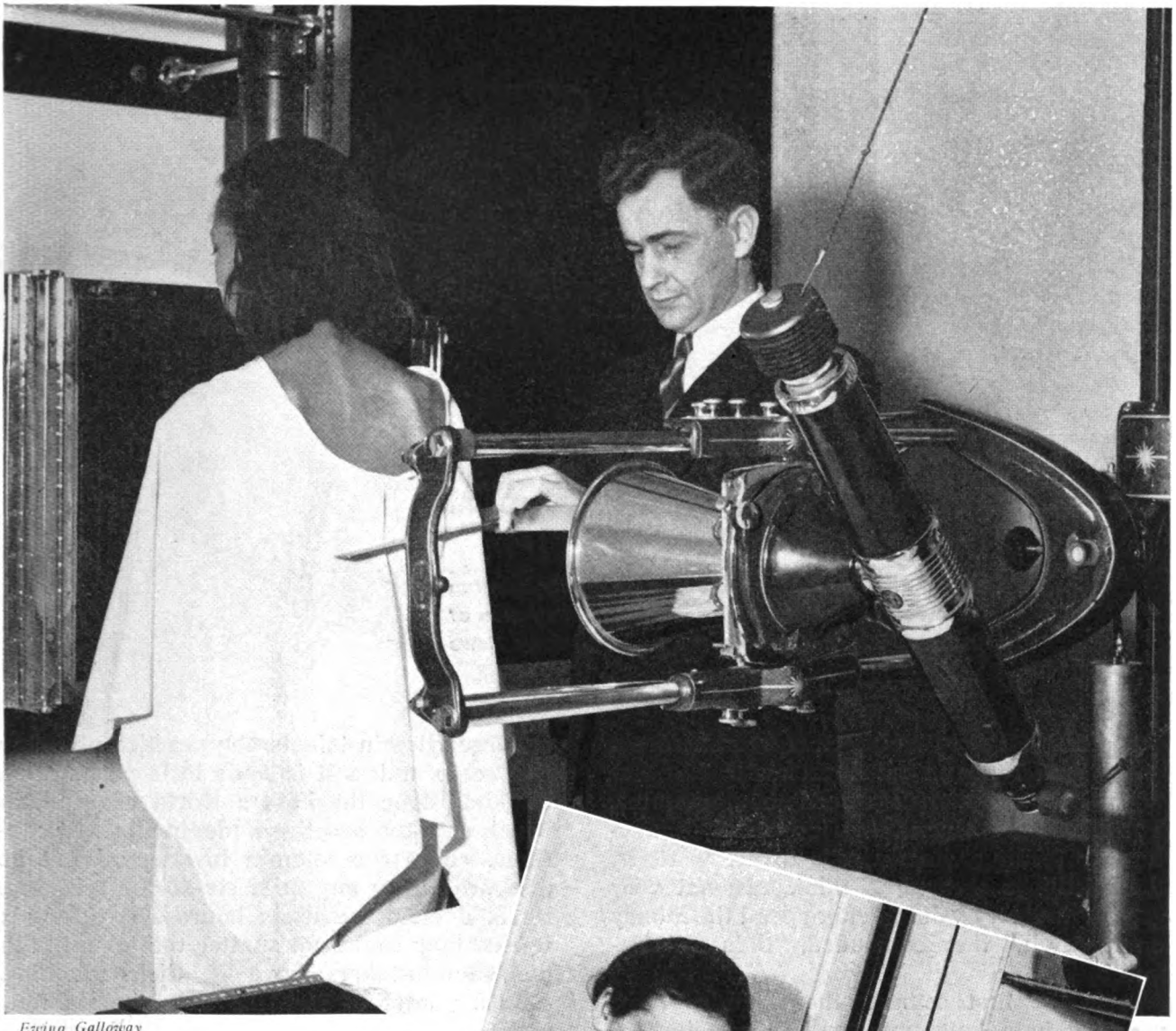
TOO OLD OR TOO YOUNG TO FIGHT—or perhaps disqualified from active service by some slight physical impairment—thousands of civilians are clamoring for a place in the nation's defense. State and municipal military organizations, defense industries and volunteer services of all kinds offer opportunities for useful work—and few of these are failing to get their full quota of manpower.

Under the circumstances, it is surprising that there should be any shortage in a field which is vital to the welfare of our armed forces and our civilian population as well, a field which offers the civilian rare opportunities to perform useful service for the government and at the same time prepare himself for what may become a useful and profitable career after the war—yet this is actually the case. There is a shortage of properly trained medical technicians.

AN OPPORTUNITY FOR SERVICE

Demands on the medical profession to furnish the personnel necessary for adequate care of thousands of men concentrated in training camps and thousands of civilians suddenly removed to defense industry centers have been met as physicians everywhere have volunteered or have been called from medical schools, from hospitals and from private practice into the service of the government. In order that their sacrifices shall be most effective in providing the complete medical care needed in all branches of the armed service and all industrial centers, medical departments must be fully staffed with qualified clinical laboratory technicians, x-ray technicians, physical therapists and occupational therapists. While no medical *(Continued on page 318)*

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Ewing Galloway



Ted Leigh

X-ray technician prepares patient for the chest examination (above). Technical personnel must be trained in the operation of diagnostic and therapeutic equipment and prepared to make proper and accurate observations which assist the physician in making final judgments. Right: The clinical laboratory technician performs tests for the pathologist.

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VITAMANIA

ROBERT M. YODER, newspaper columnist, has fun with a recent report on the mass administration of vitamins. Reprinted from the Chicago Daily News

A REPORT from six doctors, read before a conference on industrial health the other day, said a critical word about vitamins. The chances of increasing industrial production by feeding vitamin pills to the workers, these killjoys seemed to think, are not very great. "Industry would better spend the money on research," they concluded, "than on vitamin pills."

It is the first setback the vitamins have received in a long time, and in certain factories, where the management has been passing out free vitamin tablets, the practice probably will cease, unless it is some little preparation that has done the boss a world of good, in which case the practice undoubtedly will continue. For true vitamin lovers will not be discouraged by any mild six-doctor criticism. If six doctors spend six hours a day for six weeks, they could not shatter the loving faith the vitamin-takers have in their vitamins.

As a matter of fact, the true vitamin fans will put the doctors' critical mood down to a lack of vitamin B_1, which supplies energy, gives vitality to the nerves, improves the disposition, makes you catnip to the opposing sex and restores the nap on rugs.

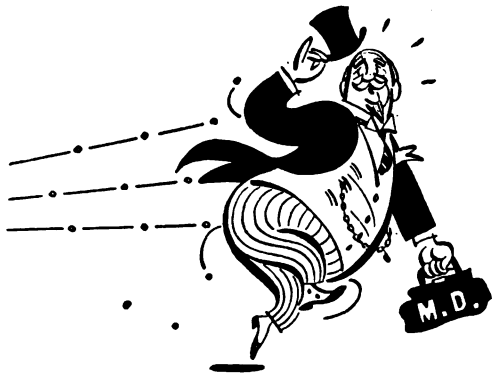
As a matter of fact, it seems doubtful that anything any number of doctors could say could stop the vitamin pastime at this stage of the game. Thousands are taking vitamins without ever having asked a doctor's opinion on the subject. They just picked out some vitamin they liked, and now they wouldn't be without it.

Short of an announcement from the American Medical Association that vitamins are poison, these vitamin fans will keep right on taking them, for nothing in the field of medicine has furnished so much innocent entertainment to so many healthy people.



Increasing industrial production by feeding vitamin pills to the workers doesn't work, say the killjoys.

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While more expensive than such things as gin rummy or Chinese checkers, vitamin-taking is every bit as popular, maybe more popular. For one thing, there is nothing to learn, no rules to master, and any one can play who has sense enough to open his mouth before taking a pill.

What is a mild word of doubt from six doctors, against a sport as easy and enjoyable as that?

Helping to give the vitamin pills their great popular appeal, of course, is the fact that they come in small and highly scientific looking bottles, so that most of the vitamin fans carry their supply right with them, the way gentlemen used to carry a silver snuffbox. Obviously, nobody would take vitamin T, made from the livers of adolescent sharks, if he had to carry the shark with him and wring it out, and that isn't what I mean. I mean he doesn't even have to carry a pint bottle, for the stuff comes in bottles no larger than a pocket-knife.

This is exceptionally handy; far handier than the old fashioned tonics, of which a quart was a small order and a gourdful a small dose. Along with this, the vitamin pills have impressive labels. Why the patent medicine men don't get wise to this, and sell their stuff by its chemical description instead of using patent medicine names, is hard to see; they are missing a bet. The vitamin bottles contain reading matter with real style to it, up to and including "para-aminobenzoic acid." I forget just what marvel para-aminobenzoic acid performs; it may be the Gladness Vitamin, that makes you a bundle of joy, or it may be the vitamin that wards off premature senility in copper miners. It doesn't matter. The point is, a title like that makes the customer feel he is really getting something for his money.

In addition, while the vitamin pills are costly, each pill is believed to be a miracle of concentration. When the customer takes one of those, he may not know what he is taking, but whatever it is, he believes he is taking 10,000 units of it, each unit representing the thyroid glands of an entire herd of rare Andalusian mountain goats. A jolt like that is a bargain at any price.

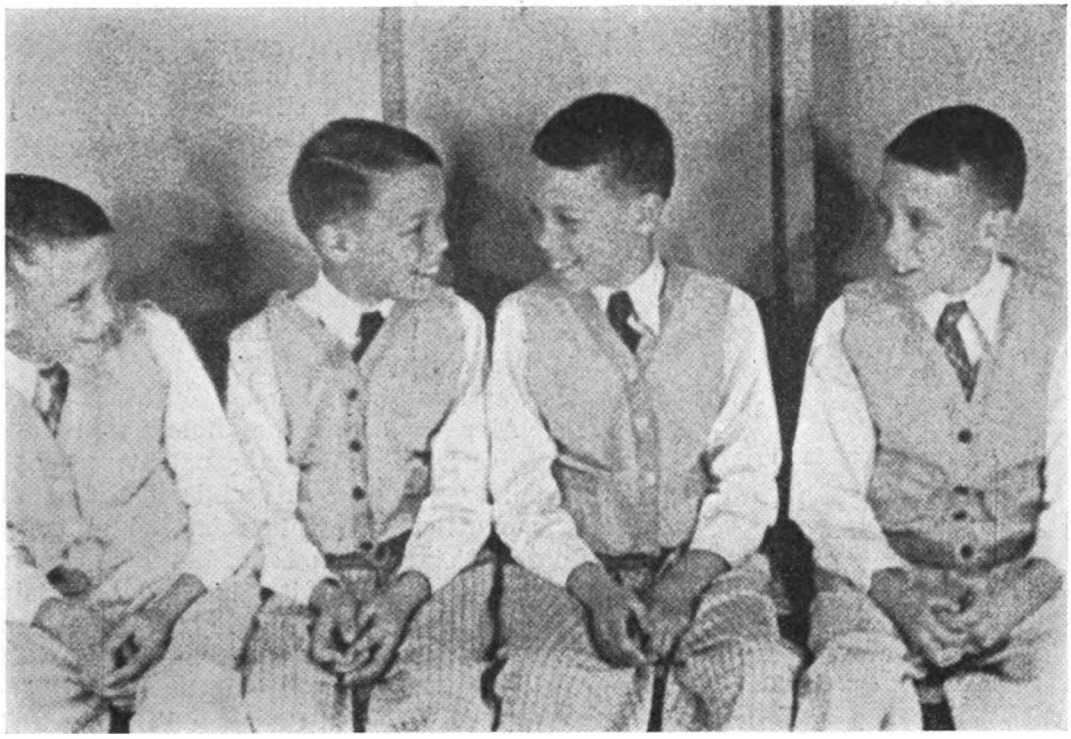


Vitamin fans carry their supply right with them, the way gentlemen used to carry their silver snuffboxes.



Each of those 10,000 units represents the thyroid glands of an entire herd of rare Andalusian goats!

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These four boys helped to write medical history a few years ago by submitting to experiments—conducted by their father and his associates—which aided development of whooping cough vaccine.

Whooping Cough Joins

BACK IN 1933, four small boys—brothers—and their mother shut themselves into an apartment in Evanston, Ill., in a voluntary quarantine which has had far-reaching effects in the elimination of the one of the most dreaded diseases of childhood. All the boys had been inoculated with 150 pertussis bacilli —whooping cough germs. Four months earlier, their father and his associates had injected into two of them a whooping cough vaccine prepared at the Evanston Hospital Whooping Cough Research Laboratory. Conditions in the apartment were carefully controlled to simulate the intimate exposures of indoor childhood play. The experiment was to prove, once and for all, that the disease was caused solely by the pertussis bacillus, and that it could be prevented by injections of the powerful vaccine. The boys' father—a doctor—supervised all the details of the test, which had been carefully planned for over a year, and the mother—a former nurse—kept an accurate, day to day record of observations on all the boys throughout the period of their confinement.

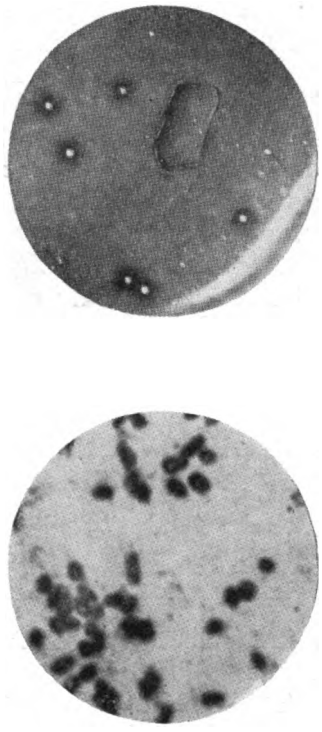
Within a fortnight after the bacilli had been dropped into their nostrils—just as a child might breathe them in if exposed at play to a whooping cough patient—the boys who had not been vaccinated developed a cough that became progressively worse. Plates exposed to the coughing boys became overgrown with colonies of the whooping cough germ—many more than had been introduced into their nostrils two weeks earlier! Their coughs and blood counts became typical of the disease.

The boys who had been vaccinated previously never coughed, nor could a single colony

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The best way to make an early diagnosis of whooping cough, by means of the cough plate, was developed in Denmark in 1916. The germs appear on a plate after exposure to the child's breath.



Cough plate showing six colonies of germs, and (below) the pertussis bacillus, magnified 1750 times.

the Preventables

By LOUIS W. SAUER

of the pertussis bacillus be recovered from cough plates held before their mouths as they tried to produce coughs. The count of their white blood cells remained normal, in spite of every effort to make the exposure to their diseased brothers effective. To this day, neither of the vaccinated boys has had whooping cough! Thus, after centuries of dreadful epidemics and after more than thirty years of specific observations of the germ itself, it was finally proved that whooping cough can be prevented. Widespread use of the vaccine since the completion of the Evanston experiment has brought uniformly satisfactory results where proper concentrations of the vaccine are injected into children at intervals shown to be most effective.

According to medical historians whose writings have been preserved in the archives of European capitals, whooping cough swept over the land in periodic, devastating epidemics not unlike cholera, scarlet fever and smallpox, at the time of Columbus and for centuries thereafter. Making a microscopic study of the mucus that an infant with whooping cough had coughed up, Bordet and Gengou, bacteriologists at the Brussels Pasteur Institute, first saw the whooping cough bacillus in 1900. The germ was present in abundance in the pearls of mucus obtained from the child, who had never been ill before. Six years later, Bordet and Gengou succeeded in isolating and growing the pertussis bacillus on a blood-containing culture medium which is still known by their names. Their observations were so complete that little of importance has been added since. The colonies of this evasive germ grow slowly com- *(Continued on page 305)*

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EMPLOYMENT

Is Nature's Best Physician

Besides giving the patient something to do, occupational therapy improves the morale and provides a wholesome release for the energy which might otherwise be restrained with unfortunate results or directed into activity of an antisocial nature. New, scientific applications have transformed an old method of relieving tensions into a vital treatment

By JOHN EISELE DAVIS

"EMPLOYMENT is nature's best physician," said the Greek physician and philosopher Galen, in 172 A. D., and he added this pungent fact: "It is essential to human happiness." Had he lived today, he might have said also that employment of the hands and mind is necessary for the creation and stability of mental health.

The hygienic use of employment of the body as an aid to health was probably first given a therapeutic status by Phillip Pinell in France in 1791. In 1799, the Society of Friends in York, England, opened what is considered by many to have been the first modern mental hospital. Their manager, Dr. Samuel Tuke, a leading hospital administrator of his time, in discussing occupation for the mentally sick pointed out that "there is less danger from putting the spade and hoe in the hands of a large proportion of mental patients than from shutting them up in idleness."

With the passing of the humanizing years in the evolution of medicine, the art of "just keeping busy," which was the basis of the early employment of work as therapy, has been gradually turned to a more exact and comprehensive application of arts and crafts in treatment. Shortly before, during and immediately after the World War interest began to arise in this widening field of treatment, and the idea that included only rug and basket-making soon went by the board. Today a regimen of occupational therapy includes occupation, physical training and recreation. Whereas the early ideals were to divert the patient from his troubles, the modern objective is to employ the body in purposive and carefully planned activities which will have a desirable effect on the mind and will assist physical function. It is easily conceivable that the fabrication of a beautiful rug, the development of a skill in some sport, or the ability to assimilate and discuss the plot and production of a play may have indirect effects in the arousal of wholesome interest in a dejected patient, may lead to a renewal of confidence in talking to and meeting people in a seclusive patient and assist in the reestablishment of capacity for social or even industrial usefulness in many types of the physically and mentally sick. The fact that such treatments are presented in everyday, commonplace relationships and are not presented in pretentious garb as are some other medical procedures does not detract from their value, in spite of the fact that it may lessen their medical appreciation in some quarters.

Today, occupational therapy has become a highly respected arm of treatment in federal, state and private hospitals. Where there are large groups of patients suffering from either physical or mental conditions or a combination of both as is frequently the case, one can

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The modern objective of occupational therapy is to employ the body in purposive and carefully planned activities which will have a desirable effect on the mind and will assist physical function. Projects must be suited to each patient's characteristics.

find the occupational therapist quietly and effectively assisting the doctor through her specialty. They are to be found in general hospitals, children's hospitals and schools for crippled children, institutions for the blind, deaf and feebleminded, tuberculosis sanitoria, penal institutions, home service, community and curative workshops. Some one has aptly remarked that any place where one is in need of "work relief" one should find a therapist offering an attractive job. The implication in this is, of course, the belief that work may serve as a distinctive relief for many tensions which serve to upset our lives. To be effective, however, it must be employed sensibly and medically, and the therapist is being trained to do this.

Today there are seven schools accredited by the American Medical Association teaching occupational therapy.

What is occupational therapy? The American Occupational Therapy Association answers as follows: "Occupational therapy is any activity, mental or physical, prescribed by a physician for its remedial value. It is recognized by the medical profession as a valuable adjunct in contributing to and hastening recovery. Physically, its function is to increase muscle strength and joint motion as well as to improve general bodily health. Mentally, its function is to supply as nearly as possible normal activity through avocational projects and prevocational studies and training."

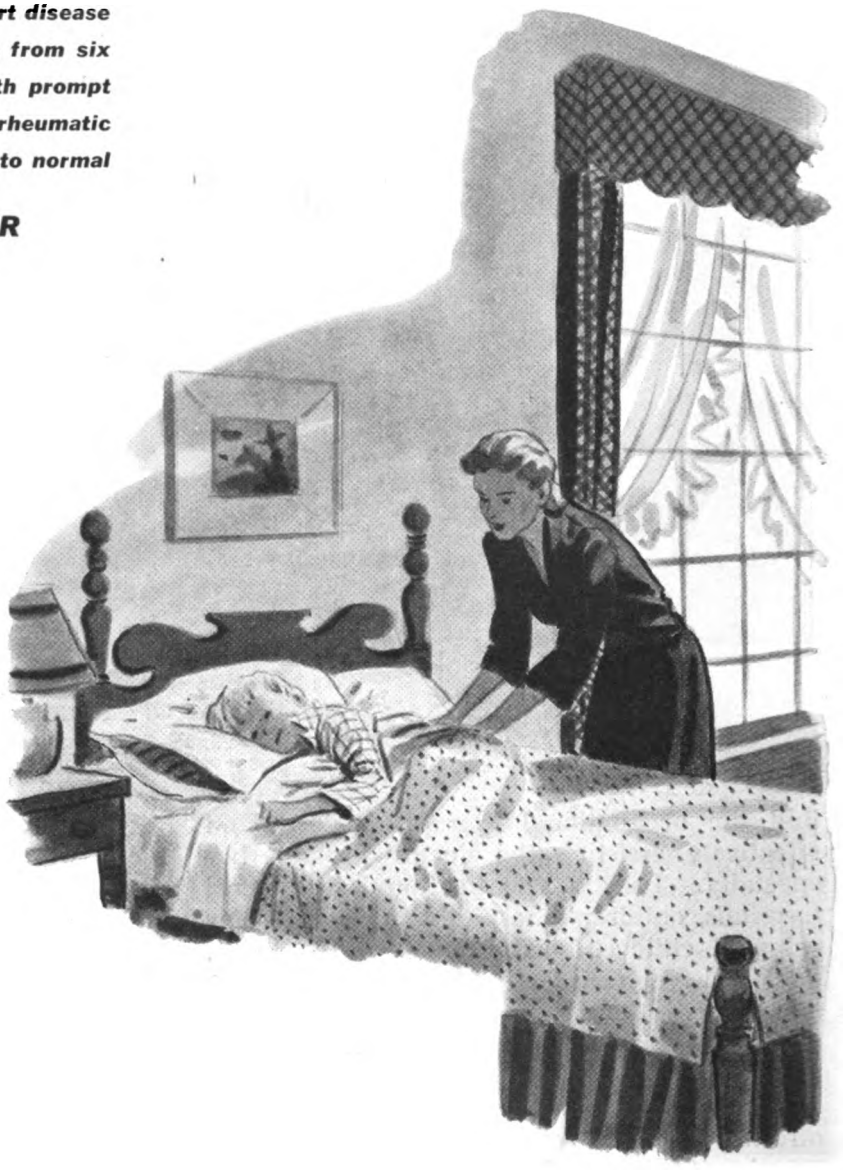
The occupations prescribed are: creative arts—including bookbinding, metalcrafts, pottery, weaving and woodworking; recreation—including dramatics, gardening, music and sports; educational subjects—including correspondence, lecture courses, reading, study groups and scouting. *(Continued on page 296)*

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Rheumatic Heart Disease

More deaths result from rheumatic heart disease in persons under 20 years of age than from six other major causes combined! Yet with prompt and patient care, children suffering from rheumatic heart disease can usually be returned to normal

By EDWARD L. BAUER



Parents who suspect a rheumatic infection should keep the child comfortable in bed until the doctor has completed his diagnosis.

SPEAKING of rheumatic disease in children, Professor Boyd has said that "it licks the joints and bites the heart." Except for a relatively few children whose hearts have some congenital malformation, heart disease in the young is practically always rheumatic in origin. That this is a major problem is demonstrated by the fact that more deaths result from rheumatic heart disease in persons under 20 years of age than from all of the following diseases taken together: tuberculosis, epidemic meningitis, measles, diphtheria, scarlet fever and infantile paralysis. Those who survive are subject to recurrences, and the damage to these growing hearts has not been given sufficient consideration from the standpoint of increasing invalidism, shortened life span and economic disability.

In view of the high incidence, the cost in dollars, the burden on family and community and the warping of the right to health and happiness, the problem is a serious one, though its actual extent cannot be measured by accurate mathematics. It is definitely a

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in Childhood

greater menace than any other crippling disease, but it has no empty sleeve or withered leg to make its mute appeal. It is largely preventable if the knowledge and will to prevent it are available and utilized. The note of optimism is to be found in the channels for the dissemination of knowledge of the preventable factors by organized medicine, health departments, medical schools, hospitals and welfare agencies.

There is no specific preventive such as has been found for diphtheria and smallpox. As tuberculosis is being beaten to the ground by hygiene and early recognition so can rheumatic infection be defeated. Hygienic education must be more extensively employed, and this is not too formidable a task.

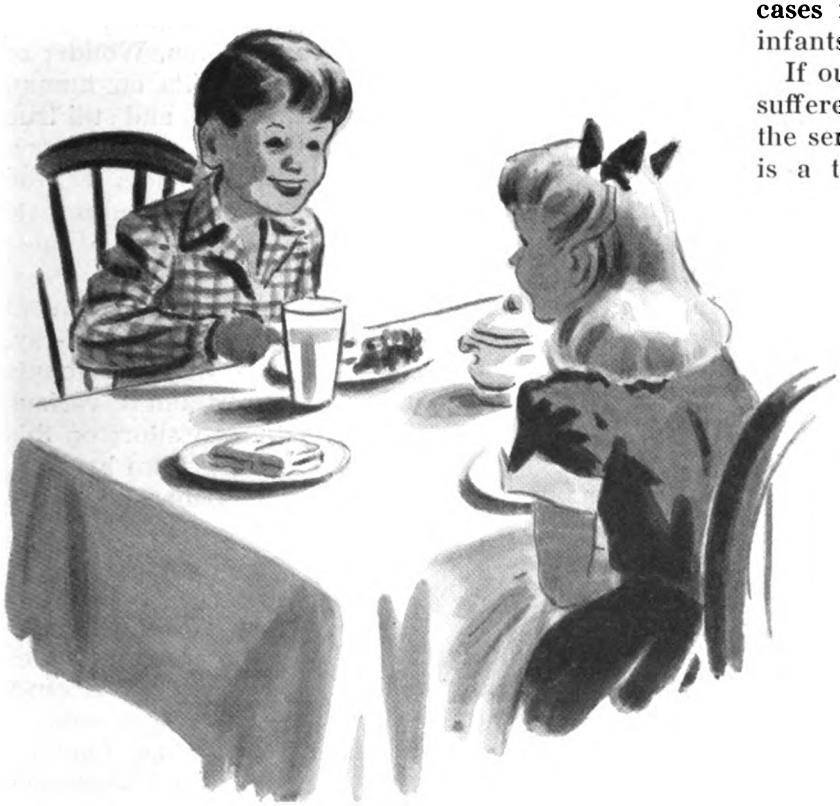
Who are the susceptibles? This is the first question that presents itself. Fortunately, not all children are susceptible, but we have no means of determining those who might be. One exception may be noted—susceptibility is hereditary. Even in this instance some members of a family may be relatively immune, but these cannot be predetermined. It is wise, therefore, for every family with a sufferer to be meticulously careful, and each succeeding generation should be advised of the possibility of such inheritance so that it in turn may protect itself.

One of the popular conceptions concerning the incidence of this disease is the idea that it does not occur before the fifth year. This is not true, not even to the point where it can be said that the disease is rare before the fifth year. Care in diagnosis identifies many new cases in the runabout years, and even infants have been found to be victims.

If our present knowledge is applied to sufferers, much can be done to alleviate the serious aftermath of infection. This is a tedious task, and since often no immediate picture of ill health is present, the objectives must be clearly understood or such management is neglected or forgotten. Ideally, prevention is the shorter route to solution of the problem. For the present it will not operate with perfection, but efforts at prevention will save many from illness and long convalescence.

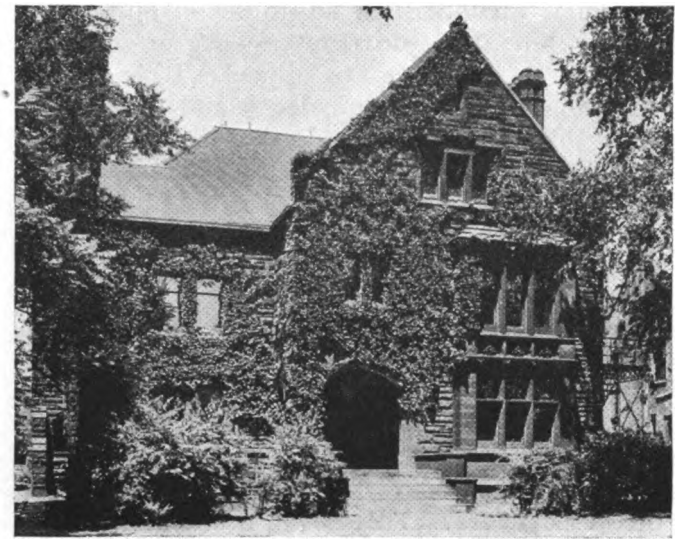
Hygiene and sanitation must be considered as controlling an impor-

(Continued on page 306)



Recovering from rheumatic heart disease, a child's activity need not be restrained unless he shows signs of fatigue. Normal activity may be resumed with supervision.

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By BRUNO GEBHARD

SEEING IS

HEALTH MUSEUM is a new word, which accounts for a skeptic's question, "Do they put all the health that is left in the city into museum showcases?" The Cleveland Health Museum, one year old last November 13, has demonstrated that it is *not* a mausoleum. It presents in popular vein the advances made in medical and health sciences, thus promoting personal health and community hygiene. It is called a "museum" because it is a place where people can look at things and look into themselves to see how the wheels go round inside. It is housed in an ivy-covered, stone mansion, a part of Cleveland's former Millionaire's Row.

On Nov. 13, 1940, Cleveland Health Museum, first permanent museum of its kind in the country, was opened as a new idea in health education for Americans, at a civic luncheon sponsored by the Cleveland Chamber of Commerce. That event marked the transition of a four year old dream into reality. In 1936, thirty-five representatives from Cleveland institutions had met at the invitation of the Cleveland Academy of Medicine to discuss possibilities of a permanent health education display for Clevelanders. Even prior to this there were months of informal discussions among medical, dental and public health groups that "jelled" in general agreement on the advantages of a clearing house for popular presentation of medical facts and advances in medical and health science. That year, Mrs. Francis F. Prentiss, a patron of art and science in Cleveland, donated her former home as a site for the Museum.

Visitors, after having been counted by an electric eye, enter the room, "Man, Wonder of Life." The tenor of all exhibits on human biology is given by a century-old, and still true quotation from the Confessions of St. Augustine: "Man wonders over the restless sea, the flowing water, the sight of the sky, and forgets that of all wonders man himself is the most wonderful."

Displays in this room include the chemical elements of the body, a life-size human x-ray, a "hormone lady," and the different amounts of air consumed by man at rest and in various forms of exercise. Sometimes visitors on this floor may notice sounds coming from beneath, where the Health Education Laboratories are located. Here scientifically accurate exhibits are built in several workshops. Into them technicians breathe life in terms of motion and sound.

A more regular, clock-like rhythm catches the ear of the visitor in "Man's Heart Room." The Museum "clock" has—not sixty seconds—but seventy heartbeats to the minute. Looking at the large scale heart which flashes a beam

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of light at every tick, a visitor remarked: "It makes you think."

No signs saying "Please do not touch" can be found in the Museum. Grownups and children alike want to play. Visitors themselves may operate many of the displays. A typical one shows the movements of body joints in "Man's Hand Room." Visitors here are permitted to make their own fingerprint cards. The human skeleton on display avoids the suggestion of grimness through its pose and effective high-lighting; the skeleton's right hand—man's marvelous tool—rests on a brilliant red pillow and is *(Continued on page 310)*

BELIEVING



A $45,000 hand is cast in plaster at the Cleveland Health Museum—it's the magic hand of Bob Feller, the Cleveland Indians' star pitcher. Below: Weekly classes for expectant mothers are an increasingly popular educational feature of the Museum schedule.



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One Hundred Years

By LOGAN CLENDENING

ON MARCH 30, 1842, the little village of Jefferson, Ga., was sleeping quietly in the early spring sunshine. I have no exact information as to the weather that day nor as to the state of activity of the populace, but if quietness did not prevail, it was a departure from its habits before and ever since. It was certainly quiet and peaceful when I visited there in March a few years ago. And certainly on that March day, a hundred years ago, one of the citizens was sleeping. For despite its surface calm one of the most momentous events in the history of the human race was happening in Jefferson—for the first time ether was being deliberately administered to produce anesthesia for a surgical operation.

The surgeon was Dr. Crawford Williamson Long, 26 years of age, a graduate of the Medical Department of the University of Pennsylvania in the class of 1839, who had been practicing in Jefferson only six months. The patient was Mr. James M. Venable, a young gentleman who was a student at the Jefferson Academy, and the operation was the removal of one of two tumors on his neck. The operation was witnessed among others by Mr. Venable's fellow students, E. L. Rawls, who afterward became a physician, practicing at Rome, Ga., and James E. Hayes.



The train of ideas and events which led up to this "experiment" were repeated often, in fact regularly in the various episodes which make up the history of surgical anesthesia. As early as 1800 the great English chemist, Humphrey Davy, wrote of an experience he had with nitrous oxide gas, "After a journey of one hundred and twenty miles, in which I had no sleep the preceding night, being much exhausted, I respired seven quarts of nitrous oxide gas for near three minutes. It produced the usual pleasurable effects. In half an hour I found myself neither more nor less exhausted than before the experiment. I had a great propensity to sleep." Later he wrote: "As nitrous oxide, in its extensive operation seems capable of destroying physical pain, it may probably be used with advantage in surgical operations."

Dr. Long was a pharmacist as well as a physician, and as was so often the case in those days with practicing physicians, conducted a drug store in connection with his office. He was acquainted with the properties of sulfuric ether and in his own words: "In the

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# of Anesthesia



The first surgical anesthetic was administered on March 30, 1842, in the village of Jefferson, Ga.

month of December, 1841, or January, 1842, the subject of the inhalation of nitrous oxide gas was introduced in a company of young men assembled at night in the village of Jefferson, Georgia, and the party requested me to prepare them some. I informed them that I had not the requisite apparatus for preparing or using the gas, but that I had an article (sulphuric ether) which would produce equally exhilarating effects and was as safe. The company was anxious to witness its effects; the ether was produced and all present in turn inhaled. They were so much pleased with its effects that they afterward frequently used it and induced others to use it, and the practice became quite fashionable in the county. On numerous occasions I inhaled ether for its exhilarating properties and would frequently at some short

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time subsequently, discover bruises or painful spots on my person which I had no recollection of causing and which I felt satisfied were received while under the influence of ether.

"I noticed my friends, while etherized, receive falls or blows which I believed sufficient to cause pain on a person not in a state of anaesthesia, and on questioning them, they uniformly assured me that they did not feel the least pain from these accidents."

In plain words, the young bucks of Jackson County, Ga., had ether frolics instead of cocktail parties.

The story of noticing that during the exhilaration produced by drugs no pain would be felt on receiving bruises is, as was said, repeated in many of the early experiences of the discoverers of anesthesia.

Dr. Long carried his observations into practical effect. He told a fellow pharmacist, R. H. Goodman, "in November, 1841," according to Mr. Goodman's subsequent affidavit, that "he believed an operation could be performed without the patient feeling pain, by giving him ether to inhale."

Dr. Long seems to have used a good deal of ether along about this time. Under date of Feb. 7, 1842, he wrote Mr. Goodman in a letter which, fortunately for historical purposes, Mr. Goodman preserved:

"Dear Bob: I am under the necessity of troubling you a little. I am entirely out of ether and I wish some tomorrow night if it is possible to receive it by that time. We have some girls in Jefferson who are anxious to see it taken.

Your friend,

C. W. Long."

About Mr. Venable and his tumors we know comparatively little. (The proper spelling of the name is Venable, not Venables, as it frequently appears, notably in Packard's "History of Medicine in the United States.") He had these two small tumors, the nature of which is undisclosed, on the back of his neck, and he wanted them off but had postponed the operation from the dread of the pain. When Dr. Long suggested the possibility of operating under the influence of ether and that it might abolish the pain, he consented to undergo the trial.

On March 30, 1842, then, he climbed the flight of stairs to Dr. Long's office and inhaled ether from a towel. The operation is described in Dr. Long's own words: "I extirpated the tumour. It was encysted and about one half an inch in diameter. The patient continued to inhale ether during the time of the operation, and seemed incredulous until the tumour was shown to him. He gave no evidence of pain during the operation, and assured me after it was over that he did not experience the least degree of pain from its performance."

On June 6, 1842, the other tumor was removed from Mr. Venable's neck.

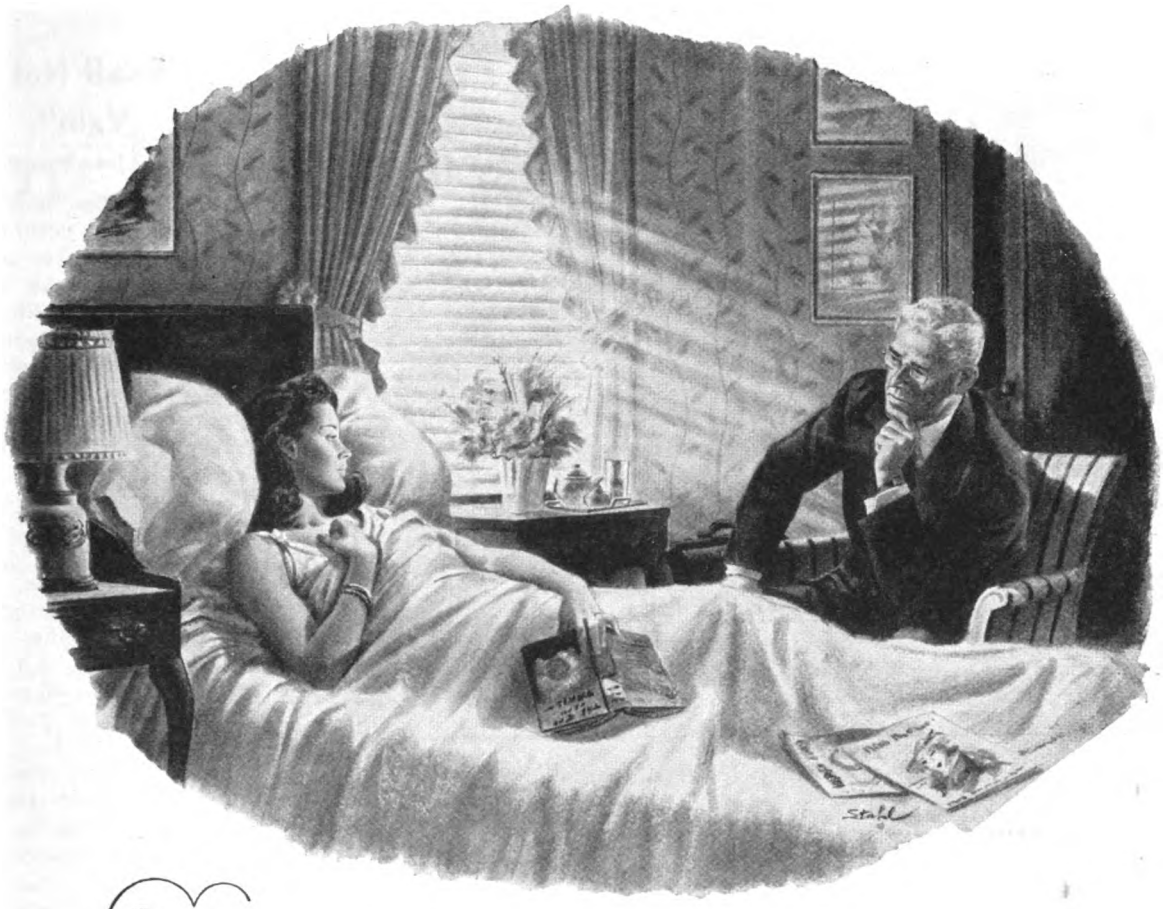
Dr. Long subsequently operated under ether several times. In July 1842 he amputated a toe on a Negro boy, and during 1843 he did at least three operations, two for the removal of tumors and one for the amputation of two fingers.

After that there is no definite record of his having used it. In 1851 he moved to Atlanta, and a year later to Athens, Ga., where with his brother, Dr. J. R. J. Long, and Dr. Hal C. Billups he bought out the largest wholesale and retail drug house in northeastern Georgia. He continued to practice, but the demands of his drug business evidently took up most of his time. Most of his practice was medical and obstetric, not surgical, and besides, after his marriage he seems to have developed a deeply religious attitude toward life and even doubted whether it was God's will to have pain relieved artificially.

And of course in the meantime there arose the great ether controversy. It is not necessary to discuss the controversy here; my intention in this article is only to observe the centennial anniversary by publishing some original material in my possession and to make known some information that has not been used except in some obscure pamphlets. But in order to introduce one of my own items I must mention the ether controversy briefly.

In 1844 Horace Wells, a dentist in Hartford, had convinced himself that nitrous oxide gas was a suitable agent for surgical anesthesia. He knew by experience that it was a good dental anesthetic. When, however, he was allowed to demonstrate nitrous oxide publicly at the Massachusetts General Hospital for a major surgical operation, he failed. Associated with him as a partner was Dr. W. T. G. Morton, who had made the acquaintance of one Dr. Charles T. Jackson, who introduced Morton to the properties of sulfuric ether. Dr. Jackson had sat in a chair and produced a state of unconsciousness in himself by inhaling ether, and the chair is still preserved on exhibition at Pilgrim's Hall, Plymouth. Dr. Morton used ether when he *(Continued on page 280)*

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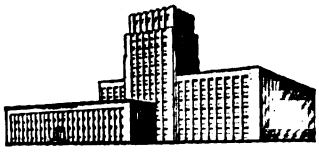
Your Doctor—and the Human Equation

If the bare, cold facts of medical science were all your doctor knew, he would be a scientist only—not a physician. To him people are not machines to be repaired—but human beings to be helped.

Your doctor learned the significance of this during his hospital internship. There, for the first time, he came face to face with men and women who were actually ill and suffering. There he learned that no two patients are ever alike in their ways of thinking and doing and saying things—in temperament, personality and emotional reactions. Day by day it was impressed upon him that the physician must often go beyond the purely physical aspects of a case to seek those other factors which so often determine or modify treatment. That is one of the reasons why he listens to his patients so attentively, and observes them so carefully.

It is his wide knowledge of medicine and his deep understanding of people which make it so essential that you discuss with your doctor all matters concerning your own and your family's health, and that you heed his advice.

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UESTION:

What are the usual danger signs of early tuberculosis?



NSWER:

There aren't any!

MANY PEOPLE BELIEVE that tuberculosis always gives definite warnings when it begins—signs or symptoms by which it may be recognized. Medical science knows this is not true.

Early* tuberculosis usually has *no* symptoms, gives *no* danger signals. Such symptoms as a cough that "hangs on," persistent chest pains, and blood or blood-streaked sputum are incorrectly associated with the early stages of the disease. *They are really indications that tuberculosis has been present a long time, or has progressed rapidly.

The surest way to detect *early* tuberculosis is by X-ray or fluoroscopic examination of the chests of apparently healthy people. If the disease is present, the doctor, knowing the patient's history and physical condition, sees the telltale evidence. *Early diagnosis is vital.* Tuberculosis can nearly always be treated successfully in its earliest stages. In its advanced stages, it is very difficult to cure.

Medical science has made remarkable progress in controlling tuberculosis. The disease has declined from first to seventh place as a cause of death, and continues to decline. Medical leaders hope that it can be virtually eliminated by 1960.

If this goal is to be realized, the search for cases of early tuberculosis must be intensified. There are thousands and thousands of undiscovered cases in this country. Unrecognized "carriers" of the disease scatter tuberculosis germs wherever they go—among their families, their friends, their fellow workers. *Tuberculosis always comes from tuberculosis* . . . it passes from the sick to the healthy.

That's why you must be on the watch constantly. Be especially watchful of boys and girls in their late teens, and young adults. Be *doubly* watchful of people in families with known cases—of *anyone* who has been in contact with an active case of tuberculosis. The best protection is an annual health examination, including X-ray examination of the chest. Most city health departments have X-ray facilities for those who cannot afford private care.

Metropolitan's free booklet, 42-Z, "Tuberculosis," contains up-to-date information about protecting your family and community from this disease.

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1 MADISON AVENUE, NEW YORK, N. Y.

"They Shall Not Die in Vain"

(Continued from page 253)

that most people fear autopsies because they know nothing about them, and that efforts to obtain consent by emphasizing what the autopsy is *for* and winking at any discussion of the procedure itself are likely to be less successful than emphasis on what it's *like*—a true description of what's done. Inevitably, this discussion led to my attendance at an autopsy—my first. I should say without hesitation that the autopsy is more extensive than most people think it is. I am equally certain, however, that few people would consider it gruesome, or disrespectful to the dead, or mutilating, or fearful. I didn't, and I was without benefit of any knowledge or training to cushion my sensibilities.

The autopsy was just getting under way when I entered the hospital's "morgue" with the medical director. I was impressed immediately with the similarity of the whole scene to that of an operating room during surgery; the group in white beneath the bright lights over a central table; the students peering down intently from a viewing stand at one side; the nurse presiding over a tray from which she passed up gleaming instruments as the pathologist reached for them; the general atmosphere of hushed, intense interest.

Members of the central group were identified for me by the medical director as we took our places in the viewing stand. The chief performer was the pathologist; the resident pathologist and one or two assistants in the department were near by to lend a helping hand as needed; several members of the attending staff who'd been interested in the patient were privileged observers about the table; others, along with every intern who could be spared from active duty in the hospital at the time, were in the tiers of hard wooden seats. Immediately below us was a nurse at a small desk, taking notes as the pathologist dictated every detail of his findings. Looking around the room as the autopsy proceeded, I saw not even a glance stray aside

(Continued on page 282)

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Our Nutritional Status

By AMOS R. KOONTZ

IN A RECENT ADDRESS, President John Stewart Bryan of the College of William and Mary made the following statement: "You know that today we are the richest, freest, best educated, and I verily believe, the happiest and healthiest people in the world. The measure of our prosperity is illustrated in the fact that, while we have about 6 per cent of the world's population, we have 32 per cent of the world's railway mileage, 44 per cent of the world's radios, 76 per cent of the world's automobiles, and 50 per cent of the world's wealth."

We are the healthiest people in the world; all medical statistics with which I am familiar confirm the statement. The state of our prosperity furnishes at least one reason why we are the healthiest people in the world. It is not the only reason. Wealth often lulls people into a sense of security and idleness and stops productive effort. Fortunately, it has not done this for the medical profession of America. The strides made by American medicine in the last fifty years have been enormous. The advances in American medicine are reflected in the state of our public health. The advances have not been localized in a few leading medical centers but have been widespread over the country. One of the main reasons for the widespread advances has been the part played by the American Medical Association in elevating the standard of medical education by causing the elimination of all Class B and C medical schools. Another factor has been the development of our modern public health programs, which were started just about forty years ago.

Nevertheless, constantly we hear alarming statements with regard to the state of our national health and also as to our nutritional status. I do not believe the facts justify some of the statements. Thus it has been said that 40 per cent of our people are on diets deficient in milk, milk products, fruits, fresh vegetables and meats. If true, it seems to be due to choice rather than necessity. The percentage of people who actually go hungry in this country is small. Proper diet, however, does not necessarily have any relation to the economic status of the person. Many people never drink milk simply because they do not like it. There are many vegetarians who never taste meat.

What has Selective Service shown us about the state of our nutrition? Early reports from the Surgeon General's office tended to show that the average stature of men inducted into the Army during the present emergency was greater than it was in 1917. Later reports indicate that the height of all registrants so far examined is about the same as in 1917—average 5 feet 7½ inches both now and then. The average height of federal recruits examined during the Civil War was approximately the same. However, while the average height of the recruit examined has not increased during the seventy-five years since the end of the Civil War, the average weight has increased; it was 136 pounds during the Civil War, 142 pounds during the World War, and is 150 pounds during the present emergency. The 8 pound increase in the average weight of today's American man of military age over the weight at the time of the first World War would seem to indicate that our nutritional state has improved, even if it is not entirely what it should be. Any deficiency we may have in nutrition is due to a lack of properly balanced diets rather than a lack of the proper quantity of food.

The height and weight figures quoted refer to all registrants examined. The figures for those classified by Local Boards as available for general military service show slightly larger men, the average height being 68.1 inches and the average weight 152 pounds. But what of the state of nutrition of those who have been rejected? Underweight is not listed as a major cause of rejection in National Selective Service Headquarters rejection figures. Indeed, it is not mentioned at all. If included it must be included under the heading "Miscellaneous." I do not know the exact percentage of rejections because of underweight for the nation as a whole.

In Maryland, the total number of rejections at the Army Examination Stations because of underweight alone has amounted to only 0.09 per cent of the total number examined. There have been other rejections by Local Boards because of underweight, but only if the weight was below the minimum of 105 pounds set by Army Regulations. No men weighing 105 pounds or more have been rejected by Local Boards because of underweight alone. Any such cases have been sent to the Army Examination Stations for final determination. The number rejected by the Local Boards because of weight below 105 pounds has been relatively small. The exact figures for these cases are not available. It is safe to say, however, that the total number of rejections in Maryland, both by Local Boards and Army Examination Stations, because of underweight alone is

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well under 1 per cent of the total examined.

Conclusion: Selective Service examinations have revealed no evidence of a loss of ground as far as nutrition is concerned, while there is definite evidence for believing that the present day American soldier is better nourished than that of World War I or of the Civil War.

One Hundred Years of Anesthesia

(Continued from page 276)

extracted a tooth in 1846; he requested permission to try the use of ether for a surgical anesthesia at the Massachusetts General Hospital, and on Oct. 16, 1846, he successfully did so, Dr. John Collins Warren operating. This and a series of other cases were immediately published and surgical anesthesia was made known to the world. Dr. Morton then desired to patent the discovery under the name of *"Letheon."* His claims to originality Dr. Jackson most vigorously opposed. Horace Wells in the meantime had died, so never became a party to the quarrel.

Dr. Morton's and Dr. Jackson's claims were debated at infinite length in Congress, and Morton actually was granted a patent, when Dr. Jackson suddenly and unexpectedly ran across the trail of Dr. Crawford Williamson Long. Jackson had never heard of Long until 1853, when Long read his first paper claiming priority in administering ether deliberately for surgical anesthesia before the Georgia Medical and Surgical Association. Dr. Long had previously printed a brief account in the *Southern Medical and Surgical Journal,* but this had escaped Dr. Jackson's notice. On March 8, 1854, Jackson went to Athens and interviewed Long, who furnished proof of his claim, and Jackson triumphantly produced this, so that Morton's pretensions were routed and the debates in Congress went on to other and more fruitful fields. But naturally the whole affair caused bad blood between Dr. Morton and Jackson and the heirs of Horace Wells, eventually between Dr. Long and Morton's adherents, and indeed between friends and champions in a wide circle, even involving Daniel Webster.

The controversy still smolders. When I made a pilgrimage to Jefferson in 1938, a proposal was before Congress to honor Dr. Long by the issue of a postage stamp. This had once more stirred that vocative organization to debate. A citizen of Jefferson who was most learned concerning C. W. Long and most helpful to me gave me some inkling of the matter.

"Do you realize, suh," he said, "that theah was a Yankee dentist who claimed to be the fust puhson to administah ethah?"

I allowed some such rumor had reached me, and then the peaceful calm of Jefferson was rent with a series of vituperations such as was a liberal education. On the pleasant hillsides of the country through which I had just passed could be seen the ruins of farm houses that were ascribed to the military operations of a certain General Sherman, and these furnished some explanation of the heat displayed.

When the stamp was finally issued in 1940, it drew forth the denunciations of Dr. Howard R. Raper, D.D.S., who champions the claims of dentistry in the persons of Horace Wells and W. T. G. Morton as the originators of anesthesia in a pamphlet called "Unearned Honor on a Postage Stamp" (Oral Hygiene, February 1940). Dr. W. Harry Archer, Assistant Professor of Anesthesia and Exodontia, School of Dentistry, University of Pittsburgh, stated at the Dental Centenary Celebration, March 1940, that: "So far as making any contribution toward anaesthesia is concerned, Long may as well never have lived." No one now doubts Dr. Long's claims to priority, but due to the delay in the publication of his announcement, the controversy has now shifted as to who is most responsible for furthering the use of anesthesia in surgical practice.

Impartial historians must recognize that as in the case of many scientific discoveries, such as evo-

(Continued on page 285)

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Meat . . .

and Your Nutrition Before and After the Baby Comes

MEDICAL science knows how greatly the nutritional needs are increased during the last four months of pregnancy and during the nursing period. Hence the diet recommended by the physician, before and after the baby comes, is of importance to the expectant or nursing mother.

In its recently published recommendations, the National Research Council has set down the amounts of each essential nutrient needed by the moderately active woman, during the latter half of pregnancy, and during the nursing period. Generally speaking, your physician's advice as to diet is based upon these official figures.

	Calories	Protein (Gm.)	Calcium (Gm.)	Iron (mg.)	Vitamin A (I. U.)	Thiamine (mg.)	Ascorbic Acid (mg.)	Riboflavin (mg.)	Niacin (mg.)	Vitamin D (I. U.)
Moderately Active Woman..	2500	60	0.8	12.0	5000	1.5	70	2.2	15	?
Pregnancy (latter half)....	2500	85	1.5	15.0	6000	1.8	100	2.5	18	400 to 800
Lactation.....	3000	100	2.0	15.0	8000	2.3	150	3.0	23	400 to 800

Wisely planned, well balanced meals will provide ample amounts of these essential nutrients for you. In such meals meat can have an important place. It provides complete, high quality proteins needed not only by the mother herself, but also for the normal development of the unborn child and later for the proteins contained in the mother's milk.

It contributes significant amounts of important B vitamins—thiamine (vitamin B_1), riboflavin (G or B_2), and niacin. The iron, copper, and phosphorus supplied by meat aid in providing the greater amounts of these minerals needed by the expectant or nursing mother.

ACCEPTED AMERICAN MEDICAL ASSN Council on Foods

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American Meat Institute

CHICAGO

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"They Shall Not Die in Vain"

(*Continued from page 278*)

from the focal point of attention, nor did I note any lessening of the charge of interest in the air. The calm flow of the pathologist's monologue was interrupted only occasionally as a staff member added some observation for the benefit of the interns.

Three incisions had been made on the body when we came in, the principal one running lengthwise from high on the chest to low on the abdomen. Transverse incisions on the lower chest and upper abdomen permitted the flesh to be folded back to give access to all the important organs. As this preliminary work was carried on, the pathologist was dictating a description of the body's external appearance. This completed, he started systematically to remove and examine the major parts, starting with the intestines and reproductive organs and moving on to study the bladder, gall bladder, liver, spleen, stomach, heart, lungs, thyroid gland and several others. Each such examination was a painstaking routine of weighing, measuring, and scrutinizing the removed part; the measurements went into the record, as did a detailed description of the appearance, with particular attention to what I took to be evidence of disease or variations from the normal. During these descriptions, the pathologist frequently paused at some length to find a suitable word for a certain color or consistency. While most of his language was technical, I was interested in the occasional occurrence of homely phrases like "cherry red" and "jelly-like substances."

Several times during the examination, staff members would step up for closer inspection, and once or twice an intern moved down from the stand to get a better look. Such maneuvers were accomplished without fuss or conversation; it was implicit in every action that this was an opportunity not to be taken lightly. Before each removed part was restored to the body, a small section was removed and set aside for microscopic examination. Reports of this study, I learned, would be added to the record as a final check on the "anatomic diagnosis" with which the pathologist concluded his dictation. Some idea of the thoroughness of the examination may be gained from the fact that the incisions were sewed up and the students dismissed just ninety minutes after we had entered the room.

I looked at the body carefully on my way out. Was it mutilated? Certainly, if one considers a scar to be mutilation, it was. So also, then, is the living body mutilated by any operation which leaves a scar. Obviously more extensive than the marks which remain after most operations, the autopsy scars were no more disfiguring. Clothed, the body would give no evidence of its altered appearance except the inescapable evidence of death itself. I probed my reactions further as I left the hospital. Was there anything gruesome about it? I had not, to be sure, found it pleasant to watch the pathologist examine the intestine, spreading it much as one does a roll of movie film, for careful inspection. Since no thought of unpleasantness had been reflected in the faces of other observers, however, I could conclude only that my feeling developed from the fact that I had never before seen the human intestine so exposed.

Essentially, there can be nothing objectionable in the fact that the pathologist raises the intestine, or the liver, or the stomach in his hands, any more than there can be objection to the fact that the surgeon may lift the foot to examine a sprain or fracture. The two actions may be separated only by degree of familiarity; if one is gruesome, so is the other. That any one who would approve the removal of, say, the gallbladder in an operation to prevent death or suffering should find anything gruesome in the removal of the gallbladder for examination after death seems also to be absurd in the extreme.

The literature on autopsies includes a report of a study of the Bible conducted by an Eastern medical school. An exhaustive search, the report said, revealed no doctrine which could be interpreted as opposing autopsy. In fact, an-

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OUR FOOD AND OUR TEETH, by Percy R. Howe. 4 pages. 5 cents.

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WHAT THE MOUTH CAN TELL, by Lester R. Cahn. 4 pages. 5 cents.

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other report included statements by officials of the Catholic, Protestant and Jewish faiths approving autopsies on the grounds that they have no religious significance in themselves and may help to alleviate human suffering. Religious objection to autopsy, obviously, must be limited to those with a simple belief in the physical existence of a Happy Hunting Ground.

Ultimately, all objections to the autopsy boil down to fear, and this fear boils down to ignorance of the nature and extent of the procedure itself. When it is known that the autopsy will include a minute examination of the principal organs and parts, and that the body will be altered in appearance by scars reaching from here to here and from there to there, the grip of fear must necessarily be relaxed. Distaste, of course, may always remain, but distaste is not so hard to deal with as fear. Where distaste prevails, physicians and hospital authorities could do worse, as a last resort, than quote a philosophy familiar to all of us. "It is rather that we here highly resolve," they might say, "that these dead shall not have died in vain . . ." When all else fails, it is possible that some families might be moved by the words which inspired the families of the Union soldiers who died on the battlefield at Gettysburg.

SULFANILAMIDE DERIVATIVES FOR INTESTINAL INFECTIONS

Two new members of the sulfanilamide family of drugs, succinylsulfanilamide and succinylsulfathiazole, particularly the latter, have been effective in preliminary studies with man in the presence of extensive ulcerative lesions of the bowel, Edgar J. Poth, F. Louis Knotts, James T. Lee and Frank Inui, Baltimore, report in the *Archives of Surgery*.

"The administration of succinylsulfathiazole," they say, "is suggested for the preoperative preparation of patients requiring operative procedures on the gastrointestinal tract and for the treatment of acute intestinal infections, such as typhoid fever and dysentery. The action of this drug is limited essentially to its local effect on the contents of the gastrointestinal tract."

"Don't you find that the Doctor's 'No Coffee' advice is pretty hard to follow?" "No indeed! But it would have been hard sledding if he hadn't said 'Drink Postum instead'"



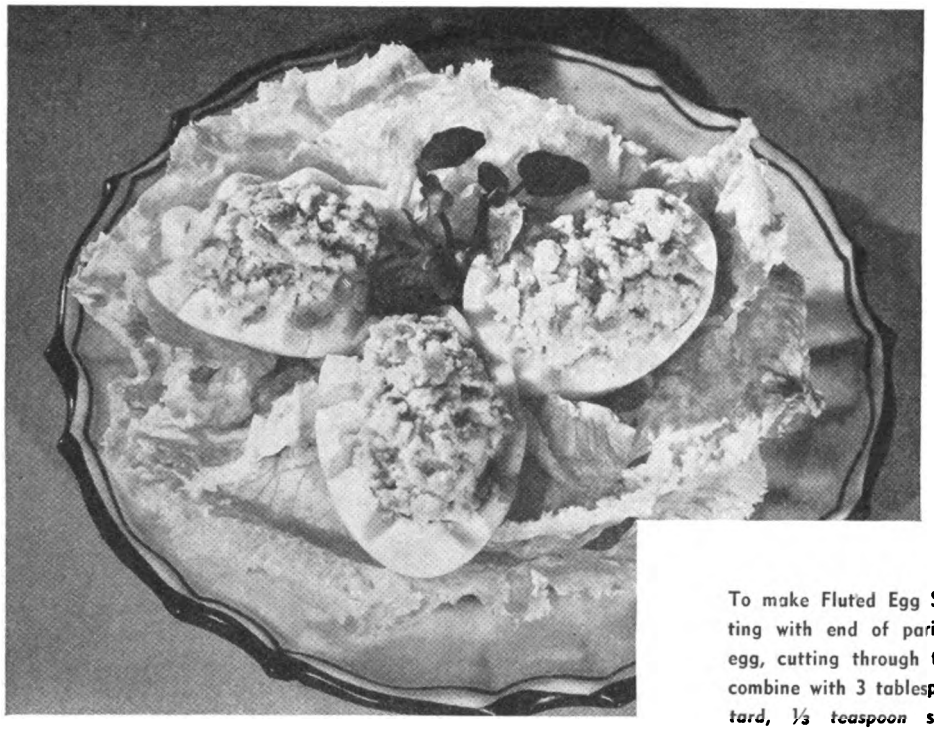
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For Postum's warmth and cheer and flavor make friends so quickly that forbidden drinks are soon forgotten. Yet Postum contains no caffein . . . no stimulants of any kind. It is simply whole wheat and bran, roasted and slightly sweetened. It's easy to make—and very economical. A product of General Foods.

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To make Fluted Egg Salad: Hard boil 6 eggs; flute by cutting with end of paring knife in saw-tooth fashion around egg, cutting through to yolk. Remove and mash egg yolks; combine with 3 tablespoons sandwich spread, 1 teaspoon mustard, ⅓ teaspoon salt. Refill fluted whites with yolk mixture; place in nest of lettuce, three halves to each serving. Sprinkle with paprika; garnish with watercress.

EASTER RECIPES

EASTER MORNING is the best time in the world for a breakfast party. Plan a help-yourself type of menu, then enjoy the sunrise service and bring your guests home afterward. Breakfast should include fruit juices in glasses on a tray, eggs, slices of ham or panbroiled bacon and sausages, plenty of hot coffee, and last but not least, an assortment of hot breads—your own homemade Hot Cross Buns, fresh from the oven.

SPICY HOT CROSS BUNS
(15 or More)

- 1 package fast granular yeast
- ½ cup lukewarm water
- ½ teaspoon sugar
- ½ cup scalded milk
- 1 teaspoon salt
- ⅓ cup sugar
- About 3 cups sifted flour
- 2 egg yolks, well beaten
- ¼ cup (4 tablespoons) melted shortening
- ¾ teaspoon cinnamon
- ¼ teaspoon ground nutmeg
- ⅛ teaspoon ground allspice
- Grated rind of ½ lemon
- ½ cup small seedless raisins

Pour the granular yeast into the ½ cup lukewarm water, add the ½ teaspoon sugar, stir and let stand 5 minutes to soften. Put the scalded milk, salt and remaining sugar into mixing bowl. Let cool. When milk is *lukewarm*, add softened yeast and 1½ cups of the flour. Mix and beat until smooth. Next add the beaten egg yolks, the melted (not hot) shortening, the cinnamon, nutmeg, allspice and grated lemon rind. Mix well, then add most of the remaining flour, mixing very thoroughly. Knead until smooth and elastic, using more flour if necessary, but keep the dough as soft as can be handled without stickiness. Lastly work in the raisins, dusted lightly with flour. Put dough into greased bowl, cover and let rise in a moderately warm place (82 to 84° F.) until fully doubled. Turn dough onto the floured board and divide into 15 (or more) even pieces. Shape into smooth balls. Place, almost touching each other, in greased biscuit pan. Cover well and let rise in warm place until doubled. Bake about 20 minutes in a moderately-hot oven (380 to 400° F.). Prepare a simple white frosting with 1 cup confectioner's sugar, 1 to 2 tablespoons top milk, and ½ teaspoon vanilla. Mix very thoroughly, and with it mark a cross on top of each bun while still warm but not too hot.

EASTER BUNNY ROLLS
(12 Rolls)

- 1 package fast granular yeast
- ½ cup lukewarm water
- ½ teaspoon sugar
- ½ cup scalded milk
- 1 teaspoon salt
- 3 tablespoons sugar
- 1 egg, well beaten
- 3 tablespoons melted shortening
- 2½ to 3 cups sifted flour
- 2 dozen seedless raisins

Pour the granular yeast into the ½ cup lukewarm water, add the halfteaspoon sugar, stir and let stand to soften. Put the scalded milk, the salt and remaining sugar into mixing bowl. Let cool. When the milk is *lukewarm* add the softened yeast and 1½ cups of the flour. Beat smooth. Stir in the beaten egg, the melted (not hot) shortening, and beat again. Then stir in enough more flour to make a medium soft dough that clings together in a ball. Beat until smooth. Let rise in a covered, greased bowl, in a moder-

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One Hundred Years of Anesthesia

(Continued from page 280)

lution and electricity, the idea was in the air, had been since the beginning of the nineteenth century, and many persons, including Humphrey Davy and John Collins Warren and the Russian surgeon, Pirogoff, all deserve an orchid, as Mr. Winchell says, in the credit.

Dr. Long, it should be remarked, displayed great reserve in the exchange of claims. He confined himself largely to procuring documentary evidence from persons who knew of his work and his early operations. Among these documents was a fee bill he rendered to Mr. Venable:

To James Venable

March 30, 1842—Ether and excising tumour	$2.00
May 13, 1842—Sulphuric ether	.25
June 6, 1842—Excising tumour	2.00

I have in my possession a holograph letter of Dr. Long's, undated (its authenticity is attested by Dr. Long's daughter and biographer, Mrs. Taylor). It contains a unique reference to Dr. Long's own suspicions of how the honor was wrested from him as follows:

"The evidence to establish the operation performed after 1842 was obtained to show that they continued (up to ten?). Dr. Wells claimed to have used ether as an anaesthetic. Permit me to say that a dentist and a surgeon from Boston, Massachusetts were in Jefferson, Jackson County, in 1842, 3, or 4 and remained for several weeks. The dentist practiced his profession and the surgeon operated for strabismus—I have always thought it possible the dentist was Morton or Wells and that a knowledge of the use of ether in surgical operations was obtained at that time."

This suspicion of Dr. Long's is entirely unwarranted by the facts. There is no evidence that either Dr. Wells or Dr. Morton was in Jefferson from 1842 to 1844, and their time is quite thoroughly accounted for during that period. But it gives an indication of how heated

Now It's Niacin

"Niacin" is the euphonious new name that has been chosen by the National Research Council as a synonym for nicotinic acid—and approved by Federal Security Administrator Paul V. McNutt. Associations with cigarettes and the "demon nicotine," Mr. McNutt explains, have aroused "unwarranted apprehension in the minds of the uninformed consumer" at the sight of the words "nicotinic acid" printed on food labels.

This substance is, of course, an invaluable member of the Vitamin B complex, an essential element of human nutrition—and not nicotine. Henceforward, therefore, it will be known as niacin—"ni" for the nicotine of its old appellation, "ac" for acid and "in" for vitamin, which is what it actually is.

From "News of Food" in New York Times

The American Institute of Baking has long been campaigning for just such a change in the name of this important added nutrient, one of the vitamins present in Enriched Bread. Now, under the new name of NIACIN, the buyers of bread will have added assurance that *Enriched* Bread is an important part of the daily family diet. The above newspaper clipping is an example of the widespread publicity given to this change of name. But it is earnestly suggested that all of you to whom parents and others look for information about nutrition, advise them of this new name for the essential vitamin . . . formerly Nicotinic Acid . . . now . . . NIACIN.

American Institute of Baking

DEPARTMENT OF NUTRITION

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Always drink Kemp's Sun-Rayed—the pure, undiluted juice of WHOLE tomatoes. Delicious. The Sun-Rayed Co., Frankfort, Indiana.

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the controversy became when as mild a man as Dr. Long could give credence to such duplicity.

Dr. Long personally was the highest type of American physician, and his career is illustrative of the fact that from very early times, even in pioneer days, the American physician had high educational and ethical standards for his profession. He was born in Danielsville, Ga., Nov. 1, 1815. He was named after his father's friend, William H. Crawford, once candidate for President of the United States and afterward Minister to France. His preliminary education was obtained at Franklin College, now the University of Georgia. From 1835 for a year or more he "read medicine" in the office of Dr. Grant of Jefferson. This form of apprenticeship was quite common then, and indeed the preceptor-apprentice relationship might well be revived in medicine today.

Later he went to Lexington, Ky., and attended the sessions of the Medical Department of Transylvania University. This was the fifth medical school to be founded in the United States. It is a credit and tribute to the spirit of the pioneers that when they established their homes in the great Western wilderness, they brought their civilization with them. Transylvania University still flourishes, but the medical department passed out of existence in 1859. There are some mementos of it still. In an old, unused portion of one of the buildings on the campus of Lexington is one of the finest historical medical libraries in the country. It was brought there by the eccentric Charles Caldwell, one of the faculty members who happened to be visiting in Paris just after the Revolution, when the libraries of the impoverished once-great came on the market. This library was among them, and Caldwell wrote back to Kentucky to obtain funds and authorization for its purchase, which were forthcoming, and the library was duly housed at Lexington. Doubtless Dr. Long, while a student, became familiar with these medical classics of the great masters from Hippocrates to Cullen.

In 1837 Long entered the medical department of the University of Pennsylvania and graduated with the degree of M.D. in 1839. In Philadelphia he came under the influence of some of the greatest medical teachers of the day—Horner, the anatomist, Nathaniel Chapman and Samuel Jackson, who wrote respectively the first American textbooks on therapeutics and the practice of medicine, William Gibson, the surgeon, and William W. Gerhard, notable for his differentiation of typhus and typhoid fevers and his introduction of the stetho-

(Continued on page 301)

Easter Recipes

(Continued from page 284)

ately warm place (82 to 84° F.) until doubled in bulk. Turn the risen dough onto floured board and pat out as much gas as possible. Divide the dough into 12 even portions. Roll each piece into a strand 14 inches long. Tie in a knot and place on a greased baking sheet. Bring the ends up straight to form "ears." Scald the raisins in hot water and dry on a cloth. Press two raisins in each bunny face, for eyes. Brush with beaten egg yolk or with evaporated milk, diluted with a little water. Cover and let rise until light (¾ to 1 hour). Bake about 20 minutes in a moderately hot oven, 375° F.

EASTER EGG PARTY CAKE

(3 Layers)

1 package fast granular yeast
3 tablespoons lukewarm water
⅛ teaspoon sugar
½ cup vegetable shortening
½ teaspoon salt
1¼ cups sugar
1 cup milk, scalded and cooled
2½ cups sifted cake flour
1 teaspoon vanilla
Grated rind of ½ lemon
4 beaten egg whites

Put the granular yeast, the 3 tablespoons water and ⅛ teaspoon sugar into a cup, stir and let stand to soften. Add the salt to the shortening and cream until fluffy, adding 2 or 3 tablespoons of the milk to aid it. Then add the sugar gradually, blending in each portion thoroughly before adding more. Next stir in portions of the flour and *lukewarm* milk alternately, until all are used. Add the vanilla, grated lemon rind and the softened yeast, blending them in thoroughly. Lastly, fold in very carefully the egg whites beaten until stiff but not dry. Pour batter immediately into three 8-inch layer cake tins, well greased and lined with wax paper. Let stand in a moderately warm place for 3 hours. Bake about 25 minutes in a moderately hot oven, 350° F. When layers have cooled sufficiently, put them together with red raspberry jam. Frost the top and sides with boiled frosting, tinted a delicate pink. Decorate with tiny candy chicks, eggs, bunnies, etc.

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How Does the Navy Get That Way?

(Continued from page 260)

way, for this human material is much too precious to be wasted. A surprising amount of time, trouble and treasure is devoted to guarding the Navy's health. On board ship, the doctor regards the care of the sick as his principal job, but he is also the public health officer and has the responsibility of detecting and correcting insanitary conditions. The bakery, the barber shop, the laundry, baths and toilets, the galley where the food is prepared, the clothing of the men, the cleanliness of bunks and living quarters are his constant concern. His recommendations to the captain on matters of hygiene are followed by prompt and effective action, for everybody in authority understands that a healthy crew is vital to success in combat.

On a warship the air is carefully controlled in its temperature and humidity. Its amount and rate of flow are so regulated as to be healthful. Water for drinking and bathing receives equal attention. Housewives have commented in envious words on the cleanliness of ships of the Navy. The clothing of the men has been carefully studied in its relation to their health. Even their amusements and recreation are considered as activities which may have an important bearing on their well being. All of these are a part of the navy doctor's cosmos. A warship is essentially a movable gun platform, and other characteristics must be subordinated to this one. In spite of the limitations thus imposed, modern warships are healthful and comfortable homes.

THE GREATEST MENACE

For centuries we have heard of the dangers that assail men who go down to the sea in ships. We have come to accept this idea as truth, and even to embody it in our prayer books. As a matter of fact, unless engaged in actual combat, the navy man is much safer on his ship than he is when ashore on liberty. The diseases and accidents of the civil community are a far greater menace to his health than are the machines, the explosives and the living conditions on board his ship.

During the first century of its existence, drowning cost the Navy more lives each year than any other cause, but for the past few years, motor vehicle accidents on shore have far exceeded all other causes of loss of man power. To the navy doctor this is a tragic verity. The time to pray for your boy in the Navy is not when he is safe at sea in his ship, but when he goes ashore.

DIET AND DISEASE

And what do you think have been the greatest dangers to which men in ships have been exposed? Warfare? Shipwreck? Sirens singing their luring lay? No, you're wrong again. Diet and disease have been the leading assassins all through the ages. They still hang around, eagerly waiting for us to relax our vigilance.

Scurvy and beriberi, both due to faulty diet, have won wars and de-

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feated campaigns. Malaria, typhoid, typhus and dysentery have decimated the men of crews and armies. Yellow fever was a potent factor in the strategy of all our wars up to the time of the first world war. But these killers are no longer feared, because we know what to do now. Our men are protected by inoculation against smallpox, typhoid, tetanus and yellow fever. Scurvy and beriberi are prevented by careful attention to dietary needs.

It used to be, in romantic times long past, that the headlines accented the surgeon, knee deep in gore, who lopped off limbs and seared the bleeding stumps amid the roar of battle. Nowadays, the lifesaver is the doctor who watches the ration and makes sure that no vital element is lacking, or the one who snoops about to find where the flies and mosquitoes are breeding. There is little romance in such work, but it is of tremendous importance in protecting our investment in healthy bodies, and thus it may be the deciding factor in battle.

Some day, some one will record with flaming pen and emotional adjectives the story of scurvy in ships. The subject is dripping with drama, reeking with romance, and turgid with tragedy. But it is a dead cat, only a highly-scented memory, for the disease is practically unknown in the ships of today. The death rate in our Navy, despite its accidents, explosions, crowded quarters and the hazards of the sea, is only one quarter as high as that of the United States as a whole.

IF SICKNESS COMES

When a man in the Navy does fall sick, or is injured, he is assured of skilful care under any but the most exceptional conditions. Every warship larger than a destroyer has one or more doctors on board and also has its own hospital, known as the sick-bay. On the larger vessels there are complete facilities for diagnosis and treatment of conditions in all the special fields of medicine. Operating rooms and surgical equipment are designed for general surgery or any of its specialties. Dental care is not neglected, for all the big ships have dentists, with complete equipment, as a part of their complement.

We sometimes lose sight of the fact that every well balanced navy must have one foot firmly planted on the shore. The ships need navy yards and supply bases for upkeep and replenishing stores. Hospitals on shore are equally necessary for treatment and repair of sick and injured bodies. A list recently published showed 24 United States naval hospitals, with more than 8,000 beds, also many smaller hospitals which are classed as dispensaries. These are spread around the world in areas where the Navy operates. Every effort is made to maintain these on the same high level of service and efficiency as the best hospitals in civilian communities.

Navy doctors must be graduates of Class A medical schools and are selected by competitive examination. Medical books, journals and courses of postgraduate instruction are provided to help them keep up with the advances of medical science. The present system of selection makes every step of their promotion a matter of severe competition and is an added incentive for them to work hard and keep up to date. The navy physician who likes to sit by the side of the road and just smell the flowers, or to watch the rest of the world go by, doesn't get very far.

In the hospitals and on the hospital ships, nursing is under the supervision of women belonging to the Navy Nurse Corps. They are carefully chosen from graduates of approved schools of nursing, and no undergraduates are employed. It is largely due to their efforts that such a high standard of nursing is maintained in the hospitals of the United States Navy.

On board warships and at many remote bases, nursing is done by men of the Hospital Corps. These are enlisted men of better than average education who are temperamentally suited for care of the sick. After finishing the course at a naval training station, they go to one of the Hospital Corps training schools and then to one of our large naval hospitals for further education. It is surprising to see what a competent nurse or technician a high school boy becomes after such a course. Dr. T. B. Magath of the Mayo Clinic, after observing their work with the Navy's Mobile Base Hospital, wrote: "Probably the most interesting part of the whole experiment was to observe the efficiency of the Hospital Corps man. Not only was he able to be a good mechanic, electrician or plumber, but he was able to clear land of virgin brush, lay water lines, erect shower baths, build concrete foundations for buildings and, of course, carry out with usual navy efficiency laboratory and operating room technics and general nursing care. These men immediately gain respect and admiration."

SEAGOING HOSPITALS

One of the ties that bind the Medical Department of the ship to the hospital ashore is the hospital ship. Since 1920, the U. S. S. Relief has served the fleet in this capacity. Recently the U. S. S. Solace has been commissioned, and others are on the way. These ships have all the facilities of a large city hospital, with specialists in every branch of the healing art. They accompany the fleet and also supplement the medical facilities of remote naval bases. They are equipped to act as public health laboratories, thus aiding to prevent or control epidemic disease, either afloat or ashore.

Flying hospitals and ambulance planes are now well established, and many lives are being saved by quick transportation of patients by air. Planes can do what no other vehicle can. They are able to carry patients quickly and comfortably over the roughest sea or the worst sort of country to a hospital or hospital ship, where they can receive skilled care. In many cases, an hour or two gained in getting the patient to a hospital may save a limb or a life. Such life-saving flights now occur so often that they are no longer news. What used to be a dramatic event is now part of the routine, but it still thrills us old timers to see a patient who once would have been doomed to death or serious disability saved by air transport. Soon all hospital ships will carry their own aircraft, and this will immediately widen their field of service.

We have circumnavigated our subject and come back to the rhetorical question of the title: How does the Navy get that way? The answer is "by recruiting healthy men and keeping them healthy!"

The ideas and opinions here expressed are the private views of the author and are not to be regarded as policies of the Navy Department.—Ed.

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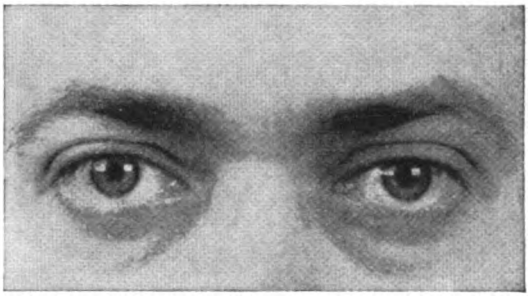
A PAGE OF EYES AT WAR

Can you identify their owners' jobs?

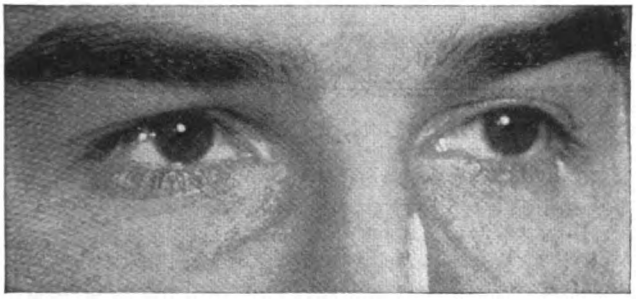
THESE PICTURES show the eyes of actual people at work on jobs where better light is helping to meet America's demand for speed. In factories, in offices, in homes, eyes like these are being called on for a million critical seeing tasks. How well they are done, how easily, how *fast,* depends on how well we can see. And that, given good eyes to start with, depends on the light...



MAN, AGE 60. Aircraft mechanic during last war, then took up selling. Used spare time to equip machine shop in basement. Now making a living from his hobby, turning out precision parts at home for local war plants. Says he doesn't have to waste time taking work over to a window for micrometer reading since he put in better light. Gets no rejects, either.



MAN, AGE 27. Formerly draftsman in architect's office. Now with large engineering firm, drafting plans for new plant to build engines for the Navy. Under cool G-E fluorescent lighting, works longer hours with less fatigue—impossible with tin-shaded lamp at old job!



BOY, AGE 19. Now taking advanced civilian pilot training course. Finds time in addition to ground school work to be a sophomore in the local university, studying mathematics, economics, geography. With so much homework, he's careful to protect his good eyesight with a 100-watt G-E bulb in his reading lamp.

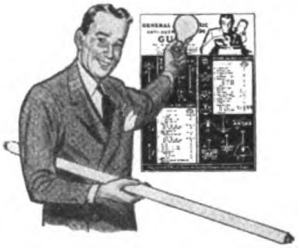


WOMAN, AGE 26. Left peacetime office job for position as secretary to airplane factory official. Does more work with fewer mistakes and less eyestrain, still feels fresh and alert for civilian war work, thanks to the new, efficient G-E fluorescent lighting. Says she wouldn't go back to that old poorly-lighted office for anything!



WOMAN, AGE 72. Knit her way through the last war and is going strong through this one. Younger friends have to hump to equal her Red Cross production. Says eyes aren't much worse than they used to be, but woe betide any member of the family who "borrows" the new 150-watt G-E bulb from her reading lamp!

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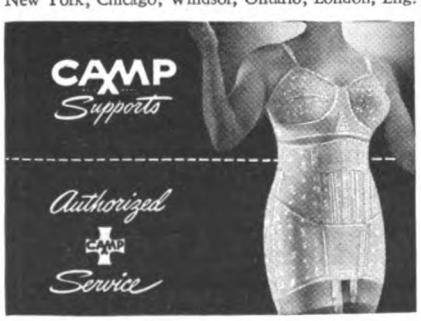
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QUESTIONS AND *Answers*

Copper Kettles

To the Editor:—I should like to know how you feel about the use of copper kettles when making pickles to secure a bright green pickle.

Answer.—If bright green pickles are obtained through the use of a copper kettle, a significant quantity of copper must be dissolved by the brine. The bright green color which is given vegetables by the addition of copper salts is not caused by preserving the chlorophyll but by actually dyeing the vegetable with the copper salt used. This is shown by the fact that vegetables devoid of chlorophyll assume a green color on the addition of copper salts.

There is also a lack of agreement as to the harm that might be caused by the addition of copper to green vegetables. It appears that copper combines with chlorophyll to form a compound which is not readily available, and is therefore relatively non-toxic.

In some cases so much copper sulfate has been added to canned vegetables that one can of peas, for instance, will contain as much as 2½ grams of this salt. This amount of copper would be harmful.

With the amount of evidence that is now available, we would not want to condemn or condone the manufacture of pickles in copper kettles. It is safe to say that this is an unnecessary practice and for this reason inadvisable.

Punishment in School

To the Editor:—The teacher was out of the room, and when she returned all was not as quiet as it should have been. My child was made to put his hands behind his back, put his head on the table and remain that way for one hour. He was denied all participation in educational activities for that period. I should like to know your opinion as to the effects of that type of treatment for a 6 year old child in the first grade?

I do not wish to be misunderstood. I believe in discipline in school and recognize that it is necessary, but I should like to know if the medical profession approves of such treatment of young children. A great many maladjustments and wrong mental attitudes have their inception in the early years of growth. Humiliation is, I think, a contributing factor.

L. W., Washington, D. C.

Answer.—The answer to your question depends entirely on your conception of what a schoolroom ought to be. According to the old conception of the schoolroom where every child sits in his seat, refrains from whispering or moving about unless he has permission and is generally submissive to what the teacher considers good discipline, your child should be punished. According to the modern conception of the schoolroom for 6 year olds, quiet and inactivity is not to be expected. A reasonable amount of activity and its accompanying noises, if it does not become boisterous and if it remains as purposeful as can be expected, is considered more normal than the enforced quiet of the traditional schoolroom. There would consequently be many educators who would consider that your child should not be punished at all, entirely aside from the suitability of the punishment administered.

The modern psychologist would consider that needless humiliation

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is as bad as excessive physical punishment, if not worse. Any child at the age of 6 should not be expected to remain quiet with his hands behind his back for an hour. It is not natural for a child to do so and to enforce such quiet on him is unreasonable and unnecessary. If the child has actually done something which he ought not to do because it is genuinely important that he should not do it or because it has infringed on the rights of others, and not merely because it has annoyed an adult, he should be punished by taking away one of his privileges. A wise teacher will know the most effective punishment for each child. Punishment, however, must not be given in a spirit of revenge or getting even, or "I'll teach you to behave, you little imp." It must be given calmly in a spirit of constructive helpfulness to the child.

Was your child the only one punished? If the punishment, unsuitable as it was, was given the whole group, humiliation of any one child would not be a factor, but even so we would regard the punishment as unsuitable.

Hernia in Infants

To the Editor:—Can an infant be ruptured from crying? Does it do an infant any good to hold him up in the air by his feet for a moment after each bath?

F. M., Illinois.

Answer.—Unless there is a defect in the abdominal wall, crying in an infant will not produce a hernia. Once in a while where there is a defect at the navel a hernia protrudes when the child cries.

We know of no reason why it is of any benefit to a child to hold him up by his feet at any time. It is sometimes necessary in making a physical examination for the doctor to do this.

Hard to Get Up

To the Editor:—What do light and dark of the early morning hours have to do with one's ability to get out of bed without effort? In the spring when the sun is up early I enjoy getting up, but in the winter when the sun rises two hours later than I am forced to get up. I have an awful time



Women and Defense

As in the last war, American women are proving that they can do immeasurably more than "keep the home fires burning". Their part in the defense industries, in the field of nursing, in the various branches of civilian defense, in buying Defense Bonds, and in generally helping to maintain an unconquerable national morale and unity is truly magnificent. . . . The importance of sensible personal care during these days of strain and tension cannot be overestimated. A fresh, well-groomed appearance adds to our sense of personal fitness and helps to bolster morale. . . . In these days there is no excuse for primping; money should not be wasted on needless luxuries. But we submit that necessary aids to good grooming, carefully selected and used economically, are indispensable. . . . A woman can do a man's work without sacrificing her femininity. Today, overalls and uniforms add a patriotic and therefore glamorous touch to the renowned loveliness of American women. . . . For Defense Buy United States Savings Bonds.

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rising without driving myself. What causes one to want to sleep later of a morning in the winter than in the summer or spring?

H. S., Iowa.

Answer.—Such experience should not lead one to generalize. Perhaps it is personal. In any case, a few experimental tests would probably give a better answer than theories and speculations could give. The eyelids allow some light to pass into the eyes even though the lids are down. Perhaps the ease of rising in the spring results from being gradually awakened by the light before the need for arising has come. Try sleeping in a dark room or with a black bandage over the eyes, when the sun shines early in the morning, and learn whether the winter experience is repeated. Or in the winter have an artificial light placed in your sleeping room some time before you usually awaken. Also, winter temperature may play a role. If you have been accustomed to sleeping in a cold room, try a bedroom with the temperature of springtime. Perhaps the singing of birds in the spring favors a cheerful awakening; that could be shut out by covering the ears or having the windows closed in the morning. We recommend personal investigation; the tests should be tried many times.

Heart Stops Beating

To the Editor:—In our biology class, a boy brought an article which he found in a newspaper about the man whose heart had stopped beating for twenty minutes. While discussing it, we disagreed as to the amount of truth in the article. I am enclosing the article, and our class would like to know what the American Medical Association thinks of it.

D. D., Wisconsin.

Answer.—Your first question, whether we believe that the event occurred, can be answered simply by saying that the original article appeared in *The Journal* of the American Medical Association.

The next point that we feel must be discussed is the possible way in which your group has interpreted this event. This was not an instance in which a person going normally about his business suddenly had his heart stop for a period of twenty minutes and then just as suddenly had the heart start beating again without any ill effects. The person to whom this happened was on the operating table; he was undergoing an operation on the chest. The operating team was fully aware of the action of the heart and lungs and the reaction and condition of the patient at all times. It was noted immediately when the heart stopped beating. Immediately, measures were started to keep up the circulation and aereation of the tissues. Potent drugs were given, some of these being introduced directly into the heart itself. Massage of the heart was started. Artificial respiration was given in which only oxygen was administered.

The record shows that the heart did have a few voluntary movements five minutes after the original stopping. During the remainder of the twenty minute period the heart again showed some signs of feeble beating, which continued only momentarily and then stopped. The patient received oxygen directly into the lungs by means of the breathing apparatus which had been connected to the lungs before the operation began.

This occurrence has taught doctors some new features. While this is only one case, at least it has demonstrated that the time a heart can stop and normal recovery can occur is much longer than was formerly believed. It also shows that recovery is dependent on adequate and proper tissue oxygenation, especially brain tissue. In this case it was done by immediate and simultaneous artificial circulation and respiration.

Finally, you must remember that this is but one instance, and it doesn't prove that the same results can be expected in every other instance. Therefore, all that can be accepted at this time is that one person's heart did stop and remain stopped for twenty minutes, and he did recover without any apparent damage to the brain.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

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Gasoline Intoxication

(Continued from page 257)

been known that the hydrocarbons were the poisonous elements in gasoline. Today's modern refining does not remove hydrocarbons, because if it did the product would no longer be gasoline. But new products have crept in which tend to make gasoline more toxic than formerly. The olefin and aromatic content is higher. Gasoline evaporates more quickly, hence is more easily breathed. When gasoline has a high amount of benzene, it is more toxic because the body will absorb it more easily. There is a great deal of difference in gasolines, depending on source and production methods.

Most cases of gasoline poisoning so far reported have resulted from exposures during various processes concerned with its manufacture, from its use in industry as a solvent, its use in dry cleaning establishments, or because children got hold of it and drank it. Severe chronic poisoning cases have been reported from time to time in cleaning establishments, especially through pressing clothes still damp with gasoline, causing the heavier more dangerous fractions to mix with air breathed by the workers. Such dangers are also present in the home when gasoline is used for cleaning.

Simply by substituting kerosene for gasoline in an industrial application, Dr. O. M. Spencer, surgeon of the United States Public Health Service, reports how a factory reduced dispensary visits by half and nearly doubled production. While gasoline was used, in addition to having various conditions of ill health, the women were unusually talkative, giggled a great deal and were foolish beyond explanation. Men, on the other hand, were unreasonable and easily angered. Dr. Alice Hamilton, previously special investigator of poisonous industries for the United States Bureau of Labor Statistics and now a professor at Harvard University, told of a foreman in a rubber plant com-

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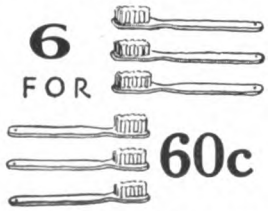


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plaining that he had to be very careful what he said to his men late in the afternoon after they had been working in gasoline fumes, as they were easily and unreasonably angered.

Hospitals report numerous cases in which children have required emergency treatment because of drinking gasoline. Cases requiring long hospital care and even causing death have also been reported. While more children appear to get hold of kerosene than gasoline, the latter cases are more serious. Up to 50 per cent of deaths have been reported in series of cases where children drank gasoline. About ten years ago, *The Journal* of the American Medical Association reported a case in which an 8 year old boy put a tube into the tank of his father's car and sucked. A playmate grabbed the tank end of the tube and blew, forcing gasoline into his friend's mouth. The resulting illness was so severe that the boy was not well enough to go to school for over two months, after weeks of hospital care.

It is well known that some people are far more susceptible than others to gasoline poisoning. The presence of food and fats in the stomach also delays absorption. Gasoline, on the other hand, is absorbed far more quickly when it contains a lot of benzene.

Just how much gasoline has to be in the air before people die on short exposure is not known. Neither is there any standard figure for the amount which causes intoxication. The Massachusetts code sets the maximum allowable amount in which people may work at 1,000 parts of gasoline per million parts of air. This legislation is a step in the right direction, even though it does not form any guarantee that people may work in air so permeated and maintain their health. In fact, many authorities feel that the amount permitted by the Massachusetts code is too high for continuous work, that susceptible persons may get gasoline intoxication with but 300 to 500 parts of gasoline per million parts of air. One physician found nervous symptoms a common indication of poisoning, among rubber plant workers breathing only 110 to 450 parts of gasoline per million parts of air. Dr. Fieldner, of the United States Department of Commerce, Bureau of Mines, has studied the problem at length and says that men exposed to as much as 1,000 parts get drowsy, dull, and some may even develop numbness in as little as five minutes. Within an hour, they are dizzy, suffer from lack of muscle control, and experience slight nausea. When the amount of gasoline in the air is upped to three times that amount, the same symptoms appear, but more quickly. When it is shot up to 7,000 parts of gasoline, the men are intoxicated within five minutes. Animals die very quickly in fumes above 10,000 parts per million.

Poor ignition, poor mixing and vaporization of gasoline and air, too rich a mixture, or incomplete flame propagation cause gasoline vapor in exhaust gases. This may become a serious problem if traffic is stopped in tunnels for any length of time.

There do not seem to be standard signs by which a physician is able to examine a body and know that the person died from gasoline poisoning, but certain things do show up quite uniformly. Some of these are injuries to the brain and other parts of the nervous system, lung damage, broken blood vessels with hemorrhages into various organs and bronchial tube irritation.

Acute poisoning, as may occur in air heavily laden with gasoline and poorly ventilated, plays havoc with the nervous system. The victim may fall unconscious and die immediately or within a few hours. Or, if death is delayed, the lack of consciousness may be less rapid and resemble acute alcoholism with a brief period of incoordination, excitement, fighting and swearing, mental confusion and trouble with swallowing and speech. Delirium and unconsciousness, lasting for hours or even days, follow. The type of unconsciousness depends on the kind of gasoline.

Warning signs that acute intoxication may occur if the person does not get out of the fumes include headaches, blurred vision, dizziness, nausea, loss of appetite and ringing in the ears.

One state of intoxication is known as a "naphtha jag." Here the sensation may be pleasant, and people have been known either to drink or inhale gasoline fumes to get this effect. The only trouble is that usually a "naphtha jag" does not result. The results are usually extremely painful.

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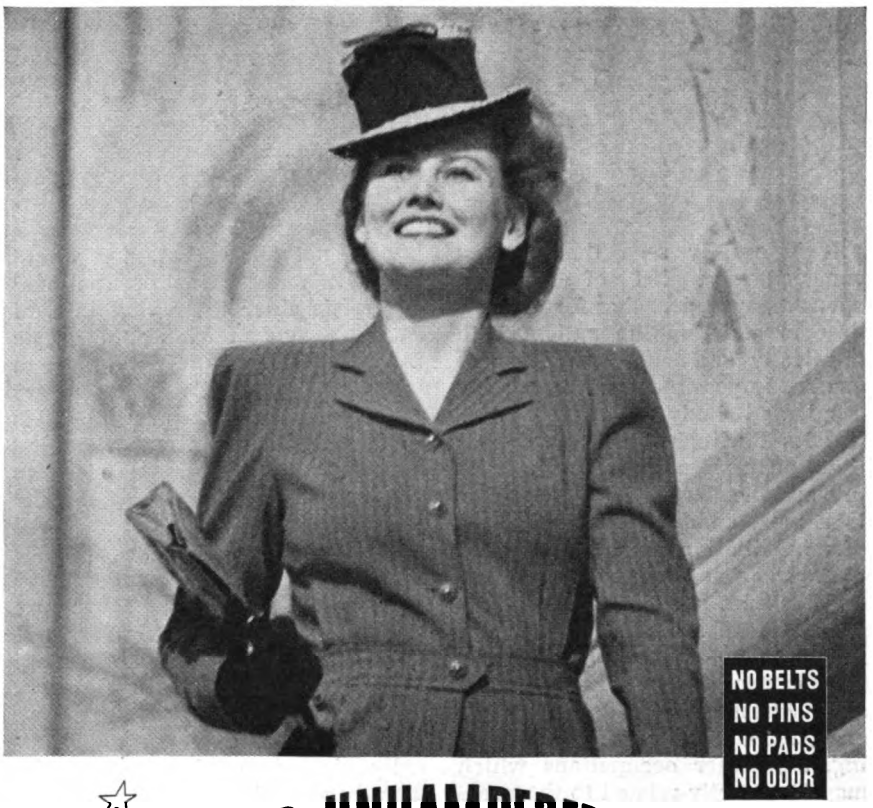
Opinions as to the extent of chronic poisoning differ. The chronic type occurs after exposure to low concentrations over a long period. These people do not get the severe symptoms found in acute cases. But minor ill health may start almost any time after exposure, although it may be a matter of months or even years before serious trouble starts. This condition then becomes progressively worse as long as exposure to the fumes continues. Dr. Machle believes that ill health follows acute poisoning more frequently than it is suspected, even though most patients recover without later trouble. On the other hand, he does not think that the number of chronic cases is large.

The most serious after effects of acute poisoning are epileptic-like seizures which may continue to occur two or more years after the acute stage. The most common after effects are neuritis, poor memory, and a generally dulled intellect.

Interesting is the statement of the Cincinnati physician that lead poisoning will not result from the use of leaded gasoline as usually handled in commerce. He says that numerous cases of lead poisoning caused by the handling of motor fuel containing tetraethyl lead have been brought to his attention, but in every instance careful investigation has proved that lead poisoning was not responsible for the illness.

First aid precautions to be observed when a person has been overcome by gasoline fumes are: First, get the person away from the fumes and into the air. Second, keep him warm. Put him to bed as soon as possible. Third, give the victim a cleansing bath to remove any gasoline on the skin. Usually there is little doubt when a person is suffering from an attack of acute gasoline poisoning. The odor of gasoline usually clings to the clothes and skin. If a person has swallowed gasoline, it can be detected on the breath and in the vomit.

It is well to remember that much ill health and even death may be caused either by swallowing or by inhaling gasoline. The product of today is more dangerous than that used fifteen years ago, and its increased use gives more and more opportunities for poisoning.



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Employment Is Nature's Best Physician

(*Continued from page 269*)

It is readily seen that such a comprehensive list of activities opens many approaches for the purpose of assisting the patient both physically and mentally. It is, of course, impossible to separate the mind and body effects. Dr. C. Charles Burlinghame, Physician in Chief of the Neuropsychiatric Institute and the Hartford Retreat, refers to a most comprehensive program of rehabilitation under his charge: "The program of occupational therapy includes not only making rugs and baskets, arts and crafts, and modeling, but instruction in music, in the fine arts generally, nature study, horticulture, domestic science, home economics, home nursing, and other occupations which may be directly related to the problems which will confront our guests on their return to their usual position in society. It includes golf and tennis, outdoor sports generally, gymnasium work, pool, bowling, etc., which tend not only to restore both body and mind to normal but give an introduction to a permanent healthful hobby for the future. These are the modern substitutes for powders and pills, restraint and force."

It is probably because of his hobbies more than anything else that the man on the street keeps his mental and physical balance. Every one is an occupational therapist in the sense that he has some hobby, some outlet for blowing off steam. From the man who collects seed catalogues, to the artistically minded man who collects mementos of Gilbert and Sullivan there are all kinds and degrees of people who use hobbies as a shock absorber in the fast trip over many rough roads which characterizes our ultra-modern living. Joseph Hoffman in his machine shop, Helen Jepson with her "singing china," Gelett Burgess building his crazy village figures, Lauritz Melchior making candy, Colonel Lemuel Q. Stoopnagle with his doctored newspaper photographs—realize the help to their spirit which such outlets afford. They probably do not know that they would most likely make good occupational therapists since their vital interest in such avocations would create infectious relationships through which they could gain and sustain the interest of the patient. It is this liking for new and vitalizing experiences which is so close to our nature and which affords the basis for the modern occupational therapy rationale.

What does occupational therapy do for the patient? There are many important contributions it may make to modern and more effective treatment of the sick. In the first place, it gives the patient, whether he is mentally or physically sick, something he can do. The therapist has a veritable magic bag of tricks for gaining the patient's interest. Once the start based on genuine interest is made, the patient may find a stabilizing activity which will help to put him on his feet.

Occupational therapy improves the morale. The patient who is suffering from a broken leg may be more basically affected by "a broken mind." That is, while his leg may ache the really disastrous effect of the accident may be on his thinking, if he takes a fatalistic attitude toward his physical, social and economic recovery, if he thinks that he may not be able to get back on the job or feels that he will not be able to work as well as before, that his neighbors are unconcerned, that he is without friends, or that he is being neglected in the hospital. Such a patient needs something to occupy his thoughts, to replace these morbid preoccupations. His social tolerance has been weakened. This is where occupational therapy comes in. The therapist may bring a rug to be woven, a basket to be made, puzzles to be unfathomed, books to be read. Soon, her radiant personality fused with the infectious urge of the task at hand creates a therapeutic situation which serves to brighten the patient's day with new and happy experiences.

This is probably more apparent in the treatment of the mentally ill. One of the characteristics of the largest group of the mentally sick, the dementia praecox patients, is that they are suffering among other things from a deep feeling of failure. Their sense of worthwhileness has been lowered, they feel that they are not only unable to cope with the hard world of reality but in many cases that they are unworthy of attempting the task. It is amazing to see such persons boosted in spirit by fashioning an artistic piece of pottery, by the awakening of their ability to play a good game of tennis, by the evocation of their social capacity brought out in the intriguing music of the dance. Such patients are looking for ways and means of boosting their confidence, and occupational therapy may supply the answer to this need.

The patient, regardless of his disease, will do something; he will have an outlet, and whether this expression is beneficial or harmful must depend to some extent on the doctor. Occupational therapy provides a medium for a constructive outlet. In talking with a dementia praecox patient who had improved to such an extent that he was being discharged from the hospital, I was much impressed with his statement that the recreational activities of the hospital had "let in the light." Further conversation brought out his idea that he was seeking something to take the place of many distracting and tormenting ideas which had confused him and made it difficult to carry out the normal plans he had made. When he became immersed with such troublesome ideas he would make it a habit to take his golf clubs and go out on the course. While he was playing "the light came in"—he was accepting brightening ideas, pleasurable thoughts to replace the morbid preoccupations of his disease. He seemed to be able to forget his troubles while following the elusive golf ball over the wide, inviting expanse of the course. Psychiatrists remind us that such replacement therapy provides an effective approach in treatment. The many types of activity which the therapist has at her disposal may contain something which will afford the patient a constructive outlet. The utilization of such material depends on her personality, training and ingenuity.

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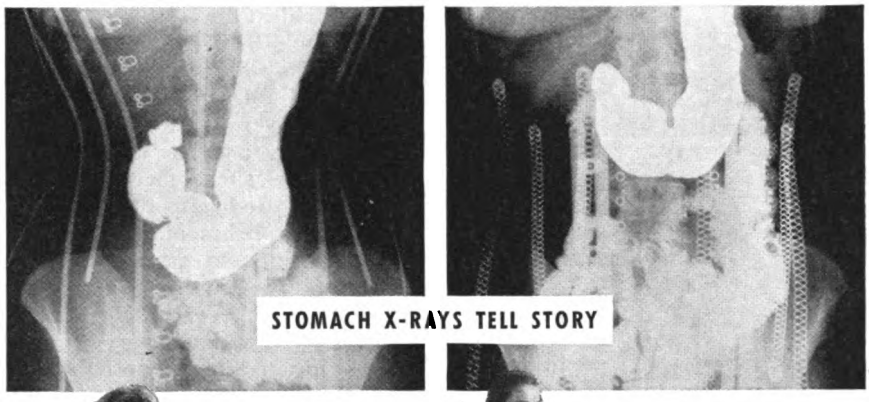
Occupational therapy is fully conscious of the fact that there are many cases of "an overactive mind in an underactive body," and conversely that there are cases of "a poorly functioning mind in an overactive body." For the first group, the hand may serve to stabilize the mind. Educators, psychologists and psychiatrists are calling attention to the importance of using the muscles for the purpose of creating a serene and well functioning mentality. The occupational therapist is confronted by a mentally sick patient with delusions and hallucinations. Trying to talk to the patient seems only to create further problems. He talks incoherently in a world of fantasy. The psychiatrist recommends that the therapist attempt to approach the patient on a lower plane than the plane of talking. He must be reactivated on a most fundamental level, that of seeing and feeling. A piece of sandpaper and a block of wood are placed in his hand, he may go swimming in the pool, or he may be led to the baseball diamond where other patients are playing. When the glove is placed on his hand and the ball thrown to him he may throw it back. All this takes place without talking. It is an approach on the low sensory level. Occupational therapy has an effective method here which will often serve to get the patient started when all other methods fail. This is well illustrated in the child's world, in which muscular activities have such a high degree of importance. Mary, who leaves her mother talking about a trip to the country for the immediate and valid pleasure of playing in a mud puddle, illustrates the point. Where will you find a boy who is not anxious for the coach's pep talk to be over so that he can get into the game itself?

Another value of occupational therapy to the patient has to do with his interests. Interests may be like barnacles which attach themselves to a boat and impede its normal progress, or they may be like the sails which help it to speed quickly and effectively on its way. Many sick people suffer from the fact that their interests have become attached to inward things; they are so overcome by their difficulties that their interests dry up, become confined and are unable to get out into reality. Psychiatrists explain that in this condition the



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emotions become thrown back on the patient, who grows tense and buttons himself up to exclude outside influences. A form of treatment to help these people must provide for the "externalization of emotions"—in the words of the psychiatrist. The mentally sick man who constantly complains about an imaginary chemical which he fears is drying up his blood directs his feeling life inward to thwart such catastrophe. The therapist finds that he has been an expert swimmer; he is induced to swim again. Day after day such relaxative pleasure provides the setting for the therapeutic attack. His attention is called to his skill, his improvement in physical tolerance, his increasing control over his thoughts as well as his body, and he is naturally affected by such merited commendation. He begins to take pride in his accomplishment, and his feeling life begins to attach itself to the act of swimming. Thus his emotions become externalized. In plain, everyday language, he gets out of himself into the activity and thoughts of others. This is one of the results and goals of modern occupational therapy.

One of the most frequent complaints of patients in mental hospitals is that they are overly restrained. Some feel that they are being punished for a fanciful wrong. Restraint, of course, is necessary in the treatment of certain overactive and antagonistic patients. There are relatively few such cases, however, in the ordinary hospital population, and the others, if given suitable outlets for constructive expression, will respond more favorably to treatment. Occupational therapy contains many activities which will serve to release pent up feelings in wholesome ways. For example, the patient who is confined because of his vicious habit of hitting others may conceivably become so much interested in baseball that he will be more inclined to hit the ball than to hit the person. If the activity is carefully carried out as a therapeutic procedure, the patient will be encouraged to get into the activity of others, to learn to live "with people instead of living against people." This cooperative motif looms large in occupational therapy practice. The destructive patient who is kept inside because of his habit of tearing his clothes may find a social release from such antagonistic ideas in fashioning an artistic vase under the unobtrusive, discerning and encouraging eye of the therapist. Such activities lead to greater freedom of ideas as well as of body and satisfy a deep yearning in the lives of the mentally sick. Occupational therapy ranks high in this field, frequently referred to by the psychiatrists as "the sublimative tendencies of activity."

Finally, occupational therapy provides a modern substitute for powder and pills. This does not mean that the physically and mentally sick do not need such forms of medicine, but it does imply that there are many degrees and stages of illness in which the sedative influence of a quiet game or the engrossing allure of working in a garden may prove to be the best medicine. Especially in the convalescent stages of physical illness, such as the long drawn out days when the patient is waiting for a broken bone to knit, conventional medicine is of little use. The patient needs something to occupy his mind, to give his thoughts exercise so that they will not become morbid and focused on his ailments instead of becoming alive and going out to attach themselves to an ever changing and challenging world. In other words, such occupational therapy activities stimulate the patient to live and revitalize the elements which build the "will to survive." The psychologists call such approaches "psychological medicine," while psychiatrists use the term "psychotherapy." In plain language, the patient reawakens his interest in his physical and personal environment. He is placed in a favorable atmosphere for improvement. The soil is enriched for the seed.

Occupational therapy is coming of age. A new and effective treatment in the alleviation of suffering and in the hastening of recovery is being reborn. New applications in more scientific ways are transforming an old method into a new and vital arm of treatment. It is not a panacea. It has definite limitations; its methods must be further improved before it attains full stature and achieves its greatest potentialities as a helping friend of the physician. But it has Mother Nature behind it and promises to provide a palatable as well as effective dose of modern medicine.

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Your Blood Can Save a Soldier!

(Continued from page 256)

of whole blood stored in iceboxes. Volunteer donors put in a prompt appearance. On Monday, December 8, the mayor of Honolulu issued orders that motorists who violated traffic ordinances should be fined a pint of blood instead of money.

Within an hour of the first Japanese attack, a young pilot was carried into the army hospital. Finding his own plane bombed on the ground, he had tried to help wounded men out of a burning hangar. The inside of his entire right hand and forearm was torn off by an exploding bomb. He had managed, however, to put a rough tourniquet on his own arm before he crumpled. By the time he reached the hospital he was a typical traumatic shock victim, drifting quietly into the coma of death. With a prompt transfusion of plasma, followed by another of whole blood, color began to come back into his face. He began to look like a living person instead of a corpse. In hardly more than ten minutes he opened his eyes and asked for a cigaret.

Three out of every four of the Pearl Harbor attack victims required transfusions. Without plasma—or, since it happened to be available, whole blood—without sulfanilamide to put into wounds and stop infection, a large proportion of them would have died. But of those still living when they reached Tripler General Hospital in Honolulu, *96 out of every hundred were saved.* The other hospitals had almost equally amazing results.

Our soldiers and sailors may be fighting on a dozen fronts, in jungle or desert, on Arctic shores and the seven seas. Some may be far from such hospitals as were available in Hawaii. And even though each of them wears a "dog-tag" to indicate his blood type, and is prepared to give blood instantly to a wounded comrade, whole blood transfusions will usually be out of the question at the scene of battle. Therefore plasma is indispensable.

Another reason why your gift of plasma is a precious one: the wounds in this World War are often caused by high explosive bombs and machine gun bullets that sear and shatter from above. When bombs fall from the sky, they hurl in every direction fragments of whatever they hit. Moreover, at Pearl Harbor 60 per cent of all the wounded were burned. Many of the burns were "flash burns," from explosions so instantaneous that they seared the skin wherever it was exposed, etching outlines of the clothing on the victim. Severe burns particularly require plasma.

In Honolulu, a 7 year old boy was brought to the hospital nearly fourteen hours after his leg, hip and side had been badly burned. His body had already lost so much moisture that his eyes appeared to be sinking into his head. With the amazing vitality of childhood, he had not passed into complete unconsciousness, but he was so near death that without even waiting for plasma he was given an injection of salt solution, just to give his heart something to work on. Then came a plasma transfusion, and then whole blood transfusions, one after another, until his small body had taken on nearly a gallon of liquid. He lived.

Plasma was shipped to the Philippines in October. Army men now wish the amount could have been greater. In addition to its use on land, plasma is needed on every American warship. We must have enough of it to send, ahead of time, to every place where fighting is likely to occur, so as to be able to preserve life when every minute counts.

Before England organized its own blood donation centers, the American Red Cross collected and shipped 17,000 plasma units to Britain. A year ago our government asked the public for a like amount. It was from these first gifts that both the Pearl Harbor and Philippine shipments were made. With the outbreak of war the organization of additional Red Cross donor centers began, so that blood

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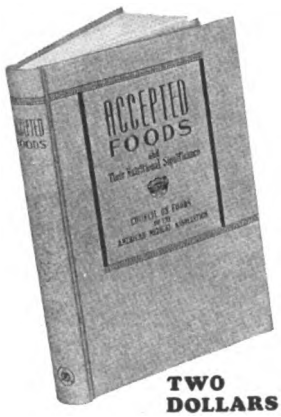
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is now being collected in eighteen cities.

Besides these donation centers, the Red Cross has Mobile Units to accommodate smaller cities and towns. I watched one such Mobile Unit at work in an old courthouse building in New York where a labor union had arranged to furnish blood donors. There were five registered nurses, two drivers, one doctor and a secretary. The cars were an ambulance donated by the Daughters of the American Revolution, and a station wagon donated by employees of R. H. Macy and Co. Equipment included ten cots and ten bridge tables. Working steadily, in five hours the staff had registered, examined and taken blood from Jack Lamiro, Nelda Kostov, Lennie Dieol, and 126 others.

A "unit" of blood can be taken safely from any properly selected donor and is the equivalent of a very handsome cash gift. The price paid to professional donors attached to hospitals runs from $25 to $50 a unit.

Blood is taken by a skilled physician, assisted by trained nurses and supplied with regular hospital equipment. The bleeding itself is done while the donor lies on a hospital cot. It is simple and painless. Aside from registering and examining the donor, the whole process requires only about 15 minutes. Each blood-unit, in its own separate, carefully sterilized bottle, goes at once to a processing laboratory where the plasma is separated from the perishable blood cells, dehydrated, and frozen.

Persons between 21 and 60 who wish to give blood should get in touch with the nearest chapter of the Red Cross, to learn where they may go to make appointments. This can be done only in the cities where blood donor centers are located, or at neighboring Red Cross chapters, because the centers must be as near as possible to the laboratories.

No healthy person need be deterred from this life-saving gift by fears of harmful after-effects. As no two people have exactly the same makeup, there may be slight differences in their individual reactions. But the doctors in the blood donor centers know whom to take and whom to reject. The simple examination and set of questions asked are based on extensive experience and give the doctor what he needs to safeguard the donor. You should follow closely his instructions about the care of your arm, exercise, and diet.

Your body will rapidly replenish the temporary loss of blood. If in these days of emergency you want to fit yourself as soon as possible to give another donation, the system's normal replenishment will be helped by eating plenty of leafy vegetables and fresh fruit. In two months or less, most healthy people will be ready to give their blood again.

Here is a gift which, unlike money, unlike time or even work, is a gift of part of yourself. A gift most literally from your heart, straight to the heart of another—an American soldier or sailor who may live to help save all you count precious in this world because you took one simple, generous step to help save him.

Editor's Note: Studies made on blood donors indicate that some time may be required for the blood to regenerate. The average time required to replace the hemoglobin or red coloring matter that is lost is 49.6 days. Subsequent donations may be given with safety as soon as the hemoglobin or red coloring matter has returned to its original level. If regular studies are not made an interval of three months should elapse between blood donations. Investigations have shown that careful attention to the diet and to the intake of iron will aid the regeneration of the blood.

PREVENTING CONTAMINATION OF STORED PLASMA

By the use of derivatives of sulfanilamide, preferably sodium sulfathiazole, contamination with bacteria, which is known to be the most serious hazard to storing plasma (the fluid portion of the blood) in the fluid state is overcome, Milan Novak, Chicago, reports in *The Journal of the American Medical Association.*

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One Hundred Years of Anesthesia

(Continued from page 286)

scope and percussion into American practice.

After this Dr. Long spent a year and a half in New York where he "walked the hospitals" and became acquainted with such outstanding teachers as Valentine Mott, who according to the English surgeon, Astley Paston Cooper, had done more of the great operations of surgery than any man living, and Willard Parker and Kearney Rogers.

It will be recognized that the young man who settled in the little country town of Jefferson had as fine an education in medicine as the times could afford.

In Philadelphia he probably first became acquainted with the effects of ether. It was one of the regular forms of entertainment at that time for a lecturer on chemistry to hire a hall and give an exhibition. One of the staple features of these shows was the demonstration of the effects of nitrous oxide and other exhilarating drugs. Some of the Georgia medical students boarded with two Quaker maiden ladies at the corner of Nineteenth and Market Streets, and after attending one of these demonstrations, they proceeded to lock themselves in a bedroom and try the effects of ether entirely for "purposes of exhilaration."

Dr. Long was a man of cultured tastes and wide reading. According to his friend, Joseph Jacobs, who published a rare, privately printed pamphlet of "Personal Recollections" (Atlanta, Ga., 1919) he was fond of quoting from Shakespeare and his acquaintance with his favorite novelists, Scott, Dickens, Thackeray and—as a detective story reader, I am glad to say—Wilkie Collins, was often renewed. He also read widely in history, to which I am personally able to testify because among my possessions is a copy of Washington Irving's "Life of Christopher Columbus" with the signature and book mark of C. W. Long on the title page.

Visitors to the pleasant city of Augusta, Ga., will be struck with the statues and commemorative tablets in the parkway center of the pleasant residential avenue. Among these is one to Dr. Paul Fitzsimmons Eve. The inscription on it reminds us vividly of our own troubled times, for Dr. Eve also was touched by the fate of Poland and went to fight with the defenders of the liberty of Poland in 1831. Dr. Eve became one of the leading surgeons of the South and editor of the *Southern Medical and Surgical Journal* in which Dr. Long's first paper was published. Dr. Eve became a great enthusiast for ether anesthesia and stressed Dr. Long's claims to priority, doing much to acquaint surgeons here and abroad with the technic of anesthesia.

When Sherman's armies began their march through Georgia, Dr. Long entrusted all the papers relating to his claims to his daughter, Mrs. Frances Long Taylor. Athens, however, was not in the line of Sherman's march.

There are a number of monuments to Dr. Long. The one in the center of the town of Jefferson was presented by Dr. L. G. Hardman, of Commerce, Ga., whose father and mother were lifelong friends of Dr. Long. It was unveiled at the sixty-first meeting of the Georgia State Medical Society in 1910. The office building where the operation on Mr. Venable was performed still stands, and was marked by a tablet which has become so weathered as to be undecipherable. In 1936 the Works Progress Administration added a bronze tablet above it, repeating the inscription of the original which goes simply, "On this site, etc."

The University of Pennsylvania, on March 30, 1912, unveiled a memorial "To Crawford W. Long. First to use Ether as an Anaesthetic in Surgery, March 30, 1842." In 1921 the University of Georgia unveiled a monument to Dr. Long, the gift of his old friend, Joseph Jacobs, on the campus in front of the Library. In 1926 a monument was unveiled in Danielsville, his birthplace. And in 1926 his statue was unveiled in Statuary Hall, Washington, D. C., the first representative of Georgia in that group.



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Handicapped Children

II. THE SPASTIC CHILD. ***Training the child afflicted with spastic paralysis is discussed for parents in the second article By RUTH E. BECKEY***

"WHAT SHALL I DO?" the anxious mother asks when she finds out for the first time that her child is spastic and will have great difficulty in learning to act as normal children do. Until quite recently, many people had few hopes for a child with a spastic condition; it was one of the crosses that mothers so often have to bear. However, within the last few years, some encouraging work has been accomplished toward the reeducation and rehabilitation of the spastic cripple. Although much improvement is possible for the handicapped child, the mother must have his training begin as early as possible, before the physical and emotional characteristics become too well set.

What is spasticity? Muscles may become drawn, convulsed, or tight. They contract easily as a result of the slightest stimulating effect. Many degrees of severity exist among spastic cripples. The speech of the spastic is often distorted and accompanied by facial contortions in which the eyes may squint or the mouth become twisted. The voice is usually throaty, nasal, tense, dull and without inflectional changes. Difficulties in speech seem to be an outstanding disorder among many of the spastic children, and speech reeducation often gives the child something very constructive on which to begin work.

Due to the injury of certain tissues of the brain, the muscles of the body are without proper control. As a result, the child is not able to coordinate his movements as well as the normal child. His eyes often are uncontrollable, a condition which may handicap his progress in reading. His feet may not be so easily controlled, and he is forced to "shamble along," not knowing when he might topple over. Depending on the part of the brain injured, certain parts of the body may be affected. For instance, only one side of the body may be paralyzed, or both sides, or only the hands, or only the legs.

Since the brain tissues are used to control or inhibit certain activities, the injured tissues cause the spastic to lose some of that control. This loss of inhibitory control affects the emotional balance as well as the motor coordination. If the spastic feels like crying, he may do so, even though a more emotionally controlled person might inhibit that desire. These outbursts of emotion are symptoms of the lack of control due to injured brain cells.

It has been found also that the spastic child is often impaired mentally. About 50 per cent of the children of this handicapped group are retarded intellectually. As in the case of other handicaps, it is not always known whether the child is actually mentally inferior or whether the handicap has made him so. The mental handicap of this group occurs as a result of an injury to the brain and not as an inherited deficiency. The intelligence may be "spotty," that is, the child may be unusually bright at playing checkers but very dull in his language senses.

Injured brain tissue which causes the impairment of the motor organi-

How to Help the Spastic Child

1. Create a comfortable and happy environment for the child . . . let him live outdoors as much as possible.
2. Help the child to become independent by insisting on his performing certain planned duties.
3. Regulate the child's life very definitely, so that he eats, sleeps, rests and takes his retraining lessons at certain hours.
4. Have faith that your child can become independent of you—that he has a place in this world. Develop those capacities which seem strongest.
5. Do not allow your child to compete with normal children or with adults, as overstimulation will cause him to become too tense and will thereby retard the program of reeducation.
6. Maintain daily speech and physical exercises, as repetition counts!
7. Help your child to build character. Try to treat him as a normal person as much as possible.
8. Help him and yourself to face the issue as a reality. Do not dodge the issue by hiding the child from the public or by making excuses for his handicap.
9. A darkened room and soft music will aid you to secure relaxation in your tense child. Try to be quiet and relaxed yourself, as that will help the child to remain calm.
10. Above all, don't plan to cure the child in a few months. It will take years! Begin as early as possible and continue to work patiently until you achieve the results which will be sufficient pay for all your waiting and work.

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zation of the body may be caused by long, difficult labor at the time of the birth of the child. The head is forced through the narrow channel of the birth canal and thus may receive an internal injury resulting in a hemorrhage that destroys some of the vital cells of the brain which control the motor and emotional responses. An injury to the child's head during infancy may also cause damage to the tissues severe enough to induce motor handicaps. Meningitis, encephalitis or other severe infectious diseases also may harm the nervous tissues of the brain.

The chances of recovery or improvement of the spastic condition will depend on the degree and extent of injury to the brain cells. Furthermore, rehabilitation of the child must be begun before the child is too old—preferably before he reaches the age of 5. In order to learn speech and improve motor coordinations, new uninjured areas of the brain must be trained; therefore, the sooner work is begun the better.

Since it is difficult to locate all the spastic children in the country, no definite number can be given. However, it has been estimated that about 70,000 children under 10 years of age suffer from this handicap. Some of the children are in regular day schools, others in private schools, others in institutions, and some are hidden in homes by parents who seem ashamed to show them to the public.

The few surveys which have been made indicate that there is a great need for organizing more efficient care for this group of handicapped children. At the present time, some special classes are conducted in the larger cities for children with spastic conditions. In smaller communities the parent himself is often compelled to do what he can with the child. Inquiry to the local superintendent of schools will reveal what facilities exist for the crippled child.

Before a great deal can be done by the educational director, the medical specialists have to do their work. Moreover, the medical specialists should continue their cooperation with educational directors, since the spastic child needs constant medical supervision. Specialists in surgical technics, sight-saving, physical and occupational therapy also need to cooperate with the speech specialists and psycholo-



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gists in the retraining program of the spastic. Because of the complicated muscle involvement, the speech trainer needs to work closely with the physical therapist. Moreover, the speech defect may be caused by a hearing defect which has also resulted from the brain injury causing the spastic condition. Thus it may be observed that many of the fields for retraining the spastic are overlapping.

At best, improvement of the speech and motor coordination of the spastic is slow and often covers a period of several years. But very definite and worthwhile improvement is possible with training and patience. Although it is possible for a girl or boy as old as 20 years to make unusual progress, younger children can make more rapid improvement.

Possibly one of the most valuable parts of the retraining program, after medical attention has been given, is that of emotional retraining. Due to the injured tissues of the brain, the child has also lost control of his feelings. He is unstable and may frequently submit to his flighty whims. In order to improve this erratic condition, a very definite program should be provided. Regular sleeping, eating, elimination and rest habits should be formed. Study hours should be arranged at certain times when the child is not too tired. Speech training, relaxation periods and physical therapy should all have their parts in the regular program. This program should be followed strictly to help the child attain complete mastery of his emotional life.

Speech training is often a necessary part of the spastic child's routine. This definite procedure is beneficial to the morale, too, as the child feels that he is actually working toward a particular goal which will make it possible for him to talk understandingly. Before beginning successful speech work, however, the child needs to learn general principles of relaxation. From a relaxed position, big muscles are taught to relax first. The foot may be raised and dropped. The child is not to help or resist with any movement of the parts of his body; he is to let the helper do all the work. In this way, he can often acquire the feeling of relaxation.

Later, the speech organs may be relaxed. The tongue and lips need special training. The teacher may open and close the child's jaws several times, up and down and from side to side. If the child can, he is asked to stick his tongue out and in many times—then to move it from side to side. The teacher may press the lips from the sides toward the center, preparing the child for vowel formation. These are a few of the many exercises which may help the child to prepare for his speech lesson.

The process of speech production is necessarily slow. The teacher must begin on the simple sounds. Getting good vowel sounds is a big achievement! Then, possibly, the teacher may introduce such sounds as "ba, ba," "ma, ma," and "wa, wa." The labials, or those sounds formed with lips, are the easiest to make. However, the teacher must introduce speech sounds according to the abilities of the child to make them. Spastic children make surprising improvement under proper speech guidance. To achieve the best results, speech training should begin while the child is young, from 2 to 5 years old. Two lessons every day are preferable to an occasional lesson, as the spastic child needs repetition of correct muscle formations to retrain the uninjured centers of the brain.

Every day should include some gymnastic training, so the child will gain better control of his muscles. If the physical therapist is not available, the mother can do a lot to help the child acquire agility with his injured parts. Starting with slow movements and increasing the speed of these repetitive movements will aid some. The trainer must watch to make certain that he is not working when the child has become tired, as that will defeat his purpose.

Breathing exercises are also helpful. Not over fifteen minutes at a time should be used in these exercises. If the child appears dizzy at any time during the breathing period, the exercise should be stopped, as the dizziness may frighten the child. The teacher should put his hand on the child's stomach and ask him to breathe in slowly—hold the breath—and let it out slowly. This controlled breathing will help the child to attain that muscular control needed in proper breathing.

Dr. Beckey's next article, ~~coming~~ soon, deals with problems of the child who is hard of hearing.—Ed.

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Whooping Cough Joins the Preventables

(Continued from page 267)

pared to many other bacteria and are so minute that an investigator once said, "You must almost look your eyes out when you try to find them."

In 1916, a simple method of isolating the germ was devised at the Danish State Serum Institute by Chievitz and Meyer. With the Bordet-Gengou culture medium on a covered dish, the surface was exposed to the breath of a child with whooping cough at the moment of several deep, hacking coughs. On the third day after incubation, the tiny, glistening colonies made their appearance on the plate—a method which remains in universal use for early diagnosis today. Further studies showed that the germ is disseminated most profusely early in the disease—days or weeks before the typical whooping cough is heard.

Early attempts to produce whooping cough in puppies and cats were misleading; occasionally an animal which had been inoculated would develop a cough, but it was found later that the cough was caused by distemper rather than whooping cough. Successful experiments were completed at the Evanston Hospital Whooping Cough Research Laboratory during the period 1925 to 1927, when whooping cough was developed in a group of baby monkeys. Within two weeks after freshly isolated cultures were inoculated into the nostrils of 39 monkeys, a number of them were coughing severely, especially at night, with gagging and vomiting of mucus. The Bordet-Gengou bacillus was recovered from many of the coughing animals; their blood counts showed the changes typical for whooping cough. Germs recovered from coughing monkeys produced the typical disease in others, and the monkeys were subsequently immune to overwhelming doses of living whooping cough germs. Animals were sacrificed at the height of the disease, and tissues of their respiratory tracts were sectioned with the microtome, then stained and examined under the microscope; the site of the infection was found to be in the finer bronchi of the lungs. Following these animal experiments, more years of study were devoted to the development of the vaccine which was ultimately used in the test with the boys in the Evanston apartment.

An earlier experiment on humans had pointed the way to this successful conclusion. For years, whooping cough had been rampant among the primitive fisher families of the Faroe Islands, often causing a high mortality—even among adults. In 1926, Dr. Madsen of Copenhagen reported the results of his work with several thousand Faroe Island children into whom a whooping cough vaccine had been injected. While this vaccine had failed to prevent the disease, it had resulted in a milder form, with diminished mortality, when given before the epidemic started.

With Madsen's pioneer work as a basis, a more potent vaccine was perfected from freshly isolated germs. When grown on human blood instead of animal blood, the vaccine could be injected in larger doses without any risk. Early experiments with the new vaccine were performed mostly with infants in families where the older brothers and sisters had not had the disease. At first, weekly injections were given in alternate arms for eight successive weeks; later, the injections were given in both arms at the same time for four successive weeks. In recent years, the vaccine has been so improved that only three injections in alternate arms are required to develop immunity.

Unexpected obstacles arose when the Northwestern University Medical School of Chicago first authorized the commercial production of whooping cough vaccine several years ago. Numerous lots of vaccine made in 1934 failed to protect, and it took a year to find the reason —the most effective concentration is now known to be of "intermediate strength"—15,000 million bacilli per cubic centimeter. Moreover, it



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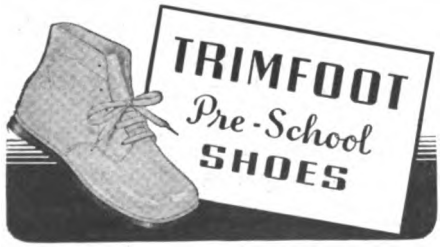
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has been demonstrated—in a study of 1,400 infants at The Cradle in Evanston—that whooping cough develops about seven times as frequently in children who are given the injections before the third month of life as in those whose injections are given after the eighth month; the younger infants apparently failed to develop the power to utilize the vaccine. It was also found that the best and most lasting results were obtained when the vaccine was injected at three week intervals instead of weekly. Many of the infants required three or four months after the last injection before immunity was developed.

Results with the vaccine indicate definitely that whooping cough can be prevented. The importance of this discovery to the public health is apparent in a statement released by the United States Public Health Service during the early years of the Evanston Hospital experiments: "The deaths among little children—those under five years of age—from whooping cough are from 6,000 to 10,000 each year, exceeding those from diphtheria, scarlet fever, measles and tuberculosis." Before 1930, whooping cough was fatal in one out of every 39 afflicted children! Since whooping cough is the most likely of all the contagious diseases to affect the youngest members of the family, the physicians who participated in the studies always recommend the injection of pertussis vaccine before other immunization procedures. "Whooping cough, like smallpox, diphtheria and scarlet fever," they say, "may be prevented if an ample dose of potent vaccine is injected into infants over seven months of age sufficiently long before exposure occurs. Whooping cough immunization is now on a sound basis, and it is recommended that all children be protected against this disease during the first year of life."

This conservative statement of medical results is full of meaning for the parents of children who have escaped the disease—and for those whose babies are not yet born: Medicine has demonstrated that whooping cough can be prevented in most cases, but it's up to the parents to effect its prevention!

Rheumatic Heart Disease

(*Continued from page 271*)

tant environmental factor for or against infection. Lack of sunlight, dampness and overcrowding must be combated at every point. Lack of sunlight is easily overcome except in persistently foggy sections. Sun bathing is a good practice if not indulged in dampness and chilling does not occur. It is more important that children play normally in homes swept with sunshine than that they be exposed directly to sunburn over the whole body.

Dampness brings up many angles, of which housing is an important one. Houses with damp or wet cellars and walls are not proper living quarters. Many cheap suburban properties located near creeks, as well as rows of cheaply constructed city homes, are not conducive to good health. Heating systems now in use tend to dry out excessively many otherwise desirable living quarters—this is just as bad as dampness. An extremely high temperature, far from answering the problem, simply aggravates it. A temperature of seventy degrees Fahrenheit, with a reasonable degree of moisture, makes for comfortable as well as healthy living quarters if the residents are sensibly dressed. All artificially heated rooms should have some moisture in the atmosphere but should never be saturated. Unfortunately, air conditioning as practiced today frequently does not take this into consideration; confidence in engineering, however, permits the hope not only that this adjustment will be adequately made but also that air conditioning systems so perfected will soon be available for homes of all classes.

The universal use of heating systems has played a large part in changing the weight and material of clothing. Once the fashion of lighter and less clothing was adopted, the pendulum swung to the extreme. Children particularly have been made to bear the brunt

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of this obeisance to fashion to such an extent that their health is distinctly jeopardized. In younger children the chest is often well covered, but from the groin to the ankle they are nude. Nature is poorly prepared for this sudden chilling and in spite of the enthusiast's contention that hardening produces good health the real results are lowered resistance, increased metabolism and an increased tax on the heart and heat centers. This occurs at a time when such energy could better be expended on growth.

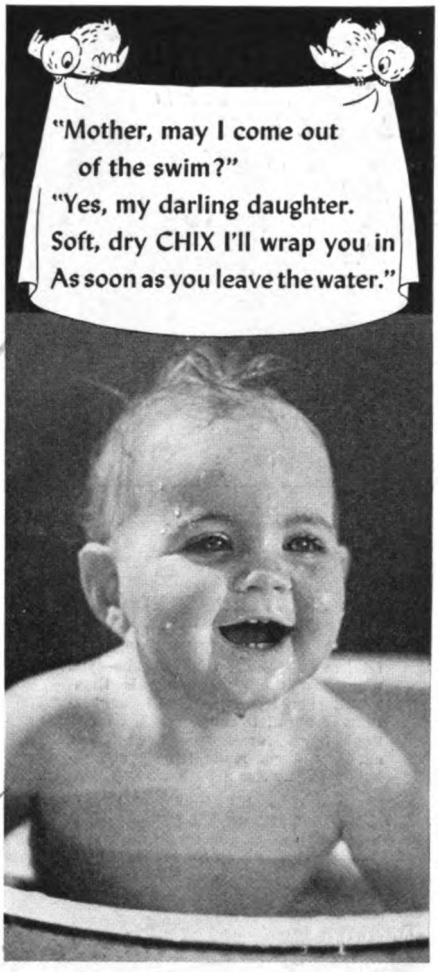
Children's legs should be covered with cotton or lisle stockings. Dresses should be of knee length and trousers of the "knickers" type. For outdoor play in the winter, additional garments should be looser and without inhibition about the hips and shoulders. For example, girls should be dressed either in pantaloon leggings without being stuffed with skirts, or they should wear leggings that come above the knees and warm dresses without the pantaloon. Loose fitting sweaters are better than coats. Boys should wear either corduroy knickers and woolen stockings or long trousers, with sweaters and parkas or lumber jackets substituted for coats, vests and overcoats. Stockings should always cover the knees.

Summer months present problems of dress that are equally important. The popular sun-suit does not protect children sufficiently against the burning heat rays of the sun. They should be provided with a thin covering of white cotton in the form of a loose suit that will cover the shoulders and the body to the knees. When rainy or damp days occur, parents are too prone to permit the children to wear their sun-suits—perhaps to save laundry—and undue exposure occurs. The burning heat ray, if permitted, will of itself cause a definite illness in the child. Exposed more slowly, the child becomes brown, and this in turn prevents to a large extent the beneficial penetration of another ray, the ultra-violet. If direct sun exposure is given in small but increasing doses, a maximum of ultra-violet is obtained before bronzing occurs. Absorption through white clothing of cotton or rayon will occur even in shaded places in sufficient quantity without harm from the heat ray.

Many children who are adequately housed and clothed at home are sent in the summer months to camps or to the seashore. Many camps are located in districts where the nights are cold and damp. Here and at bathing beaches they are permitted to swim or paddle and then romp in damp bathing suits. Playing in stagnant gullies is permitted by parents who regard the children as being out of harm's way. Such gullies are breeding places of disease. These exposures are predisposing causes of rheumatic bouts frequently seen in children on their return to their homes in the autumn. Education is sorely needed to impress on families the necessity for more careful investigation of the qualifications of camp directors and the environment of the camps from a true health standpoint. So great is the responsibility of camp directors in assuming the care of children that they should be made to qualify by rigid examination before they are licensed to open a camp.

There is still an impression that by the removal of the tonsils and adenoids rheumatic infection or recurrences thereof can be prevented. Nothing could be further from the truth. Adequate evidence is available to show that this procedure plays no favorable part in the disease and that the untimely removal of the tonsils and adenoids has undoubtedly done more harm than good.

The early recognition of cases is rather difficult, because there is no one outstanding symptom. It is true that in most cases a competent physician will note a change in the quality of the heart sounds. Small children with frequent colds and sore throats might be sufferers. Nosebleeds sometimes occur. The child who tires easily, loses his appetite, runs a little fever—who is cross, irritable, hyperactive or what is known as "highstrung" or "nervous" deserves careful study for rheumatic infection. Indeed, all children in the above categories should have medical examinations, not once but frequently, until the cause of their condition is definitely established. There are other onsets similar to typhoid fever, and in any of the varieties there may be telltale nodules resembling millet seeds in the skin. In older children, joint pains and swellings very much like



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the adult's are occasionally present. Joint pains and swelling are uncommon in childhood; on the other hand, many suffer with vague muscular pains, commonly known as "growing pains." Not all such pains are rheumatic, but they should never be dismissed as inconsequential until rheumatism is completely removed from the list of possible causes.

In some children grimaces or twitchings of the face and eyes or irregular twitchings of the extremities or even the entire body occur; these are referred to as St. Vitus' dance, or chorea. These children may simply start by "making faces" when excited, then become awkward and drop things or, because of tongue involvement, make mistakes in pronunciation. Many have been punished for being disrespectful, careless and slovenly or for trying to make fun of their environment. Later, the general twitchings begin. At least 50 per cent present other rheumatic evidences, and still more show heart signs at some stage or another. These are just as much rheumatics as those having joint involvement.

In some children, abdominal pain so predominates the picture that other signs are put in the background and appendicitis may be thought of instead of the true condition. All these symptoms emphasize the need for careful and frequent medical checkup if the disease is to be recognized early and heart damage prevented. This is the crucial stage, and if these children are to be saved from the ravages of heart disease, heart crippling, invalidism and economic loss it must be done by recognition and treatment when any or all of these symptoms first present themselves.

Should any or all these symptoms occur it is the duty of the parents to put the child comfortably to bed. The family physician will determine as quickly as practical whether or not the child suffers from a rheumatic infection. In the meantime it is wise to create a healthful environment. Fresh, warm air in a sunny room, bed baths, no excitement and no exertion are the fundamental requisites. The child should not have bathroom privileges and should be taught promptly how to use the bedpan. Should the patient prove to have rheumatic infection, the physician's prescription will be greatly aided if the importance of rest is realized and acted on promptly and completely. It may seem difficult at first to convince the adult that the child can be kept at rest without games, books or radio. Ordinarily the acute symptoms are soon relieved by the physician's treatment.

Now, as far as the future of the child is concerned, a critical situation arises. It is no easy matter to make parents understand that the need for rest still exists despite the fact that the patient appears to be quite himself. Even if the adults are so convinced, they have the problem of compelling rest without being able to make it clear to the child just why he must remain quiet. It seems discouraging at the time, but if rest is insisted on the future is far from gloomy. Infinite patience is needed to carry out weeks of campaigning for recovery.

There are guides to mark the progress of the child's improvement. The temperature and pulse are the most obvious. Freedom from symptoms is important. The physician examines the child regularly for rheumatic nodules and other symptoms. He is also guided by a recently discovered blood test, called the "sedimentation rate," which should return to normal before the child can be considered as being reasonably out of the woods.

In the meantime, the important factor of diet should not be overlooked. Milk, green vegetables, stewed fruit—not simply juices, and cooked cereal with milk instead of cream should be the backbone and mainstay of a liberal diet. Ordinarily the medical treatment will be helped best with the addition of more carbohydrates. For this, potatoes, bread, cornstarch puddings, blanc mange and an occasional lollipop can be given. Fats should be kept in the background, and this includes the fats in chocolate and excessive butter. Meats and eggs may be served but should never be emphasized in any meal.

Rarely before the sixth week and sometimes not before the third or fourth month does the patient answer the requirements of real quiescence to the internal activity of the disease. When all external evidences of the attack are absent, the

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pulse and temperature normal and the sedimentation rate normal, the child is ready for rehabilitation. Massage can now be instituted. It is not necessary to engage a masseur; gentle kneading of the muscles of the extremities with cocabutter is sufficient to stimulate circulation and partly overcome muscular flabbiness.

Next, the patient can be lifted out of bed and permitted a few steps—five or six as a beginning—and then lifted back into bed. If the pulse is taken before and after this excursion and returns to normal within two minutes of the return to bed, the exercise can be increased gradually day after day, with the pulse record as a guide. If the pulse does not return to normal, a few more days of rest should be allowed and the process started all over again. When the patient can walk about the bedroom he may be permitted to get in and out of bed by himself; this is the equivalent of going up and down three to five steps. The exercise can be continued on a stairway, adding several steps each day until the first floor is reached. The rapidity with which the steps are increased should be left to the judgment of the physician, and subsequent activity should be added at his direction; he alone knows the extent of the heart damage and can judge how rapidly it is recovering. It is his judgment and experience, too, that must determine how much exercise this organ should have to develop its muscle tone and reserve. The child must not become an invalid by reason of overcaution any more than by neglecting a weakened heart.

A general guide to the parent is tiredness. When any child becomes tired he needs rest, and certainly this is emphatically true of the child convalescing from rheumatic infection. His rest should be immediate; he should lie down and relax completely. It is not in the nature of a child who has been ill to sit down to rest for a sufficiently long time to recuperate completely from his activity. Rest should be insisted on immediately and not at some later time when it would be more convenient to the child's interest or comfort. Should the child persist in exercise after he has become tired, the results of the effort to make him well may be lost. The reward of rest is a refreshed heart muscle, prepared for further activity. The penalty of fatigue is a spent heart with an irredeemable muscle.

With this precautionary note these children, if they have no relapses, can progress to practically all normal activities. They engage in the sports compatible with their years, with the exception of swimming. These children must follow the laws of hygiene already mapped out for the prevention of rheumatic bouts. It should be self evident that only the physician can pass judgment on the rapidity of increase in activities.

Fortunate is the child whose home environment will permit the complete performance of this program. Hospitalization is necessary for many sufferers. Hospitals for the acutely ill should not be burdened with these patients after the acute symptoms have subsided; a properly managed heart hospital or convalescent home will be equipped to take care of these children until they are completely quiescent. Here they are started on their graduated exercises. As soon as they are truly ambulatory they can be returned to their family physicians or referred to a properly equipped children's cardiac outpatient clinic. For the most part, public health departments, which should lead in the endeavor, have ignored this duty; the time has come when they should be awakened from their lethargy.

It is apparent that rheumatic infection, while it is ushered in with an acute onset, is essentially a long, drawn out and more or less chronic ailment, similar in these respects to tuberculosis. No one can set an exact date when a patient can be called cured. On the other hand, with prompt care and enduring patience these children and their hearts can be returned to normal, and they can assume their place in competition with their more fortunate contemporaries. That so many have failed to do so in the past is due to a lack of realization of the need for rest in the early stages and painstaking patience in the follow-up management to meet the needs of each individual case. When this lesson has been generally learned, the mortality and morbidity of heart disease in children will drop from first place among the destructive forces in childhood to the level of tuberculosis.

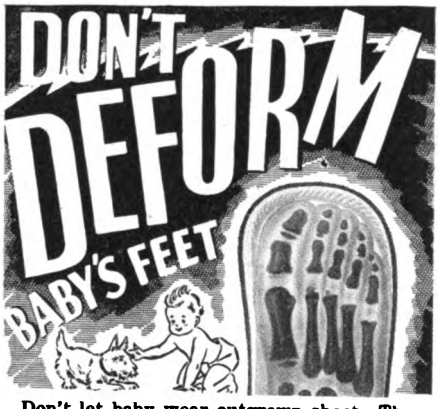
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Seeing Is Believing

(Continued from page 273)

glorified by a combination of light and color.

School children have been asked what they like best and include among their favorites:

"I liked the skeleton best. He was very ugly. I liked the bone faces they had on. The skeleton was very dead looking."

"I enjoyed that woman's head with the five different kinds of teeth. I liked it more when it changed teeth."

"I liked the skeleton, the hands of the doctors, where you test your eyes, your ears and breath, and how much blood you have to have."

By way of contrast, certain displays deliberately feature detailed results of neglect. An exhibit in the "Hand Room" portrays an infected cut so vividly that visitors have exclaimed: "That looks so real, it hurts."

In another room, "Man's Head," our brain, nervous system and five senses are featured. Inner details of a large ear are magnified to show how we balance as well as hear through our ears. Visitors find out for themselves how far and how fast they can see, how we taste with the tongue, smell through the nose, and how the nose works as an artificial air conditioning unit—warming, cleaning and moistening the air we breathe.

The "House of Safe Maternity" is an example of a room featuring a special subject. Correct mother and child care are suggested, and embryonic development and growth are traced through actual specimens. Junior high school students, girl scouts, and expectant fathers and mothers come to see the real "facts of life." In the room on "Defense," visitors measure eyesight, weight and height, test respiration and compare their records with army requirements posted nearby. Death and birth statistics are recorded on a large ledger in the "Cleveland Room" under the legend, "Human Bookkeeping." Amounts of money spent by typical Cleveland families for lodging, food, recreation and other items are flashed on a huge dollar. "Progress in Medicine" is a series of illuminated miniatures including early instruments to diagnose cancer, a modern operating room, a barber-surgeon of medieval times, and exhibits of diseased and healthy lungs. The "Dental Room," through use of colored transparencies and moving exhibits, traces dental history, shows the progression and suggests methods for the avoidance of dental decay.

Loan exhibits are much in demand by voluntary health agencies and by public and private schools in Cleveland and the suburbs. As one of the functions of the Museum is to advance knowledge as well as disseminate it, it has participated in scientific exhibits such as those of the American Medical Association, the American Dental Association, American Public Health Association, the Association for Military Surgeons and the Ohio Valley Conference of Coordination and Defense. Exhibits at several county and state fairs have done much to focus rural interest on the institution. At one fair about 7,500 people tested their lung capacity and "blowing power" on the Museum's "Vitalometer."

Rotating and seasonal exhibits constantly furnish something new. Typical rotating exhibits have been those on "Teeth of the Quintuplets," "Pneumonia" and "Every Town Has Its Quack Racket" (venereal disease). Seasonal exhibits such as that on "Health in the Summer," covering phases of allergy and hay fever, and the cancer exhibit displayed during National Cancer Week add timeliness to educational activities.

In addition to exhibits, the Museum lends demonstration material such as lantern slides, sound and silent motion pictures to business clubs, fraternities, medical and parent teacher classes. Such material includes films on "Man and His Health" and "Moving X-ray," and slides on "Health in the Making" and "A Trip Through the Health Museum."

The daily pollen count during the summer months started in 1940 and was continued this year by popular request. Designed to inform hay fever sufferers, the count was made with the cooperation of the Bacteriology Department of Western Reserve University. Figures were released from early August through September to newspapers and radio stations. Clevelanders went so far as to postpone trips to other cities when their pollen counts were known to be higher. One woman wrote that she would not leave her air-conditioned room during the ragweed season unless the Museum count showed it was safe to go outdoors.

Expectant mothers' classes held in the Museum are increasingly popular. Conducted on a weekly basis last season, they are now held semi-weekly. Proper care of the mother during pregnancy and care of the infant are presented by trained members of the Child Health Association. Museum models show all phases of the development of the embryo. The dozen card tables set up in the lecture hall are not for playing bridge, but for the future mother to use in learning and practicing how to make dainty togs for tiny tots.

To aid Clevelanders in obtaining specific health information, the Museum in cooperation with the Bureau of Health Education of the American Medical Association conducts a question and answer box. Results prove that even nowadays too few people visit or talk to doctors, largely because of embarrassment or fear. To date, over 2,000 questions have been answered by the American Medical Association. Questions on skin diseases head the list. A typical one concerns appearance. "What would cause rough, broken out skin on the face of a single girl 26 years old?" Questions on nutrition, including foods, diet, vitamins and what to do about overweight and underweight are not far behind. Questions on cancer and tuberculosis headed the group on specific diseases, which also included cholera, diphtheria, leprosy, colds, measles and infantile paralysis. Others concern sex education, venereal diseases, maternal health, diseases of the nervous system, insanity, eyes, ears, nose and throat. Occasionally questions contain conscious or unconscious humor. "If a man is crosseyed on

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both eyes; has bad teeth, and smokes like a railroad engine, would he be taken into the Army through the draft?" And also: "What is Hygeia? How can it be cured?"

The fact that the Museum is the first permanent health museum in America open free to the public has attracted wide interest. A series of weekly articles written by doctors and prepared through the cooperation of the Academy of Medicine has appeared on the editorial page of a Cleveland paper under the sponsorship of the Museum. These articles included subjects such as "Aspects of Present Day Surgery," "The Heart," "Safe Maternity" and "What Is Back of Cleveland's Health Record." Since August 1941, "Within the Health Museum," a column devoted exclusively to Museum articles and news notes, has appeared regularly in Sunday issues.

When the $45,000 pitching hand of genial Bob Feller, star pitcher for the Cleveland Indians, was cast in plaster at the Museum, photographs of the event popped up in papers throughout the country, as well as in window displays of news picture syndicates.

As the staff is small, the Women's Auxiliary of the Academy of Medicine has furnished many guides and hostesses. Groups that tour the Museum come from public and private junior and senior high schools in the city and suburbs, hospitals, sororities, cosmetology schools, Boy Scout organizations, welfare and literary associations, citizenship classes, day nurseries and boys clubs—literally from every stratum of society. Despite its widespread activity, the Museum is not subsidized by the city, county, state or federal government, but is maintained entirely by membership and private subscription.

In a year's time, Cleveland Health Museum has grown from infancy—an idea in health education—to a lusty yearling known nationally and commented on as far away as Argentina, Hawaii and South Africa. Functioning as a clearing house to present established and newly discovered medical facts in an accurate but popular style, the Museum is now approaching health education in industry, a natural trend for a fully established institution in an industrial city such as Cleveland.

Alfredo Valente



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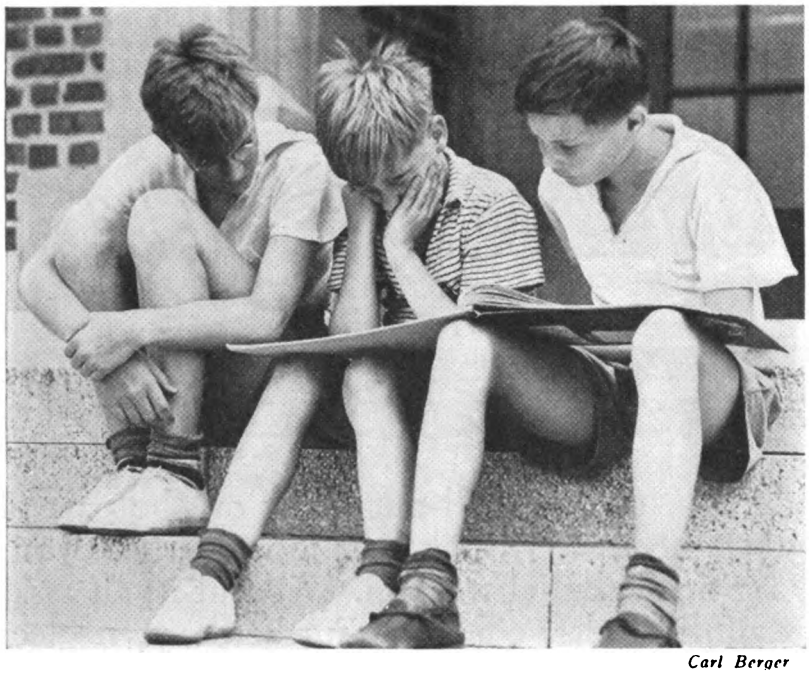
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Carl Berger

PARENT-TEACHER RELATIONSHIPS IN SCHOOL HEALTH

By GEORGE W. WATSON

A FEW DAYS AGO I picked up a textbook entitled "Our Changing Social Order." It was intended primarily for students of senior high school age, and it seemed peculiarly appropriate that an author should take this subject for development, particularly at a time when we find ourselves in a topsy-turvy world with changes occurring almost too rapidly for us to develop new methods. It seemed especially fitting to me that educators should in some way at least try to give our young people tools with which to meet their ever changing problems.

The task of fitting the oncoming generations with appropriate tools is not alone that of the teacher. It must be partially shouldered by parents; in fact it must be a voluntary partnership if it is to be a success. Parent and teacher must have the wholehearted support and respect of each other if the desired result is to be obtained. This applies of course to the whole process of education but is especially true of that most fundamental of all procedures, health teaching. Personally, I cannot conceive of proper health teaching as a classroom routine in which perhaps a hundred minutes a week are consumed in dismal repetition of stodgy rules. I think of health education as a twenty-four hour a day, three hundred and sixty-five day a year performance, wherein mistakes will be made and corrected but where progress can definitely be demonstrated, not so much by the accumulation of rules but by the evident robust character of the learner and his acceptance in good spirit of those few fundamentals on which physical and mental health are built.

We find ourselves living in an age of specialists. Each of us has some definite job which we do at least comparatively better than our neighbor. This applies to our means of obtaining a livelihood. However, nearly all of us have one task in common, that of rearing or helping to rear children. It matters not whether we are parents or teachers, we have a definite task cut out for us, and we will never find ourselves in deeper or more dangerous water than when we begin the health education program. There are few of us who have not had some rather odd training as children, and the mere fact that some highly respected parent or teacher set up certain precepts oftentimes makes us adhere to them even though deep within us we believe them to be wrong or at best ineffectual. We should therefore make every effort to acquaint ourselves with the latest and most acceptable practices before we undertake the training of either our own children or the children of others. We should also firmly resolve that we will thoroughly and open-mindedly examine and study the efforts of either parents or teachers before condemning them. While a portion of any program, examined alone, may seem far from practical, if the entire schedule is examined and tested an entirely different conclusion may be reached. Several years ago, I was approached by a good friend with a small daughter who seemingly took an undue interest in matters pertaining to sex. She was especially interested in the process of reproduction, and while the mother was adequately fitted both by training and by experience in the field of applied genetics efficiently to explain the process to an older child, she found herself at a complete loss when faced with the questions of a 5 year old. After carefully studying the little girl and having a long talk with her, I suggested to the mother that she obtain a few guppies and allow the child to watch them in the bowl. These small fish are peculiar in that their young are born alive without going through the usual egg stage common to the fishes of our lakes and streams. After watch-

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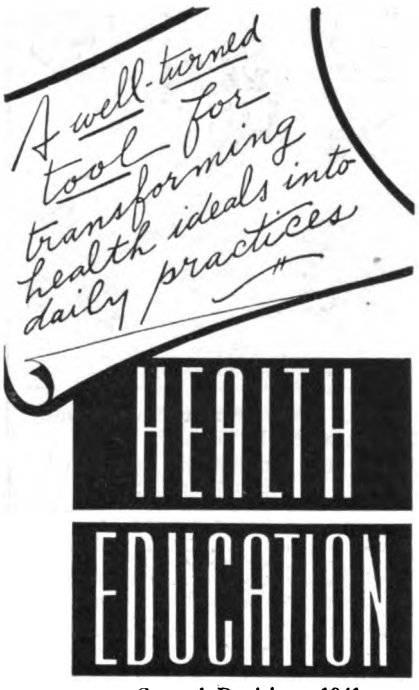
ing these fish and being given a small amount of instruction, the child was ready for the facts concerning human reproduction. Naturally, we held several serious conferences and carefully adjusted our material to the level of this extremely intelligent little girl, but care was taken to make sure that nothing bordering on fairy tale methods was employed and that other and later problems would be brought to us in the trusting manner of this first momentous one. The happy result was that this child, now 11 years old, is normal both as to interests and knowledge; she is confident that she can go to her mother with any baffling problem which may arise, and she is also taking the first step toward future effective parenthood by gaining confidence in herself and her ability to conduct herself with a minimum of uncertainty.

I feel that this example includes certain phases of both physical and mental health education and is a splendid instance of parent-teacher cooperation. Our results could have been practically nil had the parent failed.

I have been asked many times at what age certain phases of the health education program should begin and what part parents should play at these various points. Need for education and assimilative powers vary just as greatly among children as do height, weight, appetite, hair color or any other evident characteristic. While this little girl was ready for rather advanced sex instruction at 5 years of age, I have known other children of just as high a degree of intellectual capability, and even more advanced physically, who evidenced little if any interest until they were perhaps 10 years old. This is also true of their learning of certain gymnastics or games. Of course, certain games are played most often by children of certain ages, but the proficiency shown will vary greatly, and frequently the child of 10 is no better a swimmer or dancer or ball player than his small brother of 5.

It would therefore seem practical that we lay down no hard and fast general rules and expect them to apply to all cases but that we, as parents and teachers, take each case and carefully analyze it, making sure that we do not allow ourselves to be influenced by the fact that the child is ours or that we are especially interested in it. In other words, we must take a thoroughly scientific attitude in order that we shall make no mistakes which might offset our efforts and perhaps result in failure. If we try to make professional athletes of all children we are doomed to certain disappointment, just as surely as we should be if we tried to develop each child into a concert pianist. It simply can't be done, and the sooner we realize that every child —including our own—has certain limits beyond which he cannot pass the happier we are going to be with reasonable proficiency and accomplishment, whether it is in some phase of health and physical education or in some of the purely academic pursuits.

A few years ago, it was called to my attention that a certain school board member in a little town near my home had asked a young athletic director to give special attention to his son in order that the boy might later attain prominence on the school basketball team. While the desire of the father was admirable to the extent that he wished his son to enjoy privileges and experiences which had been denied to him as a boy, he failed to take into account that the child had both a physical and a mental makeup that definitely obviated any possibility of his ever becoming an even mediocre athlete. In fact, the child's limitations in the field of athletics were so marked and evident that the father was unthinkingly wishing a hardship on his son by asking an obligated coach to attempt to train him. Had this father not been so wrapped up in his son's future he would have seen that interclass competition was the limit. He should have encouraged only sufficient training to meet this lesser requirement, and not so much that the boy was overwhelmed with rules and drills to the point of losing self esteem. I have little doubt that this boy's inability to become a prominent athlete in accordance with his family's desire has been a determining factor in his failure to attain reasonable prominence in other school activities in which he exhibited above average ability. Parent-teacher cooperation was definitely needed here. Had any one asked either the parent or the teacher involved whether they were cooper-



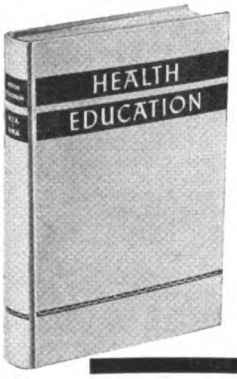
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The Magic Fluid (Diphtheria Antitoxin).—8 characters, with chorus, "king's subjects," etc. Set of 8 copies, 35 cents. Single copies, 10 cents each.

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ating, the answer would most certainly have been "yes." The facts are that a selfish parental motive was influencing a timid and worried employee to the point where he dared not think! This young coach was sufficiently intelligent to realize that the boy didn't stand a chance of becoming an athlete but that if he didn't do the father's bidding he would be hunting a new job the next year. As a matter of fact he was anyhow, since the disappointed board member wasn't satisfied with his son's progress and decided that a new coach might turn the trick!

Not only should we have definite parent-teacher cooperation, but we should have a mutual appreciation of the part played by each in the production of a well rounded youngster. There is a decided difference between duty and true artistry in child rearing. Many of us consider that when a duty is performed, all has been accomplished that can be desired. The Biblical exhortation to "go the second mile" was never more applicable than in the teaching of children, both at home and in school. Teachers are teachers mainly because they love to teach, and parents in the true sense are equally sincere. Both want a finished product that will be a credit to their efforts. Greatest advance is sought in intellectual pursuits, but we have been taught, and rightly, that mental and physical superiority go hand in hand, so we must be on the alert for new methods of health teaching and physical education. We can do this teaching successfully only on a cooperative basis, with both parents and teachers taking a definite part.

It would therefore seem that training in how to be a wise parent is just as important as preparation toward becoming an efficient teacher. No true teacher takes one course and allows that to end his training; neither will the wise parent permit himself to find other pursuits so pressing that he is unable to learn and practice the newer precepts of parenthood. If either relaxes his efforts he will find himself outmoded and ineffectual. We must remember that the children we are teaching have never experienced the world of our own childhood; they know only those things which they have observed during their short span of life. Naturally, they can and will profit by our experiences, but only as we are able to analyze them. Cooperation between parents and teachers is especially desirable here, since each will see a somewhat different side of the child and together they can form a composite picture of his requirements. They can thus determine with a minimum chance of error just what the health needs of the child are. They can decide whether or not an effort toward the development of superior athletic ability is desirable, or whether such effort should be discouraged. They can discuss the dietary situation and recreational tendencies and facilities. The child's interest in books and music and his choice of friends should be studied; thus a united front can be presented that will impress the child and tend to gain the desired effect with a minimum of disciplinary action.

It is not necessary for parents or teacher to be dogmatic in their demands, but they must be united if they are to prevent the tendency of the child to search for a way out. Pleasure is momentary to a child: the green apple gives temporary pleasure, and a ride on the bumper of a moving automobile gives a temporary thrill; there is no thought of the terrible stomach ache or the broken arm or leg. Parents and teachers are not cruel or heartless when they call a halt to these practices. When the child presents his alibi, as he almost invariably will, a statement by Mother that Mr. Brown was absolutely right in correcting Johnny for hooking a ride on the way to school, or mention by Mr. Brown that Mother's ideas on menu arrangement are splendid, will show the intelligent youngster that he can hope for no sympathy from either and should submit to mature judgment.

It may be a little difficult at times to support a teacher when your child is begging with that wishful expression known to most of us, but if we break over we invariably make it harder to refuse the next time. This is especially true in the matter of diet. When parent and teacher agree that a certain policy is best, then it is up to each to support the other. We must take time to become acquainted, not on the battlefield of parent-teacher disagreement concerning a punishment but in the quiet, cooperative atmosphere of a friendly visit.

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BOOKS ON HEALTH

Start Today Your Guide to Physical Fitness

By C. Ward Crampton. Cloth. Price, $1.75. Pp. 224. New York: A. S. Barnes and Company, 1941.

This book is intended for every one concerned with physical fitness. This means the doctor, the gym teacher, the army officer, the soldier, sailor and marine, as well as the man on the street. The exercises described and illustrated are tough, and the author warns that these should not be used until the candidate has been medically certified as being physically sound even though not physically fit in the modern sense.

The book is written in a snappy style that will appeal to many readers, and it is unfortunate that many statements smack of faddism, while at the same time there are warnings against being fooled by faddism. Examples of this are the warning to consume milk "while it is alive," and the classifying of canned foods as dead food—a favorite dodge of the food faddist. For the discriminating reader with sound basic health knowledge, the book will give good advice on various exercises that can be used at home.

P. A. TESCHNER, M.D.

Out of the Test Tube

By Harry N. Holmes. Cloth. Price, $3. Pp. 305. New York: Emerson Books, Inc., 1941.

The repeated editions of this volume indicate that it has made a place for itself in the literature of science for the public. The field of chemistry was first extended to a public audience by the early contributions of Slosson. Since the death of Slosson the contributions of Professor Holmes have done much to keep our public abreast of this field. He has written on the vitamins and is also the author of several textbooks on chemistry. In the present edition there is a section on strategic raw materials. Here for the interested reader is fascinating information concerning new elements and modern products like rayon and nylon. Here also are the new contributions of modern physics to modern chemistry, the story of the cyclotron, of uranium and atom smashing. The illustrations, which are mostly line drawings, seem obsolete for a book as modern as this one.

M. F.

Swimming

By Robert J. H. Kiphuth. Cloth. Price, $1. Illustrated. Pp. 107. New York: A. S. Barnes and Company, 1942.

Addition to the Barnes Dollar Sports Library of new books on swimming, field hockey, ice hockey and soccer brings to mind the previous publications in this series—covering everything from six-man football to bait casting—each written by a well known coach or player whose views are authoritative in his field. Thus Mr. Kiphuth, coach of the spectacularly successful swimming team at Yale University, develops the history of swimming as a competitive sport, lists the physical equipment necessary for the aspiring contender and the mechanical aids which the coach will find helpful in bringing out potential abilities, outlines the fundamentals of various swimming styles and the more elaborate technics of starting, turning, sprinting and other competitive specialties, and concludes with detailed suggestions on training and conditioning swimmers.

Obviously, these books are not intended for the casual reader who

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seeks to brush up on individual sport technics or rules for team play with a view to improving his enjoyment of sport spectacles—though certainly a careful study of the chapters on offense, defense and playmaking in the book on ice hockey by Dartmouth's Eddie Jeremiah would be helpful to the many fans who spend the greater part of their evenings at the Garden, or the Stadium, or wherever, in utter confusion. Rather, these are blueprints for the whole-hog participant or coach who wants to take the game apart and look inside; emphasis throughout is on rudimentary play, but tips to the expert are also present in abundance.

To the young athlete who must try to develop his skills without benefit of individual coaching, these books should be a valuable guide. To the coach who serves a small institution which cannot afford a specialist in every field, and who must therefore supervise play in games for which he has no experience or talent, they should be a godsend.

R. M. CUNNINGHAM, JR.

People Are Important

By Floyd L. Ruch, Gordon N. Mackenzie and Margaret McClean. Cloth. Pp. 283. Price, $1.32. Scott, Foresman and Company: Chicago, 1941.

This attractive volume is not merely a textbook; it is a guidebook of daily living. Part One deals with the individual and his reaction to everyday occurrences. Discussed are topics such as what makes each person different, why we act as we do and how our emotions influence us in all our actions. Part Two deals with the individual and his activities and shows how he can improve his learning. The chapter on "Choosing Your Life Work" will be the most interesting one in the book. Part Three deals with human relationships. At the end of each chapter is a well selected bibliography that should stimulate further reading on each topic. The chart on "job data," showing the earnings of various vocations and their advancement opportunities, is excellent. The parents of high school students will derive pleasure and a great deal of profit from reading the book, as it will help to explain the modern high school student and his problems.

P. A. TESCHNER, M.D.

NOTICE

Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through HYGEIA or the American Medical Association, unless published by this organization. The following list contains the complete addresses where the publishers mentioned in these reviews may be reached:

A. S. Barnes & Company, 67 West 44th Street, New York City.
Emerson Books, Inc., 251 West 19th Street, New York City.
Scott, Foresman and Company, 623 S. Wabash Avenue, Chicago, Illinois.

Laboratory Technicians Wanted

(*Continued from page 262*)

knowledge is required for these positions, this personnel must be specially trained in the operation of medical diagnostic and therapeutic equipment; technicians must be trained to make proper and accurate observations which assist the physician, and they must be able to handle patients to the extent that efficient management of the technical departments requires.

X-RAY AND CLINICAL LABORATORY TECHNICIANS

The greatest demand is for x-ray and clinical laboratory technicians. The x-ray technician must be prepared to follow through completely —from the physician's instructions on the examinations to be taken to the preparation of plates for his observation and judgment. He must know his equipment thoroughly. He must know what positions the patient must assume for each exposure necessary in the examination; he must know also how the injured patient should be handled to prevent aggravation of the injury. The clinical laboratory technician must be able to complete the routine blood counts and urinalyses which the physician may require for most of his patients in addition to many tests that are called for less frequently. In no sense is he

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expected to replace or perform the functions of the pathologist or bacteriologist—rather, he must be trained to prepare specimens for examination by these professional workers, so that their time shall not be wasted in the performance of purely routine duties.

TRAINING COURSES

Persons interested in training themselves to fill positions as medical technicians should seek instruction at recognized and approved schools, since they might find after time and money was spent obtaining a diploma from one of the many commercial courses offered that its content was not such as to qualify them to work with the medical profession. The Council on Medical Education and Hospitals of the American Medical Association has approved 174 schools for the training of clinical laboratory technicians; most of the approved schools are located in and operated under the supervision of large general hospitals, although a few schools on the approved list are operating in public health department laboratories. The approved schools require as a prerequisite for admission either two years of college work, including chemistry and biology, or graduation from a recognized school of nursing—in the latter case, a year of college chemistry is also required.

Most of the courses are of twelve months' duration and include instruction in biochemistry, hematology, bacteriology, parisitology, histology and serology, as well as the fundamentals of record keeping. The curriculums are planned to include lectures and demonstrations, informal discussions, supervised practice to perfect manual technics and oral and written examinations. Schools for x-ray technicians, which follow the same general pattern—with less emphasis on chemistry and biology as prerequisites—are approved by the American Registry of X-ray Technicians; graduates of listed schools are eligible to apply for membership in the Registry—the shortest route to establish qualification for competent trainees.

To meet emergency Army and Navy demands for technicians, thousands of enlisted and drafted men with appropriate educational background are being trained for these positions in Army and Navy hospitals. Civilian schools, however, must be expected to graduate an adequate supply of technicians to replace those already called from civilian to government service. The man or woman who enrolls for such training today is virtually assured of steady and useful employment for years to come, provided, of course, that he or she proves competent to master the technics taught in the schools and give competent performance on the job. A brochure prepared by the Council on Medical Education and Hospitals states that salaries for medical technicians in civilian hospitals range from $75 to $150 a month, with meals and living quarters usually provided.

PHYSICAL AND OCCUPATIONAL THERAPISTS

The Council has also approved a number of schools for the training of physical and occupational therapists. Courses of instruction vary from one to two years in length. Physical therapists are trained to apply the devices and programs which have been developed by the medical profession to treat disease by mechanical means—such as heat, light, manipulation or movement. Occupational therapy comprises the selection and supervision of suitable work programs for sick people, taking into consideration their peculiarities of physical condition, temperament and ability. Civilian opportunities in these important fields are expanding as physicians in increasing numbers look to their hospitals to furnish adequate personnel and equipment facilities to implement their management of disease in all types of therapeutic programs, and as qualified technicians are called into the government services.

Up-to-date lists including descriptions of approved schools and detailed statements of requirements, tuition and curriculum will be published shortly in The Journal of the American Medical Association. Information on registration may also be obtained through inquiry addressed to the following sources:

American Occupational Therapy Association, 175 Fifth Ave., New York City.

American Registry of Physical Therapy Technicians, 30 N. Michigan Ave., Chicago, Ill.

American Registry of X-ray Technicians, Glen Lake Sanitorium, Oak Terrace, Minn.

Board of Registry, American Society of Clinical Pathologists, Ball Memorial Hospital, Muncie, Ind.

Registrar, American Association of Medical Record Librarians, Ross General Hospital, Ross, Calif.

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Medical News

OF THE MONTH

One of the Ways the Japs Fight Wars

Illicit commerce in drugs is an important part of the aggressive policy of the Japanese government, *The Journal of the American Medical Association* declares.

"The role played by the 'superior' race" *The Journal* points out, "in the enslavement of the other races through the use of narcotics is revealed in a statement by the Secretary of the Treasury, Mr. Morgenthau. Commissioner of Narcotics Harry J. Anslinger reported to the secretary that he had abundant proof that Japan had defied international commitments by promoting the opium trade. The Japanese officials had three objectives in their traffic: to gain revenue, to corrupt Western nations and to weaken and enslave the peoples of lands already invaded or marked for invasion. Wherever the Japanese army goes, the drug traffic follows. This illicit commerce in 'white' drugs is more than tolerated by the Japanese government. It constitutes an important part of its aggressive policy."

Study Effect of Boxing on the Heart

Electrocardiograms (graphic tracings of the electric current produced by the contraction of the heart muscle) of 35 boxers between the ages of 16 and 24 years, taken before and after boxing bouts, did not reveal evidence that boxing has any injurious effect on the normal heart in this age group, J. Scott Butterworth and Charles A. Poindexter, New York, report in the *American Heart Journal.* The two men point out that the disease-causing relationship of organic heart disease to nonpenetrating injuries of the chest wall is of considerable present day interest and that although there is no question as to the effect of injury on the heart in animals no comparable electrocardiographic study in man has been reported except in a few cases of accidental injuries.

"Because there are severe chest blows in strenuous bouts of boxing," they say, "it was thought that electrocardiographic study before and after such bouts might indicate evidence of organic damage of the heart."

Their study was made on a group of boys in the annual Golden Gloves Boxing Tournament. They point out, however, that different results might be expected if a similar study were made on a group of older men, as age changes and arteriosclerosis (hardening of the arteries) might be present and act as a predisposing factor to injury. It is usually in these latter age groups that such injury occurs, they point out.

Stock Plates of Vitallium for Skull Defects

The use of stock plates of vitallium to repair defects of the skull appears to be satisfactory, Claude S. Beck, Cleveland, declares in a preliminary report published in *The Journal of the American Medical Association.* He says his report is made because such plates might be useful in the care of war wounded.

Removing Warts on Soles of the Feet

A technic for the destruction of warts on the soles of the feet by means of an electrical cutting current, provided by equipment which they say is found in the offices and clinics of most skin specialists, is reported by Florentine L. Karp and Samuel B. Frank, New York, in the *Archives of Dermatology and Syphilology,* with the recommendation that it be used as routine treatment for the plantar warts. They point out that the patient can continue his vocation from the beginning of treatment without discomfort. "Results from this procedure," they say, "are more nearly ideal than with any other form of treatment, since postoperative discomfort and formation of scar tissue are reduced to the minimum and the technic is simplified."

They have been using it for the past eleven years with complete satisfaction.

A New Way to Determine Obesity

The determination of obesity (excessive fat) in regard to the physical fitness of a person should be measured by means of specific gravity, not by the standard tables which interpret weight in relation to height and age, two groups of authors contend in *The Journal of the American Medical Association.*

A. R. Behnke Jr., Lieutenant Commander, M. C., United States Navy, and B. G. Feen, Lieutenant, M. C., United States Navy, report data which they say "support the concept that the comparatively low specific gravity of fat makes the measurement of the specific gravity of the body mass valid for the estimation of fat content."

In another paper, W. C. Welham, Lieutenant, M. C., United States Navy, and Commander Behnke report investigations showing that a group of heavy but lean men possess a high average value for specific gravity.

An Aid in Management of Some Risks of Hemophiliacs

Dried human plasma (the fluid portion of the blood) was found effective in 5 patients in the management of hemarthroses (hemorrhages into joints), hematuria (discharge of blood into the urine) and tooth extractions in patients with hemophilia, John B. Johnson, Washington, D. C., reports in *The Journal of the American Medical Association.*

The method reported by him involves the rapid drying of frozen plasma in a partial vacuum at low temperature. Just before injection, the dried plasma is dissolved in a physiologic solution of sodium chloride and injected into the vein of the patient with hemophilia. He says that about one hundred injections of such plasma have been given to 5 patients without typing and in only one instance was there any reaction. There was a prompt response to the injections.

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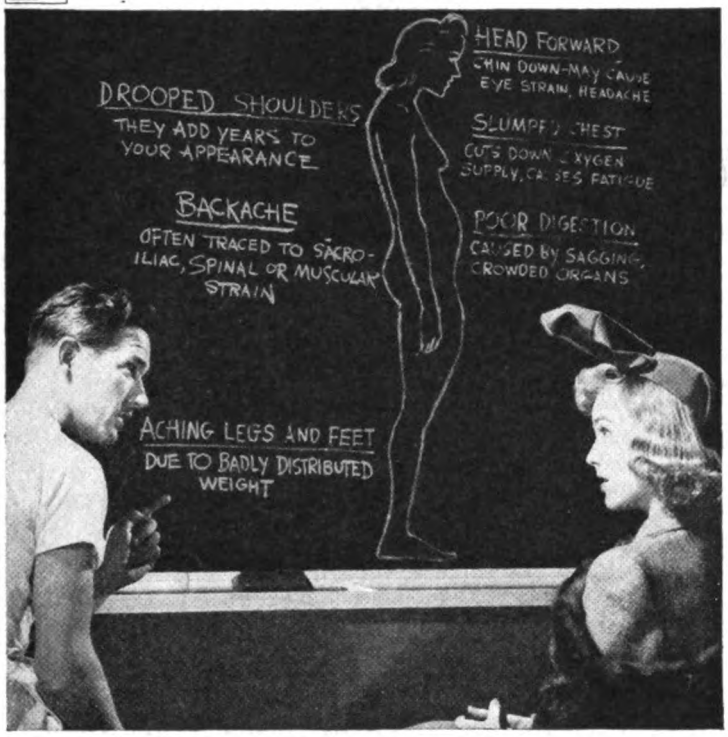


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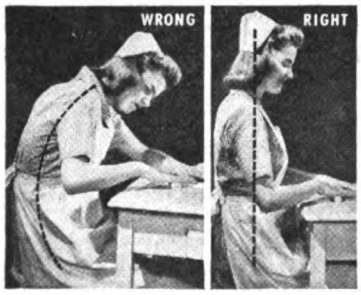
The Health Magazine of the American Medical Association

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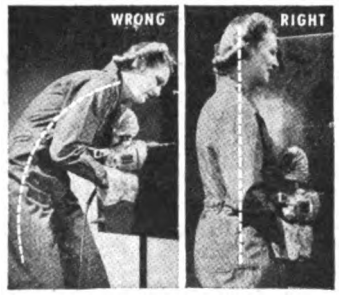
POSTURE: Relative arrangement of the different parts, especially of the body; characteristic or assumed bearing...disposition of things involved; as to put a country into a POSTURE of defense. (WEBSTER)



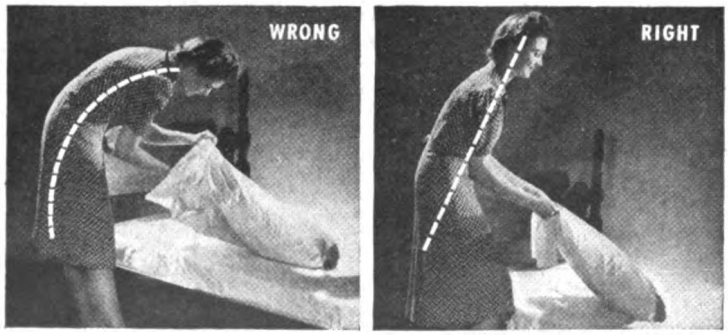
THIS IS WHAT MIGHT HAPPEN if posture is neglected. Almost all the above symptoms cause *fatigue* through internal muscular strain . . . as well as loss of energy, efficiency. When you slump, you crowd the organs of the chest and abdomen downward, invite poor circulation, constipation, muscular strain and numerous other functional disorders—even more serious ills of which your physician is aware. Good posture habits encourage correct body balance, increase the feeling of well-being, give the figure a graceful appearance.



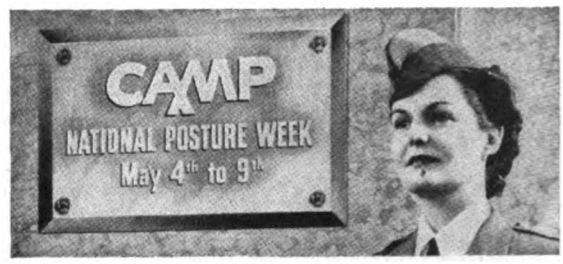
EXTRA HOURS spent in volunteer work can be made less exhausting by sitting straight, with lower back touching chair, shoulders back, chest expanded. It's tiring to slump.



LONG PERIODS of standing are easier to take when body is correctly balanced with shoulders back (but not stiff), chest high, abdomen in, toes ahead.



DAILY TASKS can build-you-up, not wear-you-down, if posture is correct. Make beds with weight on forward foot, knees relaxed, back straight.



...ITS PURPOSE: TO HELP PREPARE WOMEN FOR THEIR NEW ROLE IN WARTIME AMERICA

Today, most women feel it's a patriotic duty to keep fit! For you can't work longer hours, be on your feet more—if you're weak, sick, tired.

Camp National Posture Week—in which schools, colleges and good stores everywhere participate—emphasizes the importance of good posture to health and efficiency. For it is an undeniable fact that you can work *more* with *less* fatigue when you sit and stand correctly. If it's hard to maintain good posture, if you tire easily . . . you may need the help of a Camp Anatomical Support.

For more than 30 years, Camp Supports have been aiding men and women to stand, feel, work better. They're designed to help *correct* figure faults, not just fit over them. They relieve the internal pressure and strain that often lead to fatigue. Give you the "lift" that's so essential to a feeling of well-being.

This is the time to check up on your own posture. If you suspect that something serious is wrong, *consult your physician.* Or, if yours is a case of "simple" faulty posture, visit the Camp-trained fitter at your favorite store *now!*

S. H. CAMP & COMPANY, JACKSON, MICH.

World's largest manufacturers of scientific supports . . . Offices in New York; Chicago; Windsor, Ontario; London, England



CONSULT YOUR PHYSICIAN about abnormalities of posture and weight. He knows what diet and exercise to prescribe for your age and condition.

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BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

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FORECAST

At the end of the second month of pregnancy the entire human embryo is only about one inch in diameter—yet already the embryonic eye is definitely outlined and well on its way toward becoming a complete visual organ, serving one of the most important functions of human life. . . .

The prenatal development and anatomy of the human eye are discussed in simple, clearly understandable terms in the second of a series of articles on vision by John Oliver McReynolds, M.D., appearing in HYGEIA for June.

Prodded by fear, millions of Americans are scrubbing their teeth or rinsing their mouths out with antiseptic solutions in a frantic effort to protect themselves from the social isolation, failure and unhappiness attributed to bad breath. Worse yet, many are dosing themselves with harmful laxatives on the strength of the dangerous half truth that the intestines are the source of halitosis and that common intestinal disorders, such as constipation, may be responsible.

Recently reported medical investigations revealing the nature and source of true halitosis are reviewed in an article by Robert Maris, to be published in an early issue of HYGEIA.

At the end of the first year of World War I, the British Army found that of every 100 pilots that had been killed, two died as the result of enemy action, eight from defective equipment and ninety from physical defects in the pilots themselves! A thoroughgoing revision of physical standards resulted, and these standards have been continually improved in more recent years. The rigid schedules maintained for the physical conditioning of United States flyers today are described by James E. Pixlee and E. K. Gubin in a timely, interesting HYGEIA *article.*

Some time in every one's life, usually several times, a change occurs in the way he looks, feels and acts so that the first thought of all concerned is: "Get a doctor!" He will entrust the doctor he calls with the responsibility of restoring his health—possibly saving his life. The question then is: "How can I select a good doctor?" The standards by which a physician can be measured are furnished by the medical profession—the way to judge a doctor is the way doctors judge each other.

What these standards are and how they may be applied are explained for HYGEIA readers by Greer Williams in "How to Choose a Doctor." Coming soon.

HYGEIA

THE HEALTH MAGAZINE

535 N. DEARBORN ST., CHICAGO, ILL.

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What can a man believe in?

To THE COMMUTER on a New York ferryboat it may be a landmark that one passes with head buried in newspaper . . .

To generations of school children it represents a steep climb with a wonderful view at the top . . .

To thousands of returning travelers it symbolizes "home."

What does the Statue of Liberty really mean?

If you want the true answer, go down to The Battery at the foot of Manhattan, overlooking New York harbor. Mingle with the crowd. Pick out a newcomer to these shores—preferably a wife and mother. Ask her your question.

Never mind if she speaks broken English. Watch her eyes for your answer. You will find it there—in her memory of the past and her hopes for the future. It is an answer you can believe in. It is America.



Every Squibb product—whether made especially for prescription by the medical profession or for proper everyday use in the home—bears an individual control number. It means that each detail in the product's making has been checked against Squibb's high standards and recorded under that number at the Squibb Laboratories. Look for the name and control number when you buy. You can believe in Squibb.

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Manufacturing Chemists to the Medical Profession Since 1858

THE PRICELESS INGREDIENT OF EVERY PRODUCT IS THE HONOR AND INTEGRITY OF ITS MAKER

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"The Adcomber"

looks at Hygeia ads

Believe it or not, ECONOMY WITHOUT SACRIFICE can happen! Here's a tooth cleanser that costs so little . . . goes so far . . . leaves such a clean aftertaste . . . helps restore the natural color of teeth. (You'll find me in most kitchen cupboards—also on page 375.)

—◈—

Getting right down to MEAT and potatoes, here's a chart for your daily meals, based on U. S. Government's Guide to Good Nutrition . . . page 371. And don't overlook the "lesson in nutrition" offer, same page.

. . . "A very present help" in this "time of need," Mrs. Homemaker.

—◈—

Not just "another nursing bra." Modern Mother really meets the difficult requirements of motherhood before and after. Four tailored-to-circumstances styles. Page 380.

—◈—

"Everyone's war" calls for everyone's fitness . . . and fitness means food. . . . Are you fortifying yourself and your family daily with that more wholesome, delicious Enriched White Bread? Note the diet "essentials" it contains—page 367.

—◈—

Personal daintiness never goes out of season. Perspiration and underarm odor never come IN season. Here's a gentle but workable "checkmate" for those terrible teammates. AND a trial offer you ought not overlook . . . page 378.

—◈—

Can your beauty soap pass the Baby Test? Will it keep a brand new, sensitive skin in rose-petal condition? . . . And help it grow lovelier as the years go by? IVORY WILL! That's why it's good for grownup loveliness, too. See what the doctors say, page 329.

—◈—

Time was when every American's health was chiefly his own gain or loss. It's different now—for health losses must be repaired promptly to keep men and women at their jobs . . . Your doctor is the man to help you cut down your losses. SEE HIM EARLY. Page 325.

—◈—

"Mother's helper" indeed is li'l ol' Brer Rabbit Molasses. Saves SUGAR and gives youngsters that important EXTRA IRON. And do they "take it easy"? Just try the recipes on page 360 and see!

THE ADCOMBER

Who's Who IN HYGEIA

WILLIAM C. DANFORTH, M.D., who gives us inside information on impetigo in "Spots on the Baby," page 332, is professor of obstetrics and gynecology at Northwestern University Medical School and chief of this department at the Evanston (Ill.) Hospital. He is president of the American Gynecological Society, past president of the Chicago Gynecological Society and a member of the board of governors of the Institute of Medicine of Chicago. Author of medical books and numerous articles appearing in various professional journals, Dr. Danforth has also written several articles on obstetrics for lay magazines and has recently published a popular book called "A Woman's Health."

Replying to a note asking for biographic data, PHOEBE M. WALTERS writes as follows: "When my daughter Joan, second of five children, was in the fifth grade she was asked to give a biographical sketch of each of her parents. After a lengthy discussion of her father's many accomplishments she turned to those of her mother and said: 'Mother graduated from Wellesley College in 1920. Then she married Father, and she hasn't done a thing since.' I guess that just about covers me!" For the record, Joan's father is Dr. Waltman Walters, a surgeon on the staff of the Mayo Clinic in Rochester, Minn. Mrs. Walters is the author of "Are You Going to Die of Cancer?" on page 352 of this issue of HYGEIA.

BRET RATNER, M.D., is clinical professor of children's diseases at the New York University College of Medicine and a member of the attending staff in the children's divisions of the Bellevue and French hospitals, New York City. Years of experimentation are condensed for HYGEIA readers in "The Story of Allergy," on page 334.

GEORGE M. LOTT, M.D., who presents the first of two child care articles on "Feeding Problems" in this issue (page 384), is director of the newly organized mental hygiene division of the Suffolk County, N. Y., Department of Health. Since he was graduated from the University of Colorado Medical School in 1928, Dr. Lott has held a number of positions in the fields of psychiatry and child guidance, including a term as Fellow at the Institute for Child Guidance in New York City and four years as Rhode Island State Psychiatrist—serving in this capacity as a consultant to the courts, various social work bureaus and state institutions. Under his supervision, the mental hygiene division of the Suffolk County Department of Health is working chiefly with youngsters in the formative years in the belief that prevention and early correction of difficulties is the most effective public health approach to problems of mental hygiene.

Married to a newspaperman with a literary bent, DOROTHY HALLER says it was inevitable that she should become a free-lance writer. Her particular interests have been public health, population, vital statistics and—at the moment—the status of women workers in war industries. Thus "The Nurse in Industry," on page 340. Mrs. Haller studied at Barnard College and Columbia University and did research work for the Carnegie Foundation in New York City before moving to Chicago, where she lives now.

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The little black bag that will help win the war

TODAY, in every community, this little black bag assumes a new importance.

It symbolizes a man who goes quietly about his daily task, maintaining the health of the people on the home front.

A new and heavier responsibility than ever before rests upon the physician's shoulders now. For public morale and maximum war production go hand in hand with health.

Every illness that causes layoffs is a saboteur. Every hour lost through sickness slows down the flow of tanks and planes and guns, and everything else we need so quickly and in such vast quantities if we are to win this war.

Nowadays, too, the doctor feels a special responsibility and obligation in helping those not actually engaged in war production—people who are serving their country by putting extra energy into their everyday jobs. Moreover, many of these people have taken on extra duties—wartime tasks that make heavy demands on their strength and stamina.

Like his colleagues now serving with the armed forces, the doctor on the home front is guarding the manpower needed to win the war for America.

But he cannot be expected to do the job singlehanded. There is an obligation that extends to every patriotic American today. That obligation is to do everything you can to keep *well*—to keep fit, for the tasks ahead.

• • •

So don't wait until you are seriously ill before you see your doctor. The sooner you see him, the better your chances for a speedy recovery.

To keep working—
you must keep well—
SEE YOUR DOCTOR

PARKE, DAVIS & COMPANY, DETROIT, MICHIGAN

★ BUY DEFENSE STAMPS AND BONDS ★

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Maybe that maddening tickle . . .

is caused by nothing more nor less than some irritating substance in your cosmetics. Maybe it's *NOT* one of your "usual spring colds." Before you let it bedevil you any longer, better treat yourself to a careful trial of cosmetics blended expressly for allergic persons and—give your sneezes a chance to subside!

Marcelle hypo-allergenic Cosmetics are safe for sensitive skins . . . a wise choice for the allergic. For from these expertly formulated creams and powders, all the irritating allergens and "tickle-starters" known to the makers have been omitted.

Too . . . Marcelle hypo-allergenic Cosmetics are recognized and prescribed by doctors the country over. They'll be a blessing to your skin . . . harmless even if you're allergic . . . and truly lovely in the bargain.

By using the coupon below, you can get a *long* week's supply of five Marcelle hypo-allergenic beauty aids for JUST TEN CENTS: Marcelle hypo-allergenic Cleansing Cold Cream, Skin Lubricating Cream, Face Powder, Rouge and Lipstick.

"Humbly suggest" you get that dime off right now . . . Wouldn't it be wonderful to see those sneezes "gone with the" spring breezes?

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Blonde.... Brunette.... Auburn....

NAME.....H-5-42

ADDRESS.....

LETTERS FROM *Readers*

First Aid Quiz

To the Editor:

Just received March issue containing questions and answers regarding first aid treatment and care. I think the article is very timely and will be of interest to your readers.

LUCILLE GREENFIELD
Columbus, O.

To the Editor:

The first aid quiz is timely and helpful . . . readable and understandable. I shall recommend it to my friends as worth while and practical.

W. C. IKENBERRY
Roanoke, Va.

To the Editor:

We are Red Cross First Aid Instructors and found your article and first aid quiz very interesting . . . in fact, we would like to have your permission to use it as a written quiz in class.

COLTON AND YERZLEY
Newark, N. J.

To the Editor:

. . . article on first aid is tops! Hope you will have many more on this subject—grand tests for my first aid classes!

MAY FLEMING, R.N.
Winchester, Mass.

Dividend

To the Editor:

I presume that in the regular course of your publication you seldom learn of the good you do mankind. In our home we have such cause to be grateful for the information given in HYGEIA that I am prompted to write you.

A few weeks ago I sent you a check for a subscription. The first issue we received contained an article on glaucoma. Through the information contained in this article Mrs. Gander hurried to a specialist who operated, relieving the pressure in the eye, and the sight was saved . . . I want you to know that we appreciate more than words can tell the dividends we received on the little investment in HYGEIA.

FRANK GANDER
Sparta, Wis.

Photographer's Angle

To the Editor:

In the picture of a child being given a Schick test on page 171 of the March issue, the technic is entirely wrong as the needle should be injected almost parallel to the skin and this is being given at right angles as one would a dose of toxoid or any other hypodermic.

PAUL C. CARSON, M.D.
Wichita, Kan.

Photographers do peculiar things.—ED.

Compulsory Vaccination

To the Editor:

The article "Protect Against Smallpox" by David Dietz (March HYGEIA) says that vaccination in New Jersey is compulsory. Vaccination in New Jersey is not compulsory but is advisable. . . .

ETHELBERT W. SMITH
Belvidere, N. J.

Actually, the New Jersey law provides that local Boards of Education may make vaccination compulsory for school attendance. Thus in many communities effective compulsory vaccination for children exists.—ED.

Brother in Brazil

To the Editor:

We are much indebted to you for the privilege given to the periodical "Pais e Filhos" to quote or translate from your magazine. It is a real

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Visibility Limited . . .

Every schoolboy knows that you can't fly very high when the airport weatherman reports "Visibility Limited." Nobody expects you to . . . because it's dangerous to fly when you can't see.

But few children ever suspect that their own vision is limited . . . that the reason they may have poor marks in school or feel "out of it" at play is that they cannot see clearly. They *think* their eyesight is normal because they have had no experience to guide them, no way of knowing.

Don't take chances on your child's eyesight. Learn the truth by having his eyes examined! Make such examinations a regular part of his health routine . . . for only through competent examination can you be sure you are giving him the priceless advantage of normal vision.

And that is one of the most important things you can do to help him be successful in school and in later life!

WHAT ARE SOFT-LITE LENSES

Soft-Lite Lenses are scientifically designed to control the amount of light which reaches the eye, without altering color or visual sharpness. They neutralize glare, absorb excess light, protect eyes against eye-strain and fatigue. Soft-Lite Lenses are flesh-toned and are ground to individual prescriptions. They are prescribed for children as well as adults.

There is only one Soft-Lite—identified by this certificate.



Soft-Lite Lenses

MADE BY BAUSCH & LOMB SOLELY FOR THE SOFT-LITE LENS COMPANY, SQUIBB BUILDING, NEW YORK

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nail polish contains Chrystallyne

What causes the exceptional brilliance, the luster and *life* of Dura-Gloss nail polish? A special resin-ingredient—Chrystallyne! It is this wonder-ingredient that gives Dura-Gloss its shimmering highlights, makes it *stay on* amazingly. For nails that sparkle like jewels, start wearing Dura-Gloss nail polish today!

FREE BOOKLET
"Your Fingernails and their Care"
Explains why nails split, become brittle, have white spots. Complete with charts showing how to file fingernails to suit each type hand, how to key nail polish shades to your clothes. Pictures each step in the manicure plus detailed instructions. Send for this booklet *now*. Write Dept. H5, Lorr Laboratories, 200 Godwin Avenue, Paterson, N. J.

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for the most beautiful fingernails in the world
10¢ PLUS TAX
NEW COLORS FOR NOW! Blackberry, Mulberry Wineberry


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Founded by E. T. Reynolds

fortune to count on excellent material like yours.

We believe that our magazine, whose first issue was out on March 1, may be of real help to the country, contributing toward standards of family life.

THOMAZ S. NEWLANDS NETO
Rio de Janeiro, Brazil

Hospitalization Insurance

To the Editor:

We thought so much of the article "Hospitalization Insurance" by C. E. Nyberg (March HYGEIA) that we recommended it to our readers in our "Worth Reading" column.

HAROLD R. COLBERT
Life Insurance Selling
St. Louis, Mo.

Misleading Legend

To the Editor:

Your legend for the picture at the bottom of page 180 in the March issue is misleading: hospitals are *not* "control centers for the entire community." The legend should have read: "Coordination of disaster activities in the hospital will be centered in this group. . . ."

JAMES A. HAMILTON
New Haven Hospital
New Haven, Conn.

Aid to the Aides

To the Editor:

I have just started instruction under the American Red Cross to teach a Nurses' Aide course at the local hospital.

The class has been asked to subscribe to HYGEIA. I find it very useful as a classroom tool and excellent for reference material for mixed groups. Although I am a comparatively new subscriber I enjoy the articles and at the present time am arranging a filing system according to subject matter for all the articles I have cut out and segregated.

MRS. MELVA SMITH SURMANN
Bound Brook, N. J.

Hygeia Goes to College

To the Editor:

I am ordering subscriptions for HYGEIA away beyond those called for by the size of our Hygiene Class.

What do we do with the other HYGEIAS? With the definite conviction that this is the most reliable source of health information, edited in scholarly but humanly interesting and understandable form, we make it available in the library, in waiting rooms, lounges, etc. Now I am thinking of putting copies in student dormitories, club houses and even in the downtown hotel and barber shops.

E. K. BRYANT
Muskingum College
New Concord, Ohio

For Future Use

To the Editor:

When I graduated from high school last February, I received as a gift a subscription to HYGEIA. I find this the most interesting magazine that I have ever read.

I am going to study medical social work at the University of Pittsburgh and am saving each issue for further reference during my course.

LOUISE MELNICK
Pittsburgh, Pa.

Reprints in South Africa

To the Editor:

The reprints from HYGEIA have reached us safely and I wish to thank you for them.

We subscribe to HYGEIA for the Departmental library, but I am particularly glad to have this material in a form which can be passed on to interested people. Not only does it abound in valuable information but it is a useful example of the educational material on foods available to the American public.

MARGUERITE MALHERBE
Department of Public Health
Pretoria, Union of South Africa

"Sold Completely"

To the Editor:

I happened to see a copy of HYGEIA on a table in a beauty shop. I went to every newsstand in town and could not obtain one. It is the best magazine of its kind I ever saw. The March issue of 1942 sold me completely on a year's subscription. Would it be possible to send me the January, February and March issues—to start my subscription in January 1942?

I never saw so much good common sense and information, including advertising and everything, between two covers.

ZINA H. EAGER
Mitchell, S. D.

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"You're going to be a Beauty!"

said Doctor, advising IVORY



1 SO BIG! ME AT 10 MONTHS . . .

wearing a rose-petal complexion, if I *do* say so myself. 'Course, Doctor *insisted* on Ivory for my sensitive skin—and Mommy's, too. He explained how Ivory Soap is *pure* and *gentle*, without any dye or strong perfume that might be irritating.

2 BIGGER YET— 18 MONTHS OLD

Ah me . . . the good times I've had in my Ivory bath! How could they *ever* make a soap any milder, any sudsier than this scrumptious big white floating Ivory cake of mine?



3 PRACTIC'LY GROWN UP—

2½ years next week! And guess what . . . they've actually made a *milder* Ivory (with LOTS more SUDS) for Mommy's complexion and mine! Mommy says our New "Velvet-suds" Ivory gives us *safe* beauty-care. You oughta see her cream New Ivory lather all over her face! And afterwards she looks so pink-and-white! Better be like me and Mommy—give *your* face a velvet sudsing every night!



P. S. In a nation-wide survey, more doctors said they recommended Ivory for both babies and grown-ups than any other toilet soap. And doctors now recommend *New* Ivory—which is even *milder!*

99 44/100% PURE IT FLOATS

TRADEMARK REG. U. S. PAT. OFF. PROCTER & GAMBLE

"Baby-care" is Beauty-care . . . use

New Velvet-suds IVORY

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Fundamental in any program of good health, cleanliness is absolutely essential in the hospital. Physicians, nurses and attendants coming in contact with patients must be scrupulously careful to minimize the possibility of infection through bacteria carried on the person or the clothing. Especial care is needed in the operating room and the nursery, where the "scrubbing up" ritual is performed dozens of times daily.

Those who work in the nation's hospitals will be honored this month in the annual observance of National Hospital Day on May 12. On that day, hospitals throughout the country will hold "open house" for visitors who will make tours of inspection, listen to lectures and watch demonstrations presented by hospital workers in all departments. Improved public understanding of hospitals and their staffs is the objective sought through this annual occasion.

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CLEANLINESS

FUNDAMENTAL among all the hygienic precepts is the encouragement to cleanliness. Precepts for fundamental hygienic procedures, including rest, cleanliness and moderation, go back to ancient times. "Cleanliness of body was ever deemed to proceed from a due reverence to God," says the "Advancement of Learning." "Cleanliness is, indeed, next to Godliness," affirmed John Wesley. Yet modern science has taught us facts about cleanliness which were never known to the people of Biblical days. There is a great difference between the removal of visible dirt and the removal of contagion. Disease is transferred from one person to another by the passage of germs or infectious agents.

Cleanliness is largely a matter of habit. It demands untiring vigilance—the kind of vigilance that must become habitual. These habits include:

1. Frequent use of soap and water baths.

2. The washing of the hands in soap and water after attending to any physiologic need; and also before eating.

3. The keeping of hands and of unclean articles, particularly toilet accessories that may have been used by other persons, away from the mouth, nose, eyes, ears, or other body openings.

4. The avoidance of the common drinking cup or toilet articles, hair brushes or pipes.

5. The avoidance of close contact with persons who are coughing or sneezing and thereby spraying infectious materials from the nose and mouth.

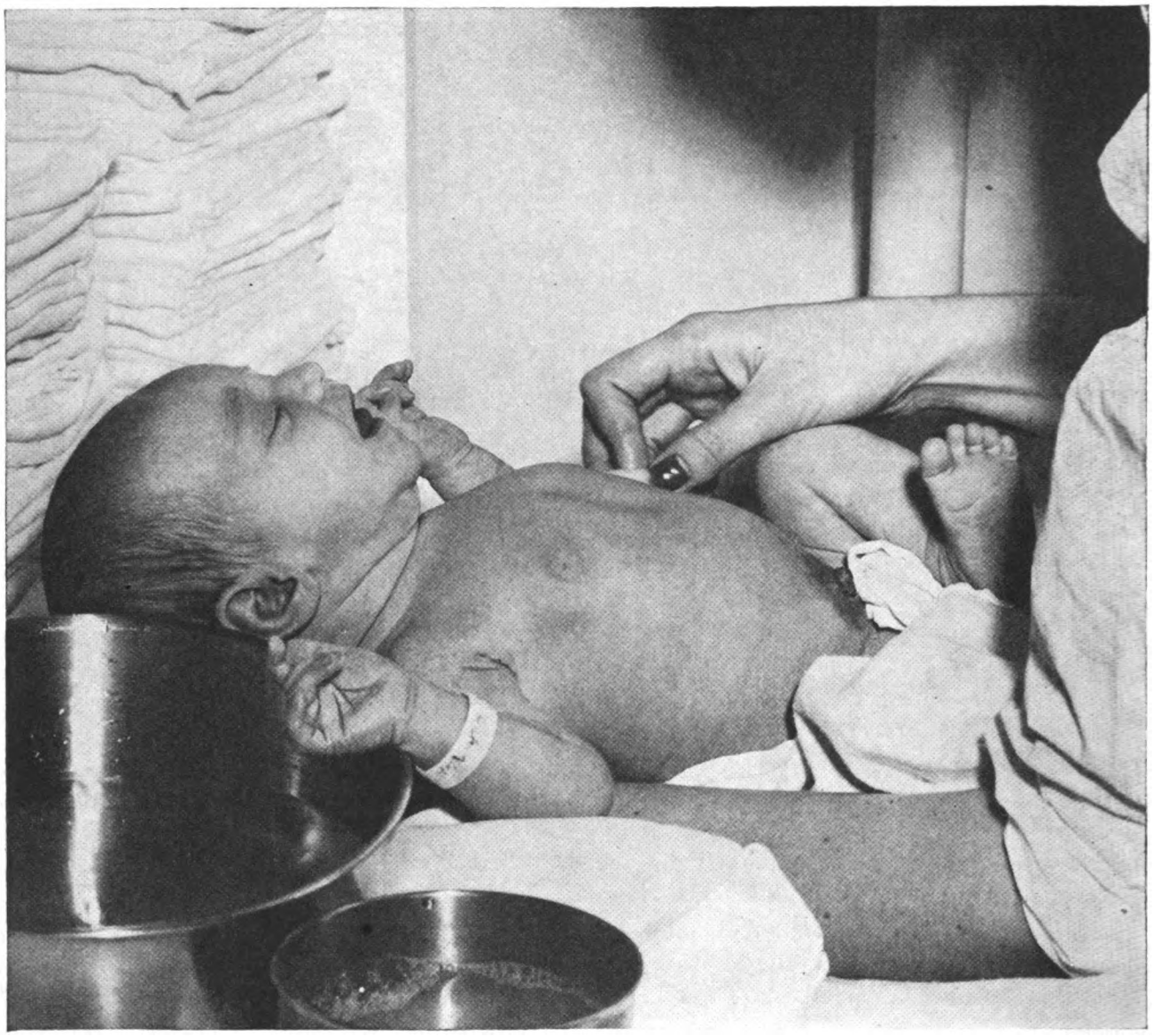
In the development of personal hygiene emphasis on soap and water is essential. Water is the greatest cleansing agent known to man. The advantage of soap is its ability to dissolve a material that has to be dissolved in order to be removed. Soap also may contain enough alkaline materials to destroy germs.

Cleanliness involves not only personal cleanliness of the human body but also cleanliness of the environment. When dishes are washed by the use of machines which require boiling water and the use of thick soap solutions, the control of this source of contamination is definite.

The towel is another accessory to modern life. Nowadays we know the danger of the roller towel or the towel that is used by all the members of the household. Experiments actually made with towels indicate that a hot towel will remove vast numbers of germs from the skin and that a Turkish towel will remove three times as many as a huck towel. Repeated use of the same towel for days brings about an accumulation of germs on the towel and indicates that it can be a source of germs as well as a means of removing them.

Cleanliness should not be permitted to become a fetish. It is quite possible to become so conscious of germs and of uncleanliness that concentration on that phase of life and living becomes in itself a source of mental ill health. However, good habits of hygiene taught in youth, including regular washing of the hands and face, complete bathing of the body at frequent intervals and sanitation of the environment are the basis of health, comfort and satisfaction throughout life.

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A DISTINGUISHED GROUP of specialists was being shown through a magnificent new maternity hospital. The host —chief of staff at the hospital and professor of obstetrics and gynecology at the affiliated university's medical school— was in the act of explaining the many innovations in the hospital nursery when one of the visiting obstetricians jokingly asked if they ever expected to have a case of impetigo in such beautifully aseptic surroundings. "My heavens!" the host exclaimed. "We have it now!"

It is widely believed that the presence of impetigo, a disease in which small red spots appear on the baby's body, indicates carelessness on the part of physicians or nurses on the hospital staff. This is not true. Impetigo is caused by a bacterium— the staphylococcus—which is found in the skin and body orifices *all the time!* The surgeon who "scrubs up" before an operation is trying to rid his skin of these staphylococci; he can't wash them all away, but experience shows that infections rarely

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SPOTS on the BABY!

By WILLIAM C. DANFORTH

Care of babies in hospital nurseries is governed by rigid asepsis at all times. When an eruption of impetigo appears—and an occasional case is impossible to prevent—the baby is placed in isolation, and every precaution is taken to prevent these eruptions from spreading

follow operations done in areas free from infection when the operation began.

When an eruption of impetigo appears on a newborn baby it usually comes soon after birth—in fact, many babies are born with the spots already on their bodies! In such instances, staphylococci circulating in the mother's blood have passed through the placenta into the circulation of the baby, attacking the baby's skin before birth. It is known that bacteria can pass through the placenta from the mother's into the baby's circulation, because babies have been born with the rash of measles or smallpox—when the mothers were suffering from those diseases. It has also been known for years that the organism which causes syphilis may pass from the mother to the infant. Thus when staphylococci enter the bloodstream of the baby from that of the mother they are doing what a number of other germs are demonstrably able to do.

Actually, it is impossible for a baby to pass from the interior of the uterus to the outer world without being in contact with bacteria. The birth canal itself always contains a number of different bacteria. Attempts to render the birth canal entirely bacteria-free through use of chemical antiseptics are often dangerous; experience has shown that for the safety of the mother it is wiser to rely on the natural resistance of the mother's organism. Hence the infant is exposed for a time to contact with bacteria—the staphylococcus among others—even during the most normal and smoothly progressing labors. The possibility of infection is always present, and the possibility of impetigo in the baby is as great when birth occurs at home as it is in hospital deliveries. The most elaborately equipped hospital in the world can hardly be expected to prevent women who harbor staphylococci from having babies—or from coming to the hospital to have them! An occasional case of impetigo is bound to occur, no matter what precautions are taken, and this is in no way the fault of the attending physicians, or the fault of the nurses, or the fault of the hospital. Since so many cases of impetigo are acquired from the mother herself, no effective prevention is possible short of stopping the process of reproduction—and this has its disadvantages!

The instant a spot of impetigo is found on the body of a baby in the hospital nursery, the baby is taken away from the other infants and placed in isolation. Since the disease is highly contagious, every precaution is taken to prevent its spread to other infants in the nursery. The fact that an infection may occasionally spread among babies in the hospital nursery is by no *(Continued on page 387)*

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The Story of

By BRET RATNER

WHEN A NORMAL person inhales pollen circulating in the air in the spring, early summer or fall of the year, nothing much happens. But if he is allergic to the pollen he may sneeze, have itchy eyes or develop a profuse watery discharge in his nose and eyes—in other words, he is manifesting the symptoms of hay fever. The tissues of the allergic person's nose and eyes react in a manner which differs from the reaction of normal tissue to contact with the foreign substance which in this instance is pollen. This altered reactivity of certain tissues of the body to contact with foreign substances is called "allergy."

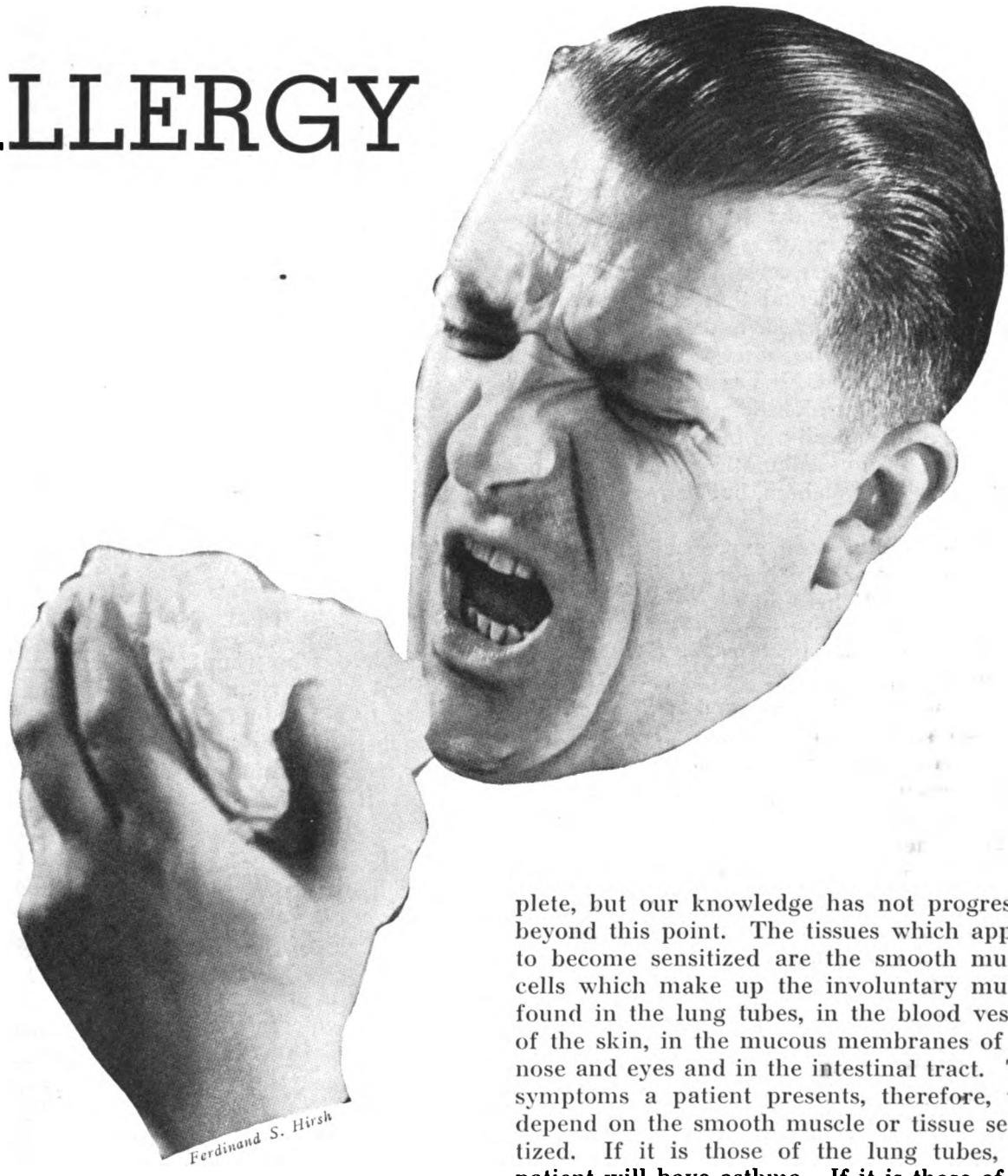
The term was coined by Von Pirquet, the late Viennese pediatrician, whose name you will perhaps more readily associate with the test for tuberculosis, the tuberculin test. The term allergy is derived from two Greek roots, "alos" (altered) and "ergeia" (reaction). At the beginning of the twentieth century, serum, in the form of diphtheria antitoxin, was just beginning to be used. Practically all children who received such antitoxin developed, after a week or so, a condition to which Von Pirquet gave the name "serum krankheit," now known as serum disease. The symptoms presented were hives—technically known as urticaria (swellings under the skin), rise in temperature and certain blood changes. The condition lasted for a few days and in most instances passed off without untoward results. However, Von Pirquet noted that when repeated injections were administered to these same children at subsequent times, some of them also developed asthmatic seizures which came on precipitously within a short interval after the injection. He realized that he was dealing with a new entity; somehow these children were changed by their first injection, and they reacted in an altered manner to subsequent injections.

Because the term which Von Pirquet coined, "allergy," has been popularized, I have cited his work first. But a few years before, in 1902, a French physiologist, Charles Richet, made a remarkable observation. He was experimenting on dogs with an extract of certain sea fauna. He injected the extract into one particular dog whose name, Neptune, has since become famous. Neptune was unaffected by the first injection, and Professor Richet then went off on a holiday. On his return, some sixteen days later, he again inoculated Neptune with the same extract. To his amazement, the dog rapidly went into shock, had a hemorrhage from the bowel, vomited copiously and died within a few minutes. Many animals had been inoculated prior to this, but never before had such a thing happened. He retraced his steps and came to the realization that he had fallen on the discovery of a previously unsuspected biologic phenomenon, namely, that an animal inoculated with an otherwise harmless substance is changed somehow in his reaction to a subsequent injection of this same substance. Richet called this phenomenon anaphylaxis, deriving the term from the Greek "ana" (without) and "phylaxis" (protection). It is the antithesis of prophylaxis.

People who have allergy manifest their symptoms in one or more of several ways. They may have hay fever, which produces symptoms referable to the nose and eyes. They may have asthma, which presents symptoms of suffocation due to a spasm of the muscles surrounding the air tubes or small bronchi. They may have eczema, a chronic skin condition which presents a great variety

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ALLERGY



of lesions, or urticaria, more commonly known as hives. A variety of gastrointestinal disturbances may result from hypersensitiveness —vomiting, mucous colitis, acute colic and symptoms which are sometimes wrongly diagnosed as appendicitis. Even migraine and temporary paralysis and blindness have been attributed to this malady.

It may seem strange that such a wide variety of conditions should be included under the one disease entity, allergy. The explanation is rather simple, perhaps too simple to be complete, but our knowledge has not progressed beyond this point. The tissues which appear to become sensitized are the smooth muscle cells which make up the involuntary muscle found in the lung tubes, in the blood vessels of the skin, in the mucous membranes of the nose and eyes and in the intestinal tract. The symptoms a patient presents, therefore, will depend on the smooth muscle or tissue sensitized. If it is those of the lung tubes, the patient will have asthma. If it is those of the skin, the patient may have eczema or urticaria. If it is those of the mucous membranes of the nose and eyes, hay fever may result. If the vessel to the optic nerve becomes spastic and edema results with pressure on the optic nerve, the patient may be temporarily blinded. Furthermore, a patient may suffer from one or many forms of allergy.

SUSCEPTIBILITY IS INHERITABLE

Is every one subject to such sensitization, or do only certain persons become sensitized? These questions cannot be answered definitely.

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A vast amount of work has been done, but we are still in the realm of speculation. Certain investigators believe that heredity plays a major role. It is granted that human beings possess certain constitutional characteristics which may play a role in the ease with which allergy is acquired, but so far, these characteristics are not known. Children without any family history may develop allergy, and parents suffering from allergy may produce normal offspring. In a certain small percentage of families, it is found that a large number of persons are afflicted, and it is because of such families that the impression is gained that allergy is inherited. It has been granted that while a particular allergic manifestation is not heritable, the capacity to become sensitized is. The child of an asthmatic parent does not necessarily have asthma, but he may have hay fever or eczema.

The belief has been expressed that allergy is acquired in much the same way as infectious diseases. There may be certain constitutional factors which make one person more susceptible than another. There are, moreover, conditions which render tissues more susceptible to the invasion of and sensitization to foreign proteins. It is known that membranes are highly permeable in early infancy; this is a period when the organism is being introduced to all new foods and other environmental substances. Another period of danger is during convalescence from disease. During holiday seasons, when people are prone to overeat and suffer from indigestion, the foundation for future allergic manifestations may be laid.

It has been estimated that about 10 per cent of the population have one or another form of fixed allergy. About 50 per cent suffer from minor allergy, that is, they may find that certain foods or environmental substances cause them discomfort but do not produce the disease conditions generally included under allergy.

With relation to the causative factors, it is generally stated that any protein substance, whether it be of animal or vegetable origin, may cause allergy. Thus inhaled substances, such as pollens or dandruff from animals, may be responsible for hay fever and asthma. Feathers, wool, silk, cotton dust, face powder and many other substances have been indicated as malefactors in allergic manifestations. Any food that one eats may cause allergy, but those most frequently noted are egg, wheat, milk, fish, nuts, berries, chocolate and shell fish. Recently, aspirin, sulfanilamide, quinine and other drugs were shown to be responsible for severe asthma and skin eruptions. Serum and glandular injections have been known to produce all the above symptoms, and, at times, people have died in anaphylaxis as a result of such injections. Finally, substances inside the body, such as bacteria in various foci of infection, are known to be incriminatory.

Allergy may start at any period of life. The majority of patients appear to show some manifestations during childhood. Eczema is the form which is seen earliest, but asthma later becomes the prevailing condition.

How is allergy diagnosed? First, through careful history taking. A person who sneezes in the middle of August year after year is undoubtedly a hay fever sufferer—usually from ragweed. If he sneezes in the spring, the affection may be due to tree pollens, and if it occurs in June, the offender is most likely grasses.

TRIAL AND ERROR

A child who vomits egg frequently, or a patient who gets an attack of asthma when in contact with animals, presents no difficulty in diagnosis. The nature of the offender, however, is often multiple, and at times obscure. Were it not for the protein skin tests, the specific diagnosis would be almost impossible to determine except by prolonged trial and error methods. These tests, it must be remembered, are not infallible and occasionally offer little or no help. A great deal of experience and much detective work is necessary before a condition is properly diagnosed.

Psychogenic factors must be considered in the analysis and diagnosis of allergic cases. One hears of the person who gets an attack of hay fever from smelling an artificial rose, or a violent asthmatic seizure from passing a wooden horse. Such a sequence in an allergic person may often be laid at the door of the "conditioned reflex"—an established neurologic pattern.

The treatment is at times as dramatic as the disease itself, and quite often a child who is sensitaive to a feather pillow or an animal pet will be free of all symptoms through the simple expedient of removing the offending substance. A case in point is that of a boy who suffered from asthma who was found to be sensitive to cotton linters (furniture, pillow and mattress stuffing). When the furniture in his house contain- *(Continued on page 392)*

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Emergency Medical Services in Civilian Defense

THE THOROUGHNESS with which emergency medical services of civilian defense are preparing to furnish prompt and competent care in event of disaster affecting the civilian population is shown in the chart on the following pages.

Such terms as "control center," "medical field unit," "casualty station" and "stretcher team" are familiar to the American public only to the extent that they have appeared in reports of disasters occurring thousands of miles away. The average reader will be surprised to learn that these words today describe specific places, persons and responsibilities right in his own community.

The *control center*, for example, is headquarters for civilian defense activity throughout the community in time of disaster. It serves as a dispatch center for the emergency medical services, directing the personnel of these units to the scenes where their services are needed.

The *medical field units*, organized in general hospitals, are made up of squads consisting of teams of physicians, nurses and trained volunteer workers. Each hospital has at least two such squads, so that one unit may be on call during each twelve hour period of the day.

The *casualty station* occupies a predetermined site, such as the clinic of a hospital, health department or volunteer agency, a health center, school basement or other location that provides shelter, protection and accessibility. The station serves as a center from which medical teams may be sent directly to the scene of disaster as needed, cares for minor casualties to relieve the burden on permanent hospitals and keeps records of all the injured.

First aid posts are set up at temporary locations near the scene of disaster by the medical field units. First aid posts will give temporary care to the severely injured preparatory to their removal to a hospital and direct ambulatory patients and slightly injured stretcher patients—as well as those suffering from nervous shock or hysteria—to the casualty station. A most important function of the first aid post is the classification of the injured to expedite the transfer to hospitals of those whose condition is serious. Requiring competent surgical judgment, this function is essential to best results in terms of lives saved and disabilities prevented.

The *stretcher team* is a group of four or more volunteer workers trained in first aid and stretcher bearing who work under the supervision of the medical field unit bringing the injured from the scene of disaster into the first aid post.

Equipment and working supplies are maintained in hospitals so that casualty stations and first aid posts may be set in operation in the shortest possible time after a disaster affecting the civilian population is reported. While members of the field personnel are called on to perform only duties with which they are thoroughly familiar as physicians, nurses and trained volunteers, field drills are being held as nearly as possible under disaster conditions so that the work of the various units may be well integrated.

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OPERATION OF





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AMBULANCES

MEDICAL TEAMS



③

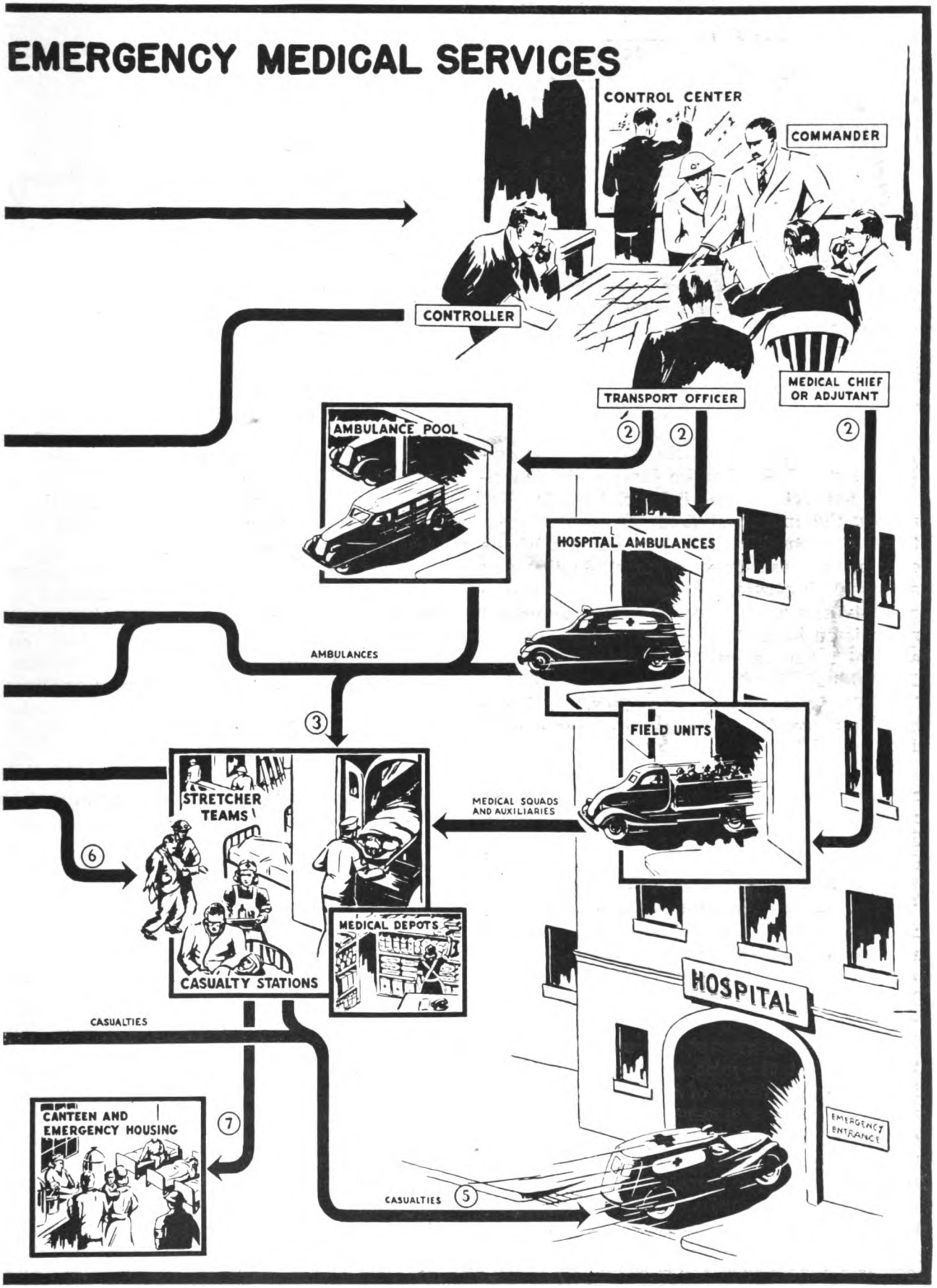
MEDICAL TEAMS AND AUXILIARIES

④

CASUALTIES

1. The WARDEN reports on casualties at the incident.
2. The CONTROL CENTER orders the MEDICAL FIELD UNIT of the hospital to the CASUALTY STATION nearest the incident.
3. The CASUALTY STATION, if close to the incident, serves as FIRST AID POST—otherwise, MEDICAL TEAMS headed by doctors are sent forward to set up advanced FIRST AID POSTS to which ambulances can approach.
4. STRETCHER TEAMS carry the injured to the FIRST AID POST from which they are transported to
5. The CASUALTY RECEIVING HOSPITAL as soon as possible. The slightly injured go to
6. The CASUALTY STATION for temporary care until they can return home or go to temporary shelters. At or near the CASUALTY STATION are
7. A MEDICAL SUPPLY DEPOT and a CANTEEN SERVICE STATION.
8. From the CASUALTY RECEIVING HOSPITAL, the injured can later be evacuated to an EMERGENCY BASE HOSPITAL in a safe rural area.

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By DOROTHY HALLER

The Nurse in Industry

Emphasis on efficiency and safety in wartime production has brought the industrial nurse into prominence as an indispensable agency of management in American industry

CRISP, WHITE UNIFORMS are becoming more and more familiar in American factories and industrial plants. For nurses, the industrial field offers new vocational opportunities, not only because of the current emphasis on wartime production and accompanying safety programs, but because executives are realizing that the industrial nurse is an indispensable link in the chain of efficient management. The widening out of the field of industrial nursing is not just a temporary one "for the emergency." It is the basis of a broader, permanent opening for the nursing profession.

"The industrial nurse is assuming a position of great importance in America's business scene," according to Dr. Malcolm T. MacEachern, associate director of the American College of Surgeons.

"The trend in industrial medicine," he added, "is toward prevention insofar as possible. This trend establishes the industrial nurse in a more firm position than she otherwise would have if her activities were confined to minor first aid and helping the physician treat injuries.

"That remains one of her most important functions, but she also cooperates with the doctor in conservation of health of employees, with the safety engineer in minimizing hazards of the plant and teaching safe practices, and with the industrial relations department in improving employee morale."

Executives are coming more and more to accept industrial nursing as an economical safeguard against losses of time resulting from accidents, illness or minor mishaps.

For nurses, the industrial field offers new opportunities combined with a reliable source of income and favorable working conditions. Salaries are comparatively high, dependent on whether the nurse is engaged primarily for treating injuries and for first aid or whether she is part of a larger industrial relations program. In any case, she usually works an eight hour day, with an hour out for lunch. She takes on the working conditions of a secretary or an office worker, arriving at nine and leaving at five. There is a regularity about her hours which allows her to plan her social life with some certainty.

In addition, there is a professional satisfaction not only in aiding in treatment of factory workers, but in the advocacy of such preventive measures as sanitation, recreation and health education. This latter phase of the work appeals especially to nurses who have special interest in preventive medicine. The nurse is working with well people with a positive plan of improvement in mind. It is a field where initiative and tact are required—initiative to plan and carry through programs successfully and tact to bring administrative officers and labor into cooperation.

Dr. Paul A. Brehm, supervisor of the Industrial Hygiene division of the Wisconsin State Board of Health, said, "One of the great contributions the nurse can make is in selling management the fact that absenteeism can be reduced through a well planned and conducted program." He added that "occasionally the nurse can learn facts about outside influences, home conditions and habits without meddling into personal affairs." *(Continued on page 370)*

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Nurse cleaning a minor cut in the first aid room of the medical department of a large industrial plant. In addition to first aid and other nursing duties, the industrial nurse may be engaged in a wide variety of related activities, such as safety education, hygiene, nutrition and the improvement of working conditions.

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PEARL HARBOR

A Victory for Navy Doctors

By S. R. WINTERS

ONE OF THE most glorious chapters in American medical history was written at Pearl Harbor on December 7. When the wily planes of Nippon dropped their last bomb and winged away over the horizon they left in their wake 960 casualties—in many cases terribly burned and wounded men. How a small group of doctors and volunteer nurses cared for all these casualties in only sixteen hours—at the rate of a man a minute—is a sensational victory for our soldiers who fight disease and repair human bodies.

Unspeakably horrible though the disaster was, its tragedy would have been multiplied and its casualty lists augmented had it not been for the brilliant work of our medical corps on the spot and for the remarkably successful use of the sulfa drugs and blood plasma. These, two of medicine's newest weapons against the casualties of warfare, are responsible for saving many men who even a few months ago would have died from burns, shock or infection.

Although the Medical Corps had no premonition of the Japanese attack, it was prepared. Obviously, the officers had heeded the warnings of war that had come from Washington during late November and had made ready for any eventuality. Not only were there sufficient drugs and medical supplies, but there was a hospital ship at port, and one of the recently conceived mobile hospitals had just arrived and been set up to augment the ordinary hospital facilities at the station. Because of this farsightedness, adequate emergency service could be given to the wounded on December 7.

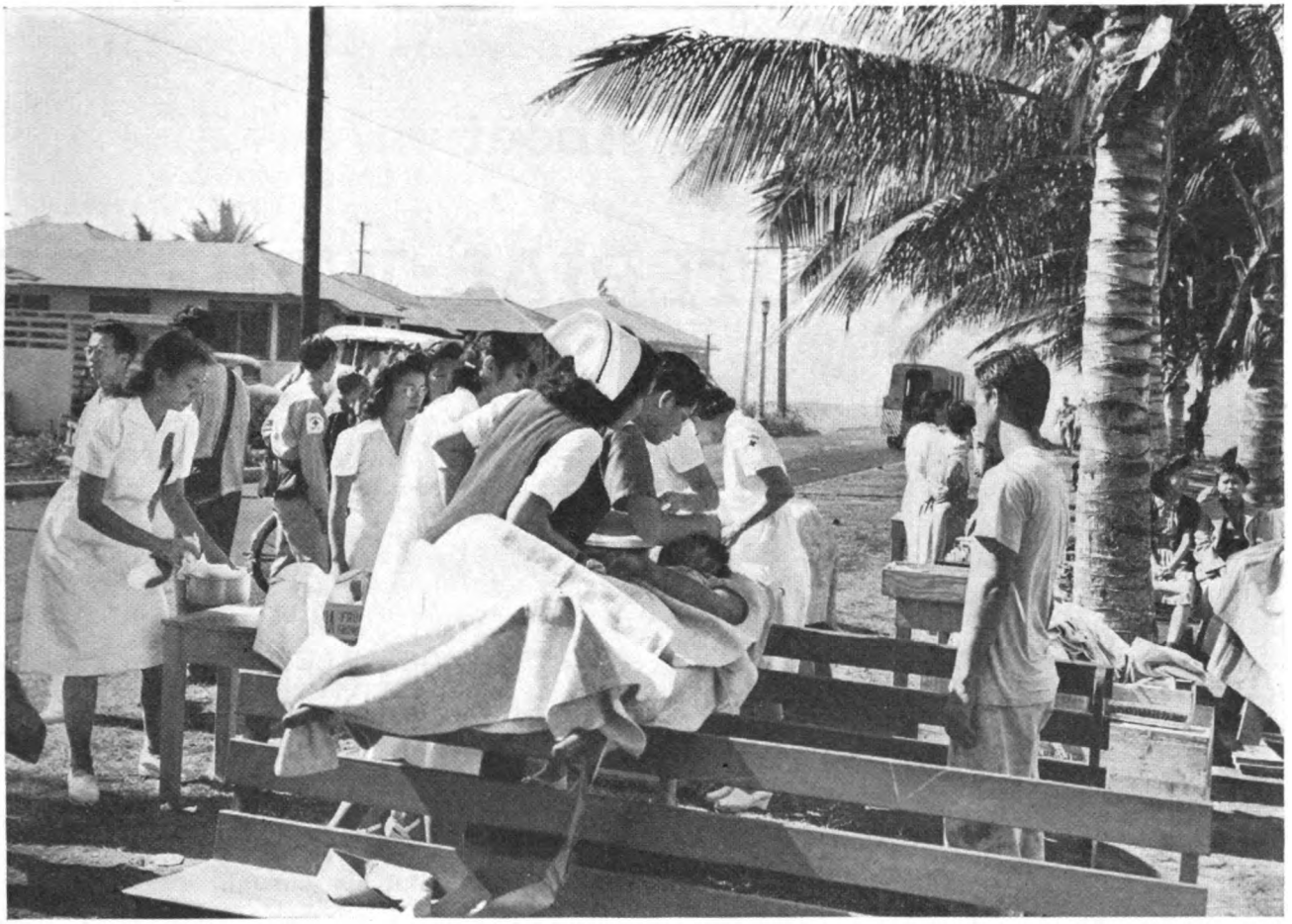
The idea of the naval mobile hospital came into existence a little more than a year ago. Wise planners realized that in the event of major operations of the fleet beyond the continental limits of the United States, extensive hospital facilities would have to be provided to care for the sick and wounded. It was felt that hospitals of 1,000 to 2,000 beds would be cumbersome, both from the standpoint of organization and supply, and could not possibly afford the flexibility of movement which might be desired to meet certain situations. It was therefore decided that the development of mobile hospitals of 500 bed capacity each would best meet the basic requirements.

The mobile hospital at Pearl Harbor, like the others that are being set up at important naval bases, is a self contained unit equipped to care for all types of patients, as in established naval hospitals. The hospital, in addition to the usual medical supplies and equipment furnished, is provided with such facilities as complete commissary and messing equipment, laundry equipment, cold storage equipment, water purification unit, fire fighting equipment, telephone equipment, electric generators for the lighting system and even an incinerator for garbage and portable septic tanks. Housing is provided in the form of tents and portable metal buildings. Tents are used to house personnel, patients, officers and stores. The portable metal buildings are used for operating rooms, x-ray room, surgical ward, dental office, dispensary, laboratory, galleys, mess hall, cold storage and laundry.

The personnel allowance for the naval mobile hospital is sixteen officers (ten medical officers, one dental officer, one civil engineer, three pharmacists and one machinist), and two hundred and forty-one enlisted men (176 hospital corpsmen and sixty-five other ratings including men of the seamen, artificer, special, commissary and messman branches).

The materials of the mobile hospital weigh approximately 600 tons, and the volume is

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Emergency first aid team cares for casualties at Pearl Harbor. Seriously wounded were later transferred to hospitals—including one newly arrived mobile unit—where prompt, efficient care resulted in a great "medical victory" over burns and injury due to high explosives.

about 112,000 cubic feet. The entire hospital can be assembled and erected in a remarkably short time. Take, for example, the case of Mobile Base Hospital Number 1! Procurement of materials began on July 8, 1940, and, with the exception of a few minor items, was completed on Oct. 24, 1940. All materials for the hospital were assembled on Pier 65 in New York City. The U.S.S. Henderson, ordered to transport all personnel and materials for the hospital to Guantanamo Bay, Cuba, completed loading and sailed on Oct. 25, 1940. She arrived at her destination on the morning of Oct. 30, 1940. Unloading began at once and the hospital was ready to receive all but surgical patients on November 13, just four months after the initial work started!

It was principally because of the presence of the mobile hospital that every wounded man could be treated so promptly at Pearl Harbor. The courageous work of the doctors and nurses would have been rendered useless if there had not been complete facilities and enough beds for the casualties. The number of lives saved and the comfort given the wounded at the first mobile hospital under fire has more than proved the value of this type of hospitalization.

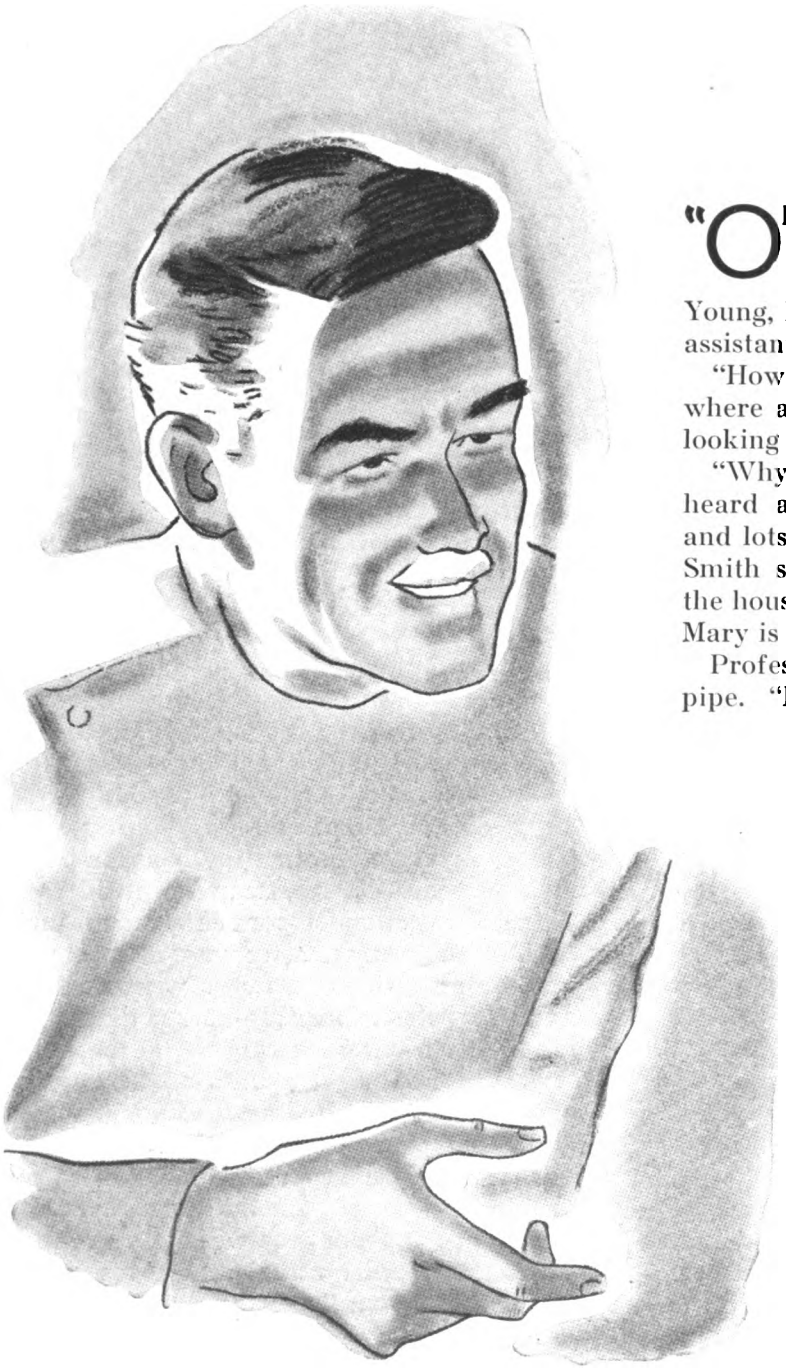
"It was burns, burns and more burns," states the report received from Pearl Harbor by the Navy's Surgeon General, Rear Admiral Ross T. McIntire. More than 60 per cent of the injuries treated by the Navy doctors were due to burns.

The majority of these burns were what are known as "flash burns"—burns that occur when the flesh has been exposed to the source of injury for as short a time as a second or two. The National Research Council doctors who looked over the situation several days after the disaster reported that the burned areas closely followed the outline of the clothing. When the sailor was wearing full length trousers and a shirt with long sleeves he was hardly burned at all. The doctors reported that few men wearing *(Continued on page 358)*

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The Professor Talks About

BACTERIAL WARFARE



By LELAND W. PARR

"OH! DOCTOR LEYLAND, there's typhoid in town! Do you suppose they've begun bacterial warfare?" exclaimed Myra Young, Professor Leyland's able secretary and assistant, as she entered the room.

"How much typhoid is there, Myra, and where are the cases?" asked the laboratorian, looking up from his journal.

"Why, I don't know exactly, Chief, but I heard at lunch just now that there are lots and lots of cases. Everybody is excited. Miss Smith said her landlady is going to shut up the house and take her children to the country. Mary is all worried about getting a new place."

Professor Leyland smiled and took up his pipe. "I think that Mary won't have to move," he said. "I happen to know the true typhoid situation, and it's quite different from what you have just told me. There are two cases of typhoid in town. One is a man who lives in one of those disreputable island houses in the river, and the other is a lady over on the east side who contracted the disease out in the country. This time last year there were four cases, all in one locality. Do you think that gives us a typhoid epidemic now, Myra?"

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"No, I suppose not," admitted Miss Young, "but why are folks talking about it the way they are?"

"That's human nature, I suppose. In January, the Surgeon General told the Conference of Mayors they should be prepared for the possibility of bacterial warfare. So if the public hears of a case of typhoid it thinks the emergency is at hand. It is extremely important for us to realize that untoward events are always with us. We have always had fires, wrecks, explosions and disease. Of course in the emergency we are on guard against incidents of any sort for which the enemy is responsible, but why not leave the determination of their nature to the F.B.I. or the Health Service?"

"Would bacterial warfare be sabotage, Doctor?" asked Myra, as she hung up her hat and coat in the passage between the office and the laboratory.

"As matters now stand, and as we are using the word 'sabotage,' yes. Of course, if the enemy were to approach more closely he might attempt direct bacterial warfare, but I doubt if much of either will occur."

"Don't you believe in bacterial warfare?"

"Not too much. By the way, is there anything we must do this minute?"

"No."

"Well, suppose we talk this matter of bacterial warfare over. You mustn't get taken in again by wild, lunch table tales. Suppose you ask me questions. You know how we often work out problems that are bothering us. I'll try to answer."

"Well, then," began Miss Young, taking the chair by the Professor's desk while he lighted and puffed at his pipe, "Isn't there a possibility of bacterial warfare?"

"Yes, of course, bacterial warfare is quite possible."

"It doesn't seem to worry you much. I should think it would."

"The question of bacterial warfare is not new, Myra. It has been debated and discussed for years but has never figured in any major war operation that I ever heard of."

"But I thought disease and war go together. I'm sure I saw a book in a window downtown called—'Disease and Warfare,' I think it was."

"No doubt you refer to Dr. Major's interesting book in the field of medical history. The title, incidentally, is 'Fatal Partners, War and Disease.' Yes, every war has its disease problems, and some campaigns have perhaps been decided by disease. At different times and places typhoid, dysentery, cholera, typhus, plague and smallpox have been important factors in determining the outcome of a military project. Influenza, pneumonia, measles, scarlet fever, meningitis, malaria and even mumps have also been important, and venereal disease is an ever present factor of disability. But these diseases have *(Continued on page 364)*



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LIGHT RAYS and VISION

The nature of light rays and the seeing apparatus of animals is explained in the first of a series of articles on "Our Eyes and How to Save Them"

By JOHN OLIVER McREYNOLDS

THE EYES ARE one of the most important assets of every human being, old or young, rich or poor, sick or well, ignorant or learned, in solitude or in the midst of the activities of a busy life. We cannot have too much or too accurate a knowledge of these marvelous organs of vision! The preservation of normal eyesight contributes in the highest degree to the maintenance of our existence and to the comfort, pleasure and satisfaction of living.

Light is a force widely distributed throughout the universe. We think of light as a single force in nature, differing in degree of intensity without any change in quality. White light, or sunlight, is not a simple, but a complex thing. It can be broken up into different kinds of rays, each having its own special characteristics. The usual method of breaking up white light into its principal components is by the use of prisms or other forms of refracting material. This can be demonstrated by passing a beam of white light through a prism of glass. The rainbow is produced by the breaking of white sunlight into the seven elementary colors: red, orange, yellow, green, blue, indigo, and violet.

The rainbow is seen when the observer is situated between the sun on one side and falling rain-drops on the other. The sun's rays strike the rain-drops and become broken up as they are refracted, showing the visible bands of color of the spectrum, or rainbow. Then these several colors are reflected back by the rain-drops as from a mirror. Thus the observer sees the rainbow appear in the heavens, just as it did in the days of Noah after the historic flood of ancient times—a symbol of the unchangeable character of natural law during all the intervening centuries.

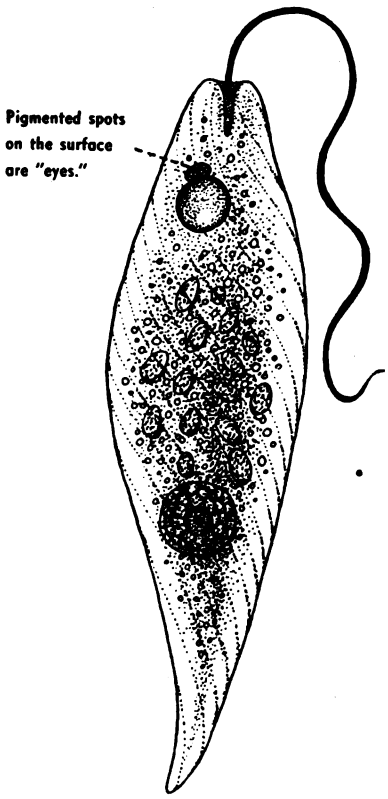
The power of a prism or of rain-drops to break up white light depends on the fact that the various colors of the spectrum have different wave lengths, and are consequently bent to unequal degrees. Therefore, when white light is made to undergo a strong change in direction, the component colors, with their different wave lengths, cannot keep pace with each other in the process of bending. They are compelled to take divergent pathways according to the relative rapidity of their steps or undulations. This extreme refraction, resulting in the breaking up of white light, is especially prominent near the edges of a convex lens.

In the eye, this disturbing feature is obviated by the fact that the edge of the lens is covered by the iris, permitting the light to pass only through the pupil and central parts of the lens, where the curvature is less extreme.

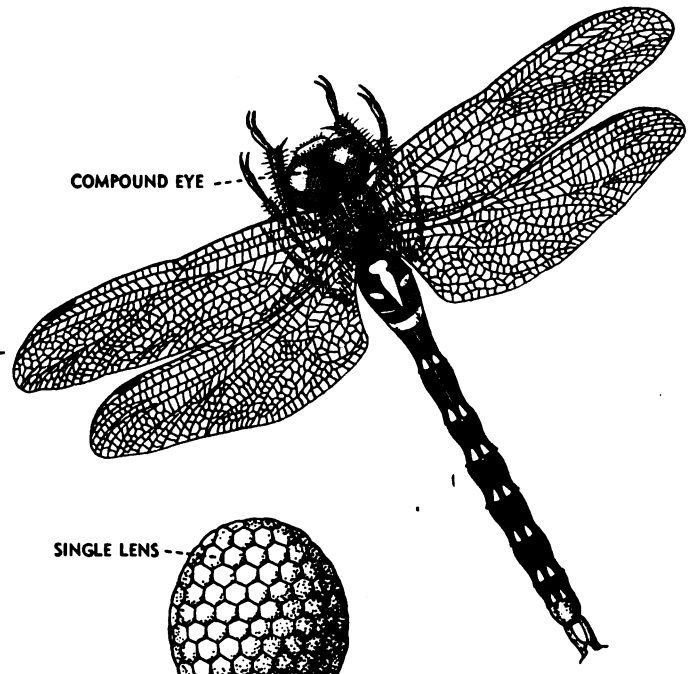
In the case of spectacles, or glasses, the manufacturer must adopt measures to neutralize this tendency toward a breaking up of light and also to prevent the wandering of the footsteps of light along the slippery surface of the lens margin. This latter feature is known in physics as the aberration or wandering of light rays.

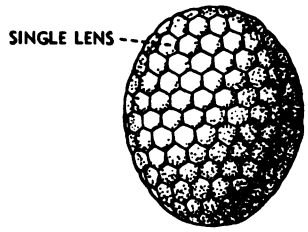
In addition to the seven luminous rays of the rainbow there are other rays, not luminous or visible but exceedingly powerful and important. Below the red band of the spectrum there are the invisible infra-red or heat rays. These have long, penetrating waves that affect

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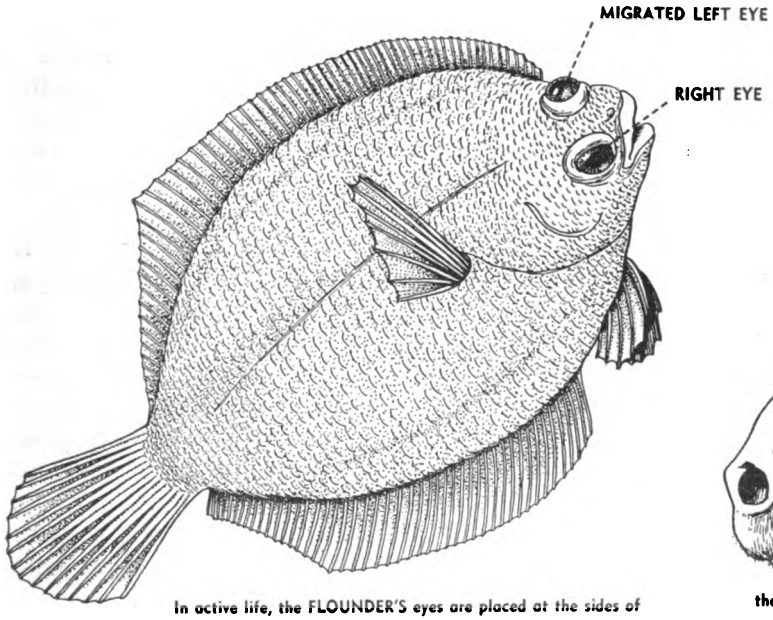
The EUGLENA (greatly magnified)—a one-celled animal whose pigmented surface spots are the first, primordial eyes of the animal kingdom.





COMPOUND EYE (greatly magnified)

The "compound eye" of the DRAGONFLY is a mosaic of thousands of little lenses, each with its own filament of nerve fiber connecting with the nervous system.



In active life, the FLOUNDER'S eyes are placed at the sides of its head. When it retires to the bottom of the sea to spend its last days, the eyes move upward toward the top of the head, the only position in which they could be useful.



EYES OF HIGHER ANIMALS such as the horse are placed definitely on the side of the head, so that they may see objects on the right side with the right eye and objects on the left side with the left eye.

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particularly the deeper structures of the body, including the eye.

At the extreme other end of the spectrum, or rainbow, beyond the violet band, is another group of invisible rays called the ultraviolet. These ultraviolet rays produce sunburn. If exposure is continued daily, they finally lead to the formation of a tan pigment on the surface of the body. Other rays include the x-rays and the radium rays, and the more recently developed cosmic rays discovered by Dr. Robert A. Millikan of California.

During the long history of man he had never seen until recently any of the manifestations of what we now call the x-rays or the roentgen rays. He called certain substances opaque, translucent, or transparent, according to the resistance which they offered to the penetration of ordinary luminous rays. Now we are able to see through the human body or even the trunk of a tree by virtue of the effect which these special modified rays of light have on the sensitive elements of a screen.

Moreover, these x-rays have certain qualities beyond their mere power of penetration. They have a selective activity in relation to different living cells of the human body. For instance, rapidly growing cancer cells are the ones which are most readily killed by exposure to the mysterious x-rays. In a similar way, the peculiar rays emanating from radium have the power of destroying certain kinds of living matter without apparently losing any of their powerful reserves. In other words, one gram of radium apparently always has the same constant power and can be used over and over again. The human eye can appreciate the manifestations produced in x-ray pictures, although the rays themselves are still not completely understood. Their power, nevertheless, has been harnessed for human service, and the possibilities are bright for future development.

PLANT AND ANIMAL VISION

We are not accustomed to think of plants as seeing the light, and yet in a real sense they feel the touch of light and respond to its power. In fact, the existence of plant life is interwoven with the potent and mysterious action of various light vibrations pervading the earth.

It is some strange kind of vision that guides upward the myriad fingers of the trees and of the vines lifted into the sunshine. It is some mysterious kind of vision that can see and choose colors for the roses, lilies, and daffodils that beautify our fields and gardens. It is some penetrating kind of vision that can go down into the microscopic world and guide bacteria toward or from the light.

Throughout the long and varied history of plant life on earth it has been the sunlight and the chlorophyll—the green coloring matter of leaves—that have held the keys locking the simple elements of carbon, hydrogen, oxygen and nitrogen with the complex ingredients of the soil. It is thus that the forests and fields, and the reservoirs of coal and oil, have been provided for the comfort and happiness and welfare of mankind.

Sunlight even participates in the chemical action of the inorganic world. The vast photographic industries of our modern civilization rest on the photochemical reactions of this subtle and marvelous force of light. The teeming millions of people who crowd the theaters in nearly every hamlet and city on the globe are paying homage and appreciation to the chemical and physical attributes of this diversified power—light. Light is practically a universal stimulus to animal activity. It is interesting to trace the development of the appreciation of light from the lowest forms of life through the countless higher species in the animal world.

In the most primitive forms of life, in which there are no definite organs of vision, there is, nevertheless, a response to light, and this response resides in the general external surface of the animal, or in its general mass. It is known that these minute creatures, which can be seen only with the aid of the microscope, will move toward the light or from the light according to their inherited characteristics.

Through mechanical modifications of the microscope, whose very principles were suggested by the human eye, we descend into the microscopic world teeming with uncounted myriads of elemental forms of plant and animal life. There we can see the processes of bacterial action in the development of a host of diseases among all plants and animals. Through this medium we can learn many of the mysteries of life and action, which end in the melancholy march to that state of being we call death.

In the more intricate and complex developments of light and life we find definite portions of the body set apart—with special adaptations to en- *(Continued on page 362)*

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Walk Your Way to Health

By E. A. CONKLIN

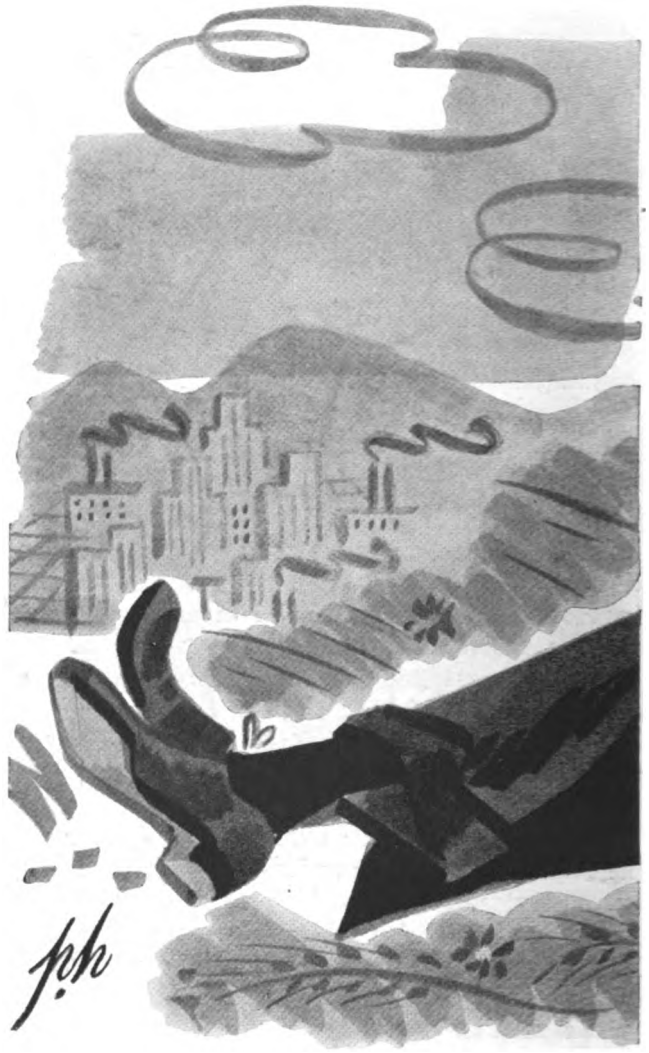
ARE YOU ONE OF THOSE who dislike the very thought of walking when a car, bus or other vehicle is available? Do you studiously avoid having to exercise your feet at every opportunity? In short, are you one of the "ride, don't walk" clan, who number among their supporters youngsters and oldsters alike from every walk of life?

If you are it's really too bad, because apart from its many physical benefits, a daily walk actually improves your mental condition tremendously. If you're inclined to be melancholy when you awake in the morning, a walk will help chase away your depression. If you have deep-rooted worries on your mind, walking will give your weary brain a temporary respite and allow you to face your difficulties a little later on with renewed vitality.

If you haven't walked, to amount to anything, since childhood, you should exercise a little care in the preliminary steps of becoming an expert hiker. For one thing, watch yourself in the store windows as you stride along. Are your actions reminiscent of an old Dutch windmill, arms flinging wildly? Do you hurtle yourself along as though you were Superman hustling through space on a mysterious errand? Or do you muddle dejectedly on, head bent downward like an ostrich? Perhaps your walking *(Continued on page 367)*

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How to RELAX



By MORRIS FISHBEIN

"IF WE COULD LEARN how to balance rest against effort, calmness against strain, quiet against turmoil," says Dr. Josephine Rathbone, "we would assure ourselves of joy in living and psychophysical health for life." The psychologists believe that people who live dynamically without being too tense have four main attributes: first, rhythm in their activities with great swings in output and accomplishment, alternating with periods of repose; second, a sense of values which makes it possible to minimize effort and minimize strain; third, ability to reduce muscular tension in any part of the body consciously whenever desired, and, fourth, a readiness to fall asleep at will.

While these attributes may develop spontaneously to some extent in some persons, it is also possible to cultivate them in a measure. In order to aid such cultivation, ten tricks are presented which are believed to be useful in realizing relaxation. They are:

1. Cut down on the intensity of your thinking half an hour before retiring. (Play Chinese checkers, plan an excursion for the week end, write a letter to a friend, fill with pleasant things you have been doing.)

2. Take plenty of time to get ready for bed (next morning's clothes, leisurely bath, and so on).

3. If you like to read in bed choose nonfiction or a "hard" book. Force your mind to grapple with cumbersome facts, bore it into unconditional surrender to sleep.

4. Transplant your mind from fears or hates to a field which has interest without excitement (a new wardrobe, possibly).

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5. Make your mind hop from one idea to another. Just as the mind loses consciousness and sleep comes, thoughts become disjointed and scattered. (Start with some happy episode in childhood, for example.)

6. To quiet the body, get rid of any pressure or pain. (Lighten weight of covers, clothes.)

7. Tepid bath without a rubdown. (Get into bed a little damp and chilly. As the body becomes warmed it becomes more and more comfortable. If during the night one becomes sleepless, throw back covers until body becomes uncomfortably chilly. Then when the covers are pulled up again, the body once more sinks into coziness.)

8. Imitate the slow, deep rhythmical breathing of sleep. (Helps regulate the circulation and may ease the mind and emotions.)

9. Relax the muscles completely.

10. Get rested before trying to sleep. (Get into bed an hour or more before your regular time for retiring. Do so night after night to build up a reserve of rest and fall asleep without the old struggle.)

The balance between what can be accomplished by education and practice and what is innate in producing relaxation and longevity is a delicate one. Physicians have long known that people with a low blood pressure, a low basal metabolic rate, a low pulse rate and a low intake of food—if all of these are not too low—tend to live longer than those in whom these physical factors are at extremely high levels. Perhaps equally important is a low threshold for the sense of humor—a mental attitude which does not take life too seriously.

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Are You Going to Die

By PHOEBE M. WALTERS

"WHAT we don't know won't hurt us" is a saying that may be true about a lot of things, but what we don't know about cancer is quite another matter. Fortunately for us, doctors do know a great deal more about it today than they did a few years ago. They know how it starts, but not why. They know what to do to get rid of it, but very little about what to do to prevent it. Those things are yet to be learned, but even at that we are much better off than were our forefathers, who were doomed from the start. If we act intelligently our chances of dying of cancer are reduced almost to zero, but we, and our doctors, are faced with two problems.

Both problems arise from the nature of cancer itself. When normal body cells are used up or otherwise destroyed, new ones are formed to take their places. This adjustment of the cells to the laws of supply and demand is a normal process in every organ of the body. But for some unknown reason this perfect balance may be upset. The mechanism controlling the supply is destroyed, and the cells go on multiplying regardless of the demand. Released from their proper control these cells run riot; they multiply without end. Like an ugly weed they grow rapidly and spread out, eventually forming an abnormal growth or tumor. Thus a process which is essential to life is suddenly turned into an instrument of death.

Not until the tumor is formed is there likely to be any hint of what is going on, and then only if the tumor manifests itself by some unusual discharge, or if it interferes with or encroaches in some way on the function of the organ involved, or of some adjacent organ. Herein lies the danger, for before the interference becomes sufficient to cause definite symptoms, and even these are seldom disturbing enough to cause concern in the unwary, the abnormal process may have spread to adjacent organs, or worst of all into the blood stream or into the lymphatic system which drains many parts of the body.

Not all of these tumors are cancerous, or malignant, though they may start in the same places. Why the cells of one tumor have in them a cancer "seed" and the cells of another tumor do not is a problem still unsolved. But the question that can be answered and must be answered immediately on the discovery of a lump or swelling or abnormal growth either seen, felt, or suspected is, "Which kind of tumor is it?" The only sure way to answer that question is to have a piece of that tumor

TABLE I

Five Year Cures in the Treatment of Cancer *

ORGANS AFFECTED	100 PATIENTS TREATED			
	RELATIVELY EARLY		RELATIVELY LATE	
	CURED	NOT CURED	CURED	NOT CURED
Breast	75	25	29	71
Thyroid	70	30	23	77
Uterus (womb)	68	32	27	73
Cervix (mouth of womb)	57	43	28	72
Large intestines	54	46	29	71
Stomach	42	58	17	83

* *Mayo Clinic statistical department.*

Such cases are officially accepted as cures because few cases that remain well for a five year period will recur.

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# of Cancer?

examined under the microscope by a trained specialist.

Even though the tumor proves to be non-cancerous, or "benign," in all probability it will still need to be removed, because its mere size would eventually interfere with some vital organ or passageway and would overtax the ability of the blood stream to supply it with food. But its removal would not involve as extensive an operation, because benign tumors are usually surrounded by some sort of limiting capsule and do not invade the adjacent tissues.

Malignant (cancerous) tumors, on the other hand, usually have no clearly defined boundary and seem maliciously eager to invade the surrounding tissues. A cancer in its early stage is usually confined to a small area, but leave it alone and it will grow by leaps and bounds. It is no sickly, feeble tissue but one which possesses tremendous vigor and power of growth. One might as well build a fire inside one's body as to harbor and nourish a cancer, for, like fire, cancer will spread, get out of control and send out sparks from the main blaze to settle elsewhere and thus start a secondary fire in some vital and perhaps inaccessible part of the body.

The only forms of cancer treatment approved by the medical authorities are surgery, x-ray and radium, either singly or in combination. If you hear of some one who has been "cured" by other methods you can be sure that he never had cancer in the first place and was the victim of a faulty diagnosis. The more doctors know about cancer the less they are willing to promise in the way of a "cure." In fact, they speak not of curing cancer but of treating it and arresting its growth. By keeping records of cancer cases over a period of years the success of these three types of treatment, and the failure of all other types, can be demonstrated. The success of surgery, radium or x-ray, however, is directly related to the stage which the cancer has reached when treatment is first undertaken.

For instance, table 1 shows the "cures" (five year survivals) for cancer in various organs, according to whether the patient was treated relatively early or relatively late in the disease. By "relatively early" is meant before the cancer has spread from its original site to other parts of the body.

If the race were only against time we might hope that eventually, when all the doctors became experts in diagnosing early cancer and all the people were educated to recognize its early symptoms, the first two columns in table 1 would represent the worst that could happen. Unfortunately, there are other considerations, the most vital of which is the degree of malignancy.

Here again doctors do not know why the mortal character of cancer varies in degree, but they know that it does. The pathologists, doctors with special training for this type of work, can take a small piece of body tissue suspected of being cancerous and after preparing it properly and examining it under the microscope can tell not only if the cells are cancerous but determine their degree of malignancy or virulence. The mildest type of cancer, like a smoldering fire, might exist in the body for weeks, months or even years and still on discovery be confined to a small area and be curable. The most severe type, on the other hand, is like a bomb from the blue, causing an immediate conflagration and spreading so rapidly that within an incredibly short period of time, possibly weeks, it may be completely out of control. *(Continued on page 379)*

TABLE II

Comparison of Five Year Cures of Cancer of The Breast *

PERIOD OF TREATMENT	100 PATIENTS TREATED	
	CURED	NOT CURED
1910 - 1915	41	59
1916 - 1920	42	58
1921 - 1925	43	57
1926 - 1930	48	52
1931 - 1935	56	44

* *Mayo Clinic statistical department.*

Nothing could illustrate more clearly either the potency of the disease or the determination of the medical profession to conquer it. Progress has been painfully slow, but it is progress, and the momentum is increasing.

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The Tuberculin Test in

Much of the great progress in the prevention of tuberculosis is made possible by the tuberculin test — a specific aid in diagnosing tuberculosis

By J. ARTHUR MYERS and VIRGINIA L. DUSTIN



FIFTY YEARS AGO, Robert Koch, discoverer of the tubercle bacillus, introduced living bacilli under the skin of a group of guinea pigs entirely free from tuberculosis and another group which had the disease; each group responded in a different manner. He then repeated the experiment, using dead tubercle bacilli, and again observed a difference in the response. From this, he reasoned that a substance might be prepared from tubercle bacilli which could be used effectively in diagnosis, treatment and prevention of tuberculosis in animals and man. Koch's experiments led finally to the development of tuberculin, whose diagnostic quality in animal and human medicine was soon recognized.

Later experiments proved conclusively that tuberculin is highly specific in the diagnosis of tuberculosis in cattle; the fact was easily established in animals. The tuberculin reaction detected tuberculosis even though the microscope was necessary to find the lesions. When applied to man the test was equally specific, although it was difficult to prove this point as promptly, since it was only when postmortem examinations were made that the true situation could be revealed. Detailed postmortem examinations of persons who reacted to tuberculin but had no symptoms of the disease revealed the presence of tuberculous lesions.



For approximately three decades tuberculin was made by essentially the same method described by Koch. There was usually added to the final product a preservative, such as carbolic acid, of such concentration as to make life impossible for any organism, including tubercle bacilli. The protein of the tubercle bacillus was found to be the active principle in producing the tuberculin reaction, and since some persons are sensitive to various other proteins, it was essential that tuberculin contain no protein except that of the tubercle bacillus. Since it is only the protein fraction of the tubercle bacillus to which tissues become sensitized,

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Tuberculosis Prevention



After finding children who react to tuberculin in school tests, doctors go into their homes to trace possible sources of infection by examining parents, grandparents and others in contact with the children.

the idea was conceived of using only the protein as a testing material. Such a preparation was introduced in 1931 and is now available under the name of Purified Protein Derivative.

In the earlier days, tuberculin sold at approximately $1,000 a pint, but as the demand for it increased so it could be made in large quantities, the cost of production was materially decreased. In 1893 provision was made to supply tuberculin without charge to certain health officers and official veterinarians of the United States and its territories. In 1907, Dr. W. A. Evans, Commissioner of Health of the City of Chicago, arranged for free distribution of tuberculin to physicians. In recent years, it has been distributed without cost to physicians by state and local tuberculosis associations and departments of health, so that today it is free to physicians as well as veterinarians in practically all parts of this country.

Prior to 1907, the tuberculin test was administered by the subcutaneous method; that is, it was introduced immediately beneath the skin with a hypodermic needle. The reaction was determined largely by the development of symptoms, such as fever, which appeared within twenty-four hours after administration. Veterinarians began to take the temperature

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of cattle six hours after they had administered tuberculin and recorded the readings every three hours. If an elevation of two degrees occurred, the animal was said to be a reactor, and the postmortem examination nearly always revealed tuberculous lesions—despite the apparent excellent health of the animal. If no such elevation of temperature occurred within twenty-four to thirty hours, the animal was said to be free from tuberculosis, and postmortem examinations revealed that this was nearly always true. When the subcutaneous test was administered to a human being suspected of having tuberculosis, he was kept strictly in bed, and frequent temperature readings were recorded. If a definite elevation was observed, other symptoms, such as malaise and even changes in the suspected region—increased physical signs over a part of a lung or swelling and tenderness of lymph nodes along the sides of the neck—sometimes occurred. Any person who had fever with or without these additional findings was said to be a reactor and, therefore, had tuberculosis; whereas any one who did not present an elevation of temperature within twenty-four hours was said to be a non-reactor and did not have tuberculosis.

The amount of tuberculin used in the subcutaneous test was so large that it was capable of doing harm. Therefore, it was necessary to determine a dosage that would be incapable of causing injury to the animal or human body and which would still determine with accuracy the presence of tuberculosis. In 1907 and 1908 several alternative methods were developed; some of these are still in use in certain groups. The method in widest use today, devised by Mantoux of France in 1908, is known as the intradermal or intracutaneous test. The advantages of the intracutaneous method of administration are that a measured amount of tuberculin is introduced into the layers of the skin and remains where it should be. No tape or bandaging of any kind is necessary, and several hundred tests can be administered by one person in an hour.

Recently, an American physician introduced another modification which is designated as the tuberculin "patch" test. The patch consists of a strip of tape to which has been attached two small squares of thin filter paper saturated with undiluted tuberculin and dried. The tape is then tightly applied with the patches adjacent to the skin, where they remain for forty-eight hours. It is best to allow another forty-eight hours to elapse after the removal of the patches before reading the test. Objections to the patch method of administering tuberculin are that many persons complain of the itching sensation produced by the adhesive tape, with excessive perspiration the adhesive may actually fall off, and most people dislike to omit bathing for forty-eight hours while the tape is on the skin. Although physicians' desks in this country have been generously supplied with circulars and pamphlets presenting the good qualities of the various other methods of administering tuberculin, the intracutaneous method of Mantoux must be looked on as the standard.

The procedure of the intracutaneous test does not differ from that employed in determining the presence of immunity for diphtheria and scarlet fever. To state that only a small percentage of the persons in any political division will submit to this test because it involves the use of a needle is to admit that the public has not been properly informed. In testing human beings with tuberculin, strict supervision in the manufacture of tuberculin is necessary. Obviously, inferior tuberculin may lead to unsatisfactory results, and on occasions the tuberculin test has been unjustly condemned when in reality the condemnations should have been directed at the producers of tuberculin of poor quality.

In administering the intracutaneous test, 0.1 cc. of diluted tuberculin is introduced into the layers of the skin through a fine hypodermic needle. It is important that the needle should not pass through the skin into the subcutaneous tissues, since no reaction will then be manifested even though the person tested is sensitized. This error is frequently made and is responsible for some of the poor results of testing. The tuberculin test should be interpreted at the end of seventy-two hours. The reaction is indicated by an area of swelling or hardening of the skin at the site of administration. This area must be at least 5 to 10 millimeters in diameter; small, shot-like areas of hardening are not significant. In interpreting the tuberculin test, it is far better to use the sense of touch than the sense of sight, since hardened areas may be felt when they are not visible. Small areas of pinkness or redness do not constitute a reaction to tuberculin; they are usually due to injury and for the most part disappear in less than seventy-two hours. One of the chief errors in the interpretation of the tuberculin test has *(Continued on page 372)*

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SUN-FILLED DAYS *without* PAINFUL AFTERMATHS

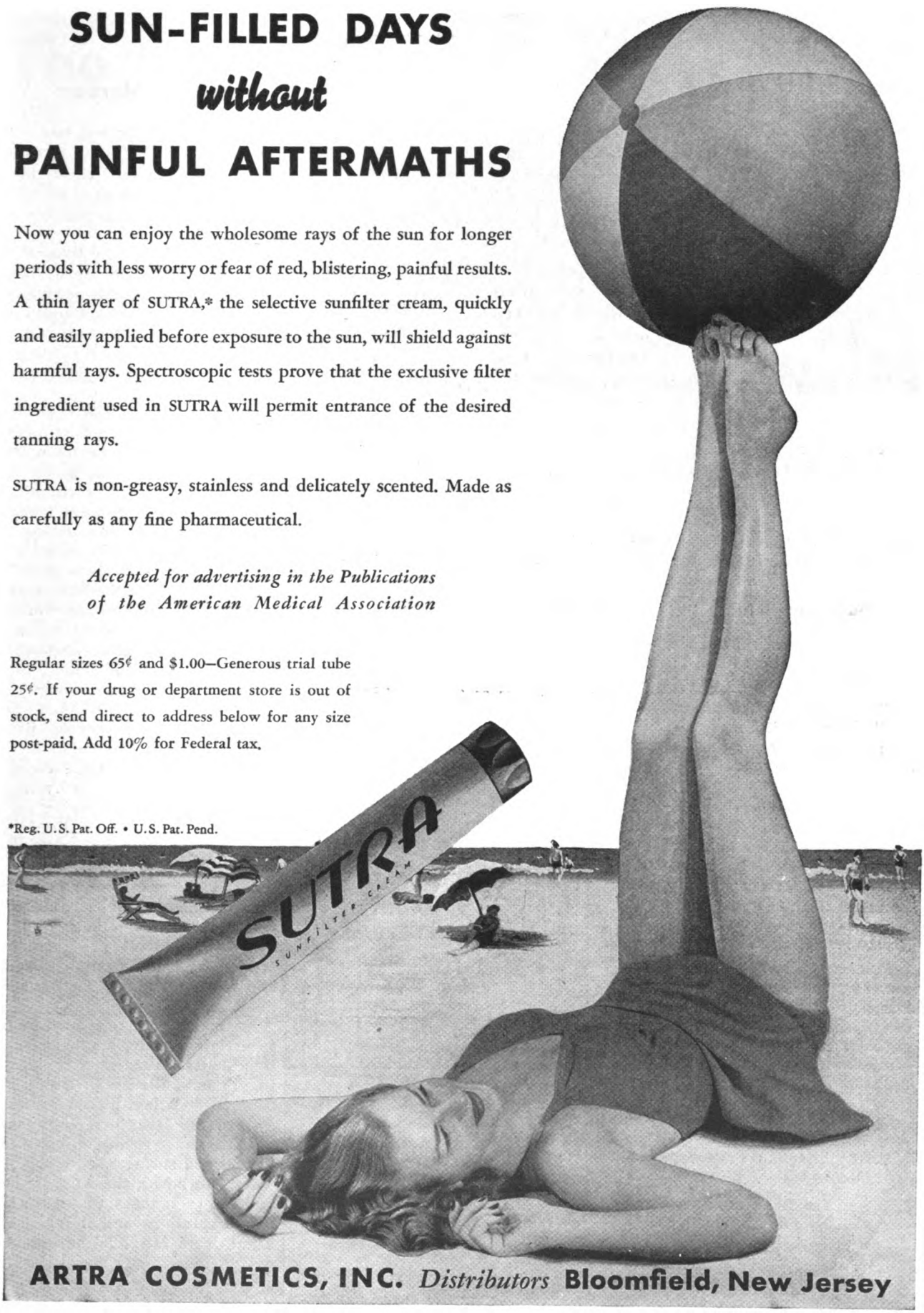
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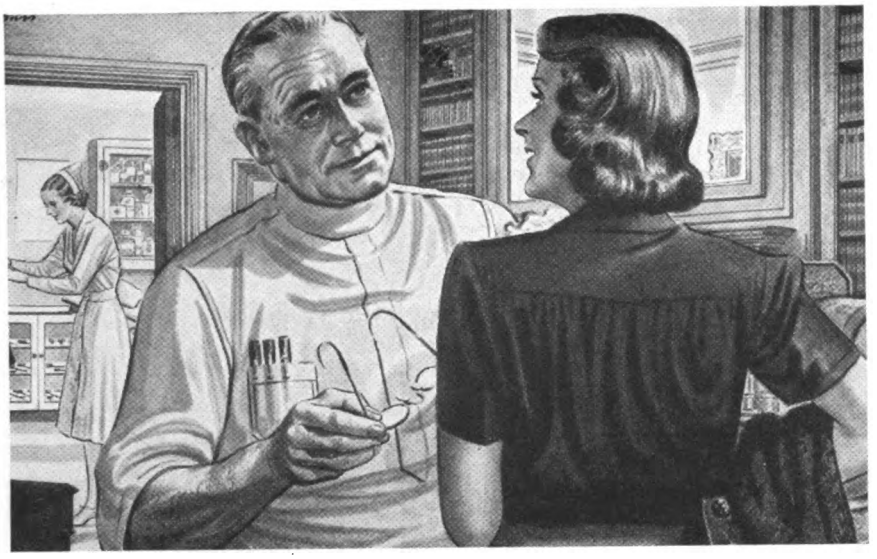
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"No, it isn't Cancer—"

THIS WOMAN had one of the symptoms often associated with cancer. She asked herself, "Shall I wait and see what happens . . . or go to the doctor?" Wisely, she chose the latter course.

Now, after thorough examinations and tests, she has just heard the welcome words, "No, it isn't cancer."

How thankful she is that she went to her doctor at once! For, even though the symptoms usually associated with cancer do not *always* mean cancer, they do indicate that something is wrong.

If cancer *is* present, the earlier it is discovered and properly treated, the greater are the chances for a cure. The chances of curing *early* cancer of the breast are almost four times greater than those of curing it in its late stages; in early cancer of the pelvic regions, the chances are *eight* times better.

That is why anyone with a suspicious cancer symptom should go to the doctor immediately. Fortunately, those cancers which give easily recognizable danger signals are usually the ones which can be treated most successfully. Here are some of the danger signals:

1. Any unusual lump or thickening, especially in the breast.
2. Any irregular or unexplained bleeding.
3. Any sore that does not heal—particularly about the mouth, tongue, or lips.
4. Persistent indigestion, often accompanied by loss of weight.
5. Noticeable changes in the form, size, or color of a mole or wart.
6. Any persistent change from the normal action of elimination.

The only positive way to tell whether cancer is present is a microscopic examination. If cancer is present, there are three forms of treatment—surgery, X-rays, radium, or a combination of these.

Metropolitan will send you a free booklet, 52-Z, "A Message of Hope about Cancer."

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The Metropolitan presents this appeal for 50,000 well-qualified young women to enter approved schools of nursing during 1942. The appeal is made at the request of the Government by the Nursing Council on National Defense. Here is an opportunity for patriotic aid in meeting the emergency needs of the Army, the Navy, and Civilian Defense. It may also be a step toward a career of lasting usefulness and future economic security in post-war reconstruction. For further information apply to your State Nursing Council on Defense, or to the Nursing Information Bureau, 1790 Broadway, New York City.

Pearl Harbor

(Continued from page 343)

undershirts suffered chest burns and few suffered burns at all whose extremities were completely covered.

Unfortunately, at the time of the attack many sailors were lightly clad—some in shorts only—and consequently suffered painful injuries. The Navy doctors will not disregard this lesson—that the most critical burns can be avoided by complete clothing.

The burned sailors at Pearl Harbor were treated by a new method used for the first time on a large scale. The sulfa drugs made their debut as an American wartime healing agent. A mixture was made of mineral oil and sulfanilamide or sulfathiazole. Large dressings were dipped into this mixture and then applied directly to the burned area. The oil acted as a soothing lotion to the burned flesh, while the sulfa drugs prevented the development of infection. A sulfanilamide powder was also used, dusted directly on the burn, but it was found to cake over the wound surfaces and its use was discontinued.

At the same time large doses of sulfathiazole were given by mouth as a further aid in stopping invading germs before they could do any damage. By these means the danger of infection from burns was reduced to a minimum, and in only a very few cases did any infection develop. Thanks to the sulfa drugs, men who by all past standards would have died were recovering and were eager to get back into the fight.

Lesser burns were treated by that sovereign remedy, tannic acid. In some cases, dressings were dipped in gun tubs filled with tannic acid solution and then placed gently on the wound. In other cases tannic acid jelly was rubbed directly over the burned surfaces.

Next to burns, the most frequent number of injuries was caused by high explosions and flying debris. There were intestinal and abdominal wounds, many so serious that

(Continued on page 392)

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The Great American ICE CREAM CONE

By DORIS McCRAY

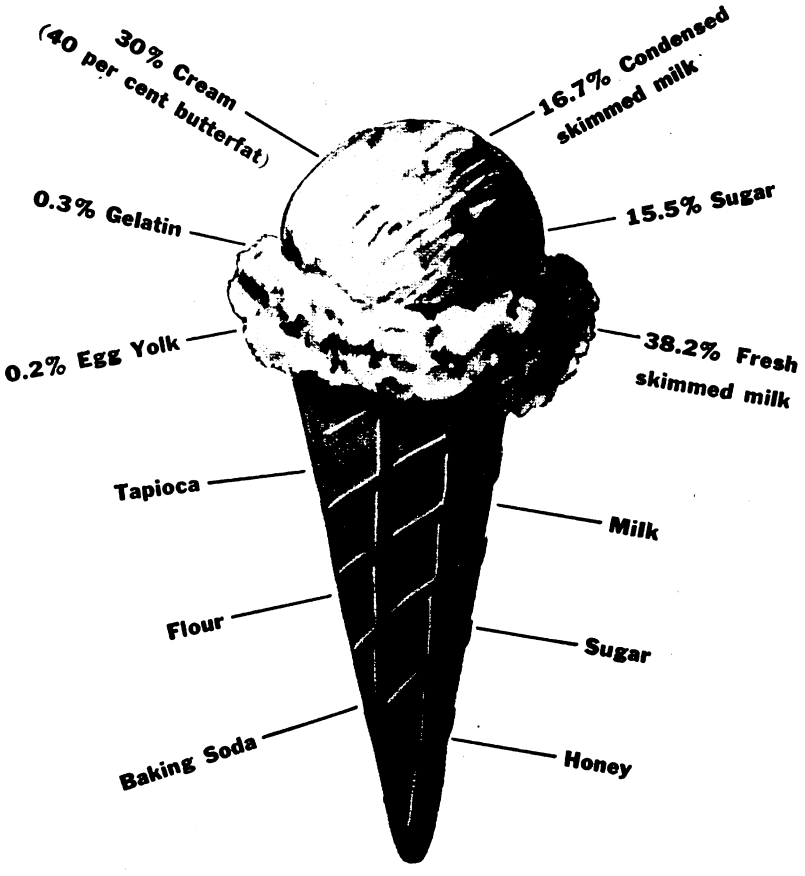
PLEASURE FOR FIVE PENNIES —that we may eat while walking back to work—is still our American privilege, although delicate fruits, flavors and beverages from tropic isles become scarce. Our favorite national dessert is made and consumed only a short distance from dairies where the rich milk and cream are produced.

The little child with five pennies clutched firmly in his fist measures their value in terms of pleasure. Ice cream is pleasantly sweet; it feels smooth on the tongue. He cares not that it contains calcium and riboflavin. He fails to associate it with the milk his mother makes him drink. His interest is solely to satisfy his sweet tooth, yet he will choose an ice cream cone in preference to chewing gum, licorice ropes, candy-coated peanuts or all day suckers which have a higher sugar content and no calcium or vitamins.

The factory worker, in a few minutes for recreation, wants mainly refreshment to give him a "lift." The ice cream cone in this role competes with smokes, soft drinks and candy. He seeks not only the pleasure of the moment but the after-effect of a small amount of food or stimulant.

The hospital dietitian uses ice cream as a "treat"—a light, pleasurable dessert to tempt the finicky appetite. But she tabulates all of its nutritional values. On the hospital tray, it ranks with milk desserts, tapioca, jellied milk or rennet desert.

The homemaker uses ice cream for its "partified," festive air. In her menu, ice cream is a flavored, sweetened, attractive dessert. Sometimes it replaces a heavy, hard-to-digest dessert. She uses ice cream mainly for the wholesome pleasure it gives to family and guests, but she appreciates it because it saves her time, effort, sugar and fuel, and



The Food Value of an Ice Cream Cone

it demonstrates that she is discriminating and careful.

The smooth, melt-in-the-mouth texture and rich flavor of ice cream sell it to every one—hence no need to dwell on that luscious, mouth-watering goodness. Since the days when we laboriously took turns at turning the crank on our back porch, the ingenuity of man has brought the esthetic and gustatory appeal of ice cream to an unheard-of peak of perfection—to enjoy in dark days when pleasures are few.

We must thank the dairy industry for performing a gigantic and heroic task in stepping up production of all dairy products for lend-lease and Army and Navy needs, yet having plenty left for better nutrition at home. We do have ample milk and milk products.

So important has ice cream become that it is included in each reference to the protective foods in the newest editions of our standard books on nutrition. We read that, in medium cost dietaries studied, "milk (including cheese and ice cream) was the largest contributor of riboflavin to the dietary, meat (including poultry and fish) was second, and vegetables stood third." Again we read that "fruits and vege-

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SAVE SUGAR by using MOLASSES

NO SUGAR NEEDED in this BRER RABBIT gingerbread

½ cup melted shortening
1¼ cups Brer Rabbit Molasses
1 egg, beaten
2½ cups sifted flour
1½ teaspoons soda
1 teaspoon cinnamon
1 teaspoon ginger
½ teaspoon cloves
½ teaspoon salt
¾ cup hot water

Mix shortening and molasses; add egg. Stir until blended. Mix and sift dry ingredients; add alternately with hot water. Bake in well-greased 9x9x2 pan in moderate oven (350° F.) 45 minutes. Yields 16 portions.

NO SUGAR NEEDED in these tasty BRER RABBIT cookies

¾ cup melted shortening
1 cup Brer Rabbit Molasses
2 eggs, beaten
2¼ cups sifted flour
4 teaspoons baking powder
¼ teaspoon salt
1 teaspoon cinnamon
½ teaspoon ginger
½ cup milk
½ teaspoon soda
½ teaspoon lemon extract
1 cup raisins, chopped

Mix shortening and molasses. Add eggs; stir until blended. Sift together dry ingredients; add to first mixture alternately with milk, in which soda has been dissolved. Add flavoring and raisins. Drop by teaspoons on greased baking sheet. Bake in hot oven (425° F.) 8 to 10 minutes. Makes 4 to 5 dozen cookies.

NO SUGAR NEEDED when you use delicious BRER RABBIT Molasses as the sweetening for cereal, stewed fruits, grapefruit, baked apples, baked ham, candied sweet potatoes.

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tables generally, and milk, cream and ice cream, tend to ensurance of good intakes of calcium, phosphorus, vitamin A and vitamin C."

In order to provide for thiamin (vitamin B_1) and to provide other vitamins and mineral elements at the same time, (1) at least half the needed calories should be taken in the form of such protective foods as milk (including cream and ice cream), fruits, vegetables and eggs, and (2) at least half the breadstuffs and cereals should be whole grain products. The thiamin value of 100 Gm. of plain ice cream is given as approximately 0.04 mg., the riboflavin 0.1 mg., ascorbic acid (vitamin C) 1 mg., and the vitamin A value is approximately 450 international units. Experimental animals that furnish these figures must have enjoyed their ice cream!

The average American consumed within the last year:

329 pounds of fresh milk
17 pounds of butter
16 pounds of evaporated milk
9 pounds of ice cream
6 pounds of cheese

This totals 377 pounds out of an estimated total of 1,440 pounds of food per person during the year—which certainly shows a strong preference for dairy products.

Because the ordinary person is more apt to be short on calcium than any other chemical element, we have come to think of milk (including cheese, cream and ice cream) as a most important source of calcium. There is approximately 0.08 Gm. of calcium in 100 Gm. of ice cream, also 0.08 Gm. of phosphorus and 0.0002 Gm. of iron.

There is absolutely no danger, in telling the nutritional value of ice cream, that it may become one of those foods you "must eat because it is good for you"—hence (by some quirk of the mind) less liked than things that merely taste good.

An average ice cream mix consists of 30 per cent whipped cream (cream containing 40 per cent butter fat), 16.7 per cent skimmed condensed milk, 37.2 per cent skimmed milk, 15.5 per cent sugar, 0.3 per cent gelatin and 0.2 per cent egg yolk. The skimmed condensed milk and the skimmed milk contribute significant quantities of lactose, casein, lactalbumin and the mineral salts found in milk. These are known as "milk solids not fat." The percentage of sugar is much lower than in candy, and the percentage of milk and cream is a great deal higher.

Two thirds of a cup (most housewives consider that one quart of ice cream will serve six people) of ice cream furnishes about 200 calories from the 3.5 Gm. of protein, 11.9 Gm. of fat and 17.9 Gm. of carbohydrate which such a serving contains. These figures are based on the average composition of ice cream but will vary somewhat among individual products.

Our reference book does not give an average for candy, because it varies greatly according to the ingredients which may include milk, cream, butter and nuts. But the main ingredient may be sugar or sirup.

One half cup of refined white sugar furnishes 400 calories. It furnishes 100 Gm. of carbohydrate, but no other values: no protein, fat, minerals or vitamins. The calories of sugar are easy to replace in the diet, but the craving for something sweet, especially at the end of a meal when sugar is a suitable satiation factor, is best met with a food that contains a low percentage of sugar and large bulk.

The air whipped into ice cream to make that large bulk and the desired velvety texture is referred to as "overrun." The word reminds us of the time we poured too much cream into the freezer, and it came out the top while it froze. (We had a spoon handy!)

According to the book, "Accepted Foods," prepared by the Council on Foods of the American Medical Association, "most ice creams have between 100 and 50 per cent overrun, though it is not unusual to find ice cream with as much as 130 per cent overrun."

The federal government in buying for its institutions specifies ice cream of not more than 100 per cent overrun, or about 50 per cent air. This ice cream must weigh at least 4½ pounds to the gallon. That means 1 pound and 2 ounces to the quart or about 9 ounces (255 Gm.) to the pint.

The average composition of ice cream (of not more than 100 per cent overrun), according to the Council on Foods, is protein 4 per cent, fat 14 per cent and carbohydrate 21 per cent. A small serving of this same ice cream (one-sixth of a pint or 43 Gm.) will provide 1.7 Gm. of protein, 9 Gm. of

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carbohydrate, 6 Gm. of fat, 35 mg. of calcium, 34 mg. of phosphorus, 0.08 mg. of iron, 200 units of vitamin A and 96 calories.

When I made ice cream myself, I liked to pour top milk into the rich cream to thin it down, so it would not taste so rich, however a good proportion of rich cream will give a richness of flavor that can be obtained in no other way. The different states set a legal minimum, ranging from 8 to 14 per cent butterfat. Ice cream purchased for government institutions must contain 12 per cent butterfat. Many states set a legal minimum for total milk solids which runs from 18 to 20 per cent (including the butterfat). The butterfat carries vitamin A as well as extra calories, and if vitamin D milk is used for ice cream, this vitamin is found in the cream.

The body and texture of ice cream will vary according to the ingredients and method. By body, the whole mass of ice cream is referred to—its firmness or resistance. Texture refers to the finer particles of the ice cream. Home made ice cream is apt to have fine, needle-like slivers of ice unless it is properly made. Commercially, the ingredients are weighed carefully. Homogenized cream makes smoother ice cream which has smaller crystals. In homogenization of the cream, the fat globules are broken up. This also means that ice cream is often more easily digested than plain whole milk.

Pasteurization means safety. Many local departments of health require the pasteurization of all milk products in ice cream, and a few require that the ice cream "mix" (as it is called just before it is frozen) shall be pasteurized. Some states have set a legal limit on bacterial count. The maximum set by the federal government for ice cream bought for its institutions is 50,000 bacteria per cubic centimeter. While the purity of ice cream is under control of the local health board, it is practically assured any place in this country, since standardized ice cream making methods call for pasteurization wherever necessary to prevent losses to the ice cream maker.

I remember how, as a small child perched on a tall stool at a drug store, I would eat the ice cream from all sides of that exciting mound, before it would have a

Are you fighting the war in bed?

IN these trying times, worry and tension are causing sleeplessness, nervousness, and indigestion, among people previously in good health.

This anxiety is the reason many of these people—quite unconsciously—seek solace in more and more cups of hot coffee.

Now, some people can drink coffee without ill effect, but many *cannot* . . . and although coffee may seem to afford relief, it can actually aggravate the condition.

If you happen to be a sufferer from nerves and tension—and you either decide to give up coffee on your own hook, or follow your doctor's advice—it will be more enjoyable if you:

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Postum is made entirely from home-grown whole wheat and bran, roasted and slightly sweetened. This wholesome beverage contains no caffein—no stimulants whatever.

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chance to melt and run down. Ice cream should be eaten not too fast—that it may melt in the mouth for fullest enjoyment, thus it is warmed slightly before it reaches the stomach. We, as a nation, have been eating ice cream for so many years that we know its chilling effect in the stomach is slight. Many people enjoy it served with a cup of hot coffee, or a cereal beverage, especially in winter.

The amount of egg yolk affects the body of the ice cream as do the "milk solids not fat." With too little protein, the body of the ice cream has little resistance, but with too much protein the ice cream will be heavy and soggy. Milk solids not fat help give the proper body, but when the amount is too large, the ice cream is apt to be gritty or sandy in texture.

Flavoring and possibly a dash of salt round out the flavor. Many other flavors may be added to plain ice cream. Here is a classification of frozen products: 1. Plain ice cream, which may be flavored with vanilla, chocolate or maple. 2. Nut or fruit ice cream, which is plain ice cream with nuts or fruits added. 3. Bisque ice cream, made from a plain ice cream basis with the addition of macaroons, cake crumbs and the like. 4. Mousse, made with a whipped cream base. 5. Parfait, or New York ice cream, made from the same ingredients as plain ice cream, with enough egg yolk to give a yellow color. 6. Ice cream puddings, containing a mixture of fruits, and eggs in amounts similar to New York ice cream. 7. Frozen custards. 8. Ices made from fruit juices diluted with water and sweetened. 9. Sherbets made from milk or ice cream mix and fruit juices.

However, we are concerned chiefly with that poor man's favorite—the ice cream cone. Who ever saw a man looking glum while he ate an ice cream cone? It is a natural cheerer-upper.

Today's finer cones are the "waffle baked" safety type. The cone "dough mix" has ingredients similar to layer cake, but less sweet: soft winter wheat, sugar and honey in only small amounts, tapioca flour, baking soda and milk, well mixed then baked quickly to make them crisp. The cone remains crisp under melting ice cream, and is preferred to a paper carton and spoon. Cones should be and usually are protected in containers from flies, dust and handling until they are served.

Light Rays and Vision

(*Continued from page 348*)

vironment and the needs of life—which develop into the organs of vision, or eyes. It is an instinctive longing to see that paints on the outside surface of the humble euglena—a poor, blind, speechless, one-celled animal—a few little pigmented spots that are the first, primordial eyes of the animal kingdom.

ANIMAL EYES

In many of the lower forms of animal life there may be literally thousands of eyes or rudiments of eyes serving the needs of the particular species. A striking illustration of this is in the dragonfly with its thousands of eyes—little refracting units put together like a mosaic, so that each minute lens has its own small filament of nerve fiber leading to a central receiving station in the nervous system.

There is no separate movement in these individual eyes, but groups of them move together to gather up emanations of light and reflections of light from various objects in the outer world. There are countless modifications in the number and position and function of these minute organs of vision.

As we ascend the scale of animal development, the number of eyes is reduced generally to two, and the position of these two varies with the species or the age and habits of the individual animal. For instance, the flounder or the sole in his earlier and active life swims about like other small fish, with his two eyes symmetrically placed, one on each side of his head. But when he retires from his active business life he lies flat on his side at the bottom of the sea for his remaining days. Nature then helps him to adjust the position of his eyes so that both of them are placed on the upper side of the head, the only position in which they could be utilized.

Most higher animals of land and sea, such as the horse and elephant, and the tarpon and whale, have two eyes placed definitely on the side of the head, so that they see objects on the right side with the right eye and objects on the left side with the left eye. Not so with man. His eyes are placed in the front of his head and are provided with a wonderful mechanism for moving in a multitude of different positions to increase their usefulness. In other words, man has a field of what is called binocular single vision, or a field in which vision is accomplished by the joint and simultaneous action of both eyes.

In the lower animals the right eye and the left brain cooperate, and likewise the left eye and the right brain, while in human beings both eyes participate at the same time in conjunction with the brain. This is due to the fact that in the lower animals there is a complete crossing of the optic nerve fibers back of the eyeball, while in man there is only a partial crossing of these fibers. This condition of binocular single vision in man is helpful in a finer appreciation of the relation of things and in perceiving the quality of the mental pictures received by the brain.

It is an interesting law of nature that the special primitive cells for the reception of light are in the due course of time transformed into the more complex organs of vision, culminating in the marvelous combination of beauty and service realized in human eyes, which are true symbols of the soul.

Editor's Note: This is the first of a series of articles by Dr. McReynolds. The second, dealing with the anatomy of the human eye, will appear next month.

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Bacterial Warfare

(*Continued from page 345*)

largely figured *within* an army—either in training under good living conditions when new recruits from widely different backgrounds come together for the first time, or under the trying conditions of the march, the emergency bivouac and the battlefield. The terrible effects of these diseases have not been the result of enemy action. I would hardly call that bacterial warfare!"

"What *is* bacterial warfare, then?"

"It is the use of bacteria or their products by a combatant to injure the enemy. When delivered behind the lines by enemy agents located there it is called sabotage—as we are using that term these days. There are two kinds of bacterial warfare when we consider two facing, opposing forces. On the one hand, two armies may face each other on the same ground—separated only by a few miles. Germany and Russia illustrate this. On the other hand, the opposing forces may be separated by well marked bodies of water or other barriers, as, for instance, Japan and the United States or Germany and England."

"Why is there a difference?"

"The point is this," replied the Professor, laying down his spent pipe, "If agents of disease are loosened on a foe remote only a few miles and on the same terrain, the attacking power can use only an agent to which its own soldiers are immune or against which they may be readily protected. Otherwise the attack may backfire and injure the aggressor as much as it does the attacked! If, however, there is an effective barrier between the combatants so much care need not be taken."

"Would the typhoid bacillus be a good organism for use in bacterial warfare, Professor Leyland?"

"I don't think so. It is a delicate organism and causes disease only when great numbers of its kind gain entrance into water or milk and susceptible people drink them before that water has been processed or the milk pasteurized. It wouldn't matter much if some enemy alien dumped a gallon of typhoid bacilli in the river here above town. The treatment the water goes through would make it safe for drinking in the city."

"But wouldn't that make the river dangerous?"

"At the point where the billions of typhoid bacilli were dumped in the river the water would be very dangerous. But the danger would diminish through dilution with other water and as the microbes died as the result of antagonistic action of various physical and biologic forces. Some distance downstream, shorter than we think, the water would be perfectly safe. But typhoid is merely one example. No country is as well protected against disease as we are because of our high standards of living. We have highly trained health officers in every state and large city and even in a large number of rural areas. Then there is another thing."

"What is that?"

"I am thinking of the fact that in bacterial warfare we could give better than we were sent! Take Japan, for instance, a country which is ten times as densely inhabited as the United States. Its buildings and its sanitation do not match ours. Its diet is less balanced and protective. Disease is particularly dangerous in the face of crowded conditions and unsatisfactory standards of living. Japan is already heavily seeded with tubercle bacilli and the organisms of typhoid, dysentery and cholera, and it also has diseases peculiar to its own geography and mode of life. It would take far less to upset the Japanese health balance than it would ours. Many Europeans lived safely through terrible epidemics of cholera and plague in India thirty years ago, although persons of the same stock died in great numbers when these diseases devastated Europe more than two centuries ago. We cannot overemphasize the importance of good, all-round hygiene as a protection against disease!"

"If the typhoid bacillus is not a good microbe for use in bacterial warfare, what organism would you suggest, Doctor Leyland?"

"A number of years ago a student at the Massachusetts Institute of Technology described the ideal organism for this purpose. It must be quick acting, highly virulent and invasive, and able to attack man through the skin or when inhaled or swallowed. It should not be too contagious, and it should yield to control. It should attack animals as well as man, and it should be available in large quantities in virulent form. Such an agent should possess resistance to destruction by drying, light and other natural factors unfavorable to the life of disease-producing bacteria outside the body of a host."

"Sounds like the anthrax bacillus."

"Yes. Bacillus anthracis answers the description very well."

"Then why don't you feel alarmed about it?"

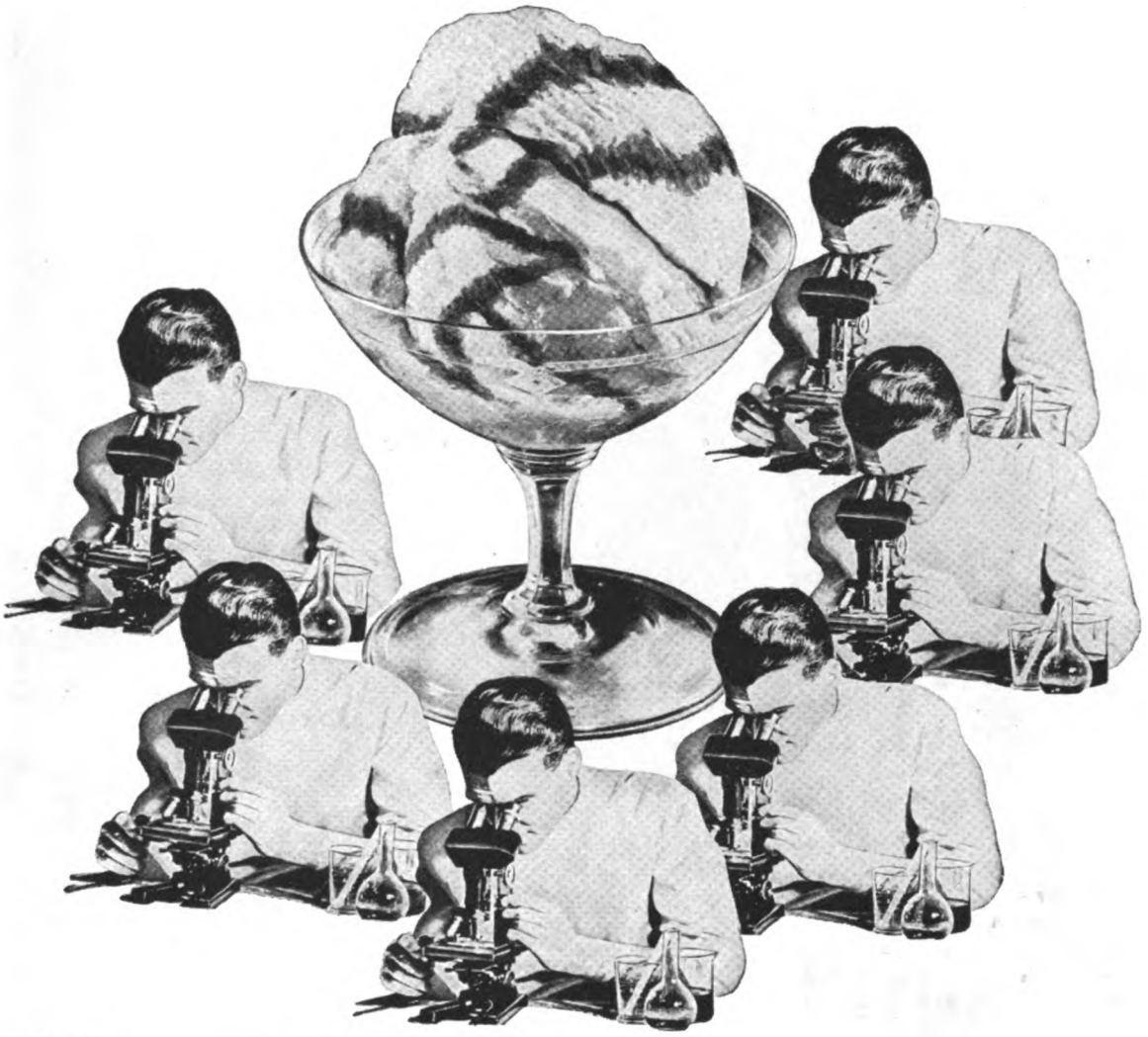
"We have lived for years in the presence of this ideal bacterial warfare agent, and it has never, so far as I know, been responsible for a major outbreak of disease. There are many mechanical and other difficulties in the way of successful bacterial warfare—despite its theoretical possibilities."

"What about such diseases as influenza, Doctor?"

"That is an interesting point and one on which we can only venture a guess. Twenty-five years ago influenza was a terrible scourge. At that time, however, it spread over the entire world and was about as dangerous to one group as to another. We know much more now about influenza than we did then. But there are points about diseases that many do not take into account as they should. For instance, diseases change. Scarlet fever is getting milder. In Europe, at least, diphtheria has been causing more trouble than it used to. We cannot be sure that influenza and its after-effects will ever again be as severe as they were in the last pandemic. Furthermore, there has to be a certain stage setting for a disease before it will rage in fury. About a year ago influenza broke out in a certain section of this country. There were those who expected it to spread over the entire nation like wildfire, but it didn't. We had the influenza virus and we had persons susceptible to it, but

(*Continued on page 368*)

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WHY CHEESE with PIE?

By GORDON A. SABINE

YOU'VE HAD a grand dinner, complete from soup and now on the way to dessert. The main courses have been cleared, and your choice for dessert is the old-fashioned but ever tasty pie—with cheese.

Why cheese with pie?

Your answer may be that it agrees with your taste. But cheese and pie just naturally go with each other, both on menus and on the charts which record what vitamins and how much of them you're supposed to have every day.

They are made of ingredients which fit into each other the way gears mesh. Let Dr. Conrad Elvehjem, biochemist and nutrition expert at the University of Wisconsin, run down the list:

"Pie is made with white flour," he begins. "That contains vegetable protein, which is supplemented by the cheese protein.

"Flour is low in riboflavin; cheese is rich in riboflavin. Flour is low in calcium, cheese is rich in it. Flour doesn't have very much vitamin A. Cheese packs a lot of the vitamin A."

There's one place cheese is low—vitamin B_1, which is thiamin. If your pie is made with enriched flour, it has the extra thiamin that the cheese lacks.

An inch cube of cheese—cheddar, not the cottage cheese variety—is about an average daily serving, and taken with pie it's an extremely convenient way of getting some of those vitamins about which nutritionists have known for only ten or fifteen years, but which our diets should always have had.

Such a serving, for instance, is a pretty good supply of calcium. Its two thirds of an ounce make up one fifth of the daily calcium requirements of the average adult. That cube of cheese has the equivalent of all the calcium in 5 ounces of milk.

Cheese is powerful in phosphorus, too. It's almost as good in that as in milk, and the average daily serving of two thirds of an ounce of cheese provides as much phosphorus as 5 ounces of milk.

In protein, this much cheese is almost as rich as 5 ounces of milk.

If your pie is made of almost any fruit, you're adding to its richness with vitamin C, in which cheese is low.

Connoisseurs appreciated cheese with pie long before we knew about

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how the pair supplied vitamins and minerals. Proof of that is an old cook book, now treasured in a University of Wisconsin library. It was printed more than a century ago. History says it first served the cooking needs of some of the pioneer settlers of America's midwest.

Men knew the taste of good food then, too, so perhaps that accounts for this note on the yellowed and torn pages—after an elaborate pie recipe.

"A bit of cheese served with this pie," it said, "will surely transform it into a gastronomical delicacy no one can refuse."

Why cheese with pie? Well, why not?

Walk Your Way to Health

(Continued from page 349)

position is a combination of the two, neither good nor bad.

What has posture to do with walking? To begin with, you miss half the joys life can offer you if your head is up in the clouds or directed toward the street beneath your feet. Try being comfortably erect, watching and checking on yourself at frequent intervals. If the muscles which control your posture have become a bit stiff and cause unwelcome pains, keep at it; slowly but surely nature will adjust you to your newly found physical position.

Hand in hand with correct posture goes the mileage you may put into your daily walking expeditions. For the beginner, a mile is sufficient. The experienced walker can gracefully stand four times as much. Walkers find that by gradually increasing the scope of their walk at the rate of an additional half mile each week, they are soon able to look a five mile hike in the face without wincing.

Walking expeditions should be made in early morning if possible, just before breakfast. They stimulate the jaded appetite, and after a few weeks a "toned-up" effect will be noticeable. Set the alarm clock at six or seven o'clock and start out firmly to cover the prescribed distance. The average person can finish a three or four mile walking

(Continued on page 381)

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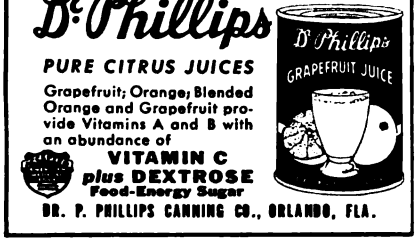
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AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St. Chicago, Ill.



THE SUN-RAYED CO., FRANKFORT, IND.

Bacterial Warfare

(Continued from page 364)

no grand epidemic resulted. The stage was not set. Just what conditions are needed to set the stage I cannot say, but I strongly suspect good hygiene gives us conditions unsatisfactory for the development of epidemics."

"You certainly believe in good health as a guarantee against bad health, don't you, Professor?"

"As I see it such a conclusion is inevitable, but that isn't the whole story. We are educated enough now in the presence of influenza to avoid crowds, to keep from getting chilled and wet, and to go to bed and call the doctor when we show symptoms. Influenza may break out and make our lot more difficult, but, as I see it, hardly as the result of enemy action. The same is true of meningitis, which is often important in training camps. It has been suggested that a carrier of meningitis might be introduced in our midst as a prisoner of war and so start an epidemic. As a matter of fact, every large aggregation of soldiers already has a number of carriers and one more would not be likely to make much difference."

"What is a carrier?"

"A carrier is a person who harbors disease-producing microbes but who at the time is well. Such persons are especially important in the epidemiology of meningitis of the communicable type and indeed of many other diseases. People are apt to think of all disease-producing microbes as equally invasive. That is not true at all. Bacteria which are capable of causing fatal disease in one man may be living harmlessly on the body of another. They may even have been living on the body of the man made ill for long periods before the circumstance arose conditioning the infection of the blood. The pneumococcus is far from rare in a healthy population, and many more people harbor the tubercle bacillus who are well than who are tuberculous. A few microbes are highly invasive, such as the gonococcus, the organism causing syphilis and the tularemia bacillus, to mention a few. Only a fraction of the persons who drink water containing typhoid bacilli will get typhoid fever, whereas a frank exposure to pneumonic plague results in almost certain illness from that disease. In other words, an epidemic of disease does not necessarily start the instant a few microbes are introduced into the environment!"

"What about the introduction of diseases of animals or plants which might destroy our crops and our animals? Wouldn't that injure us, and isn't it possible?"

"Of course it would injure us, and it might be possible. On the other hand, it takes a long time for such diseases to get going, and our Department of Agriculture has been very efficient in controlling such matters in the past. Also such procedures would violate an old principle of warfare."

"May I ask what principle?"

"The ability of a defeated nation to pay the victors for the beating it has received. If our wealth is destroyed how can we pay? I can understand the reluctance of some of the combatants in the present war with respect to the 'scorched earth' policy. The emergency must be great indeed for one to utterly destroy something valuable which he would ordinarily hope to possess again with the expected turn of battle. So it would be an act of extreme emergency before one nation would loose a pestilence on another nation which would reduce it to destitution—even if such a pestilence were available to be commanded."

"It seems to me that all you have said, Doctor Leyland, depends on one important point."

"What do you mean, Myra?"

"Wouldn't bacterial warfare amount to more for the enemy if the population attacked got all panicky, and paid no attention to the available measures for their protection, and failed to listen to those who could get the situation under control if given a chance?"

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"Yes, indeed—one of the most important factors! I think that bacterial warfare is not apt to succeed. At most, its action would be local. But it is certainly true that panic and serious disorders might develop a trivial situation into a disastrous calamity. The orderly use of our known principles of control would be necessary to keep the situation in hand. Anything more you want to know, inquisitor?"

"Yes, there is, and a very important point, too. What can we do to protect the armed forces against disease?"

"I'm glad you put the matter broadly as 'disease' and didn't restrict your question to bacterial warfare. The first thing to do is to be sure that the personnel selected for the services is fit. The men who defend our flag on land, at sea and in the air must be healthy, sound and vital. Then they must be carefully trained and seasoned before they are called upon to undergo the rigors of war. During this time they must be properly fed and housed, protected from the diseases of the present and adequately fortified against the diseases of the furture."

"What do you mean by diseases of the present?"

"Those diseases incident to the bringing together in training camps of large numbers of young men from widely different backgrounds —such maladies as measles, mumps, scarlet fever, diphtheria, pneumonia, influenza, meningitis and the like; and of course venereal diseases are very important."

"What are the diseases of the future?"

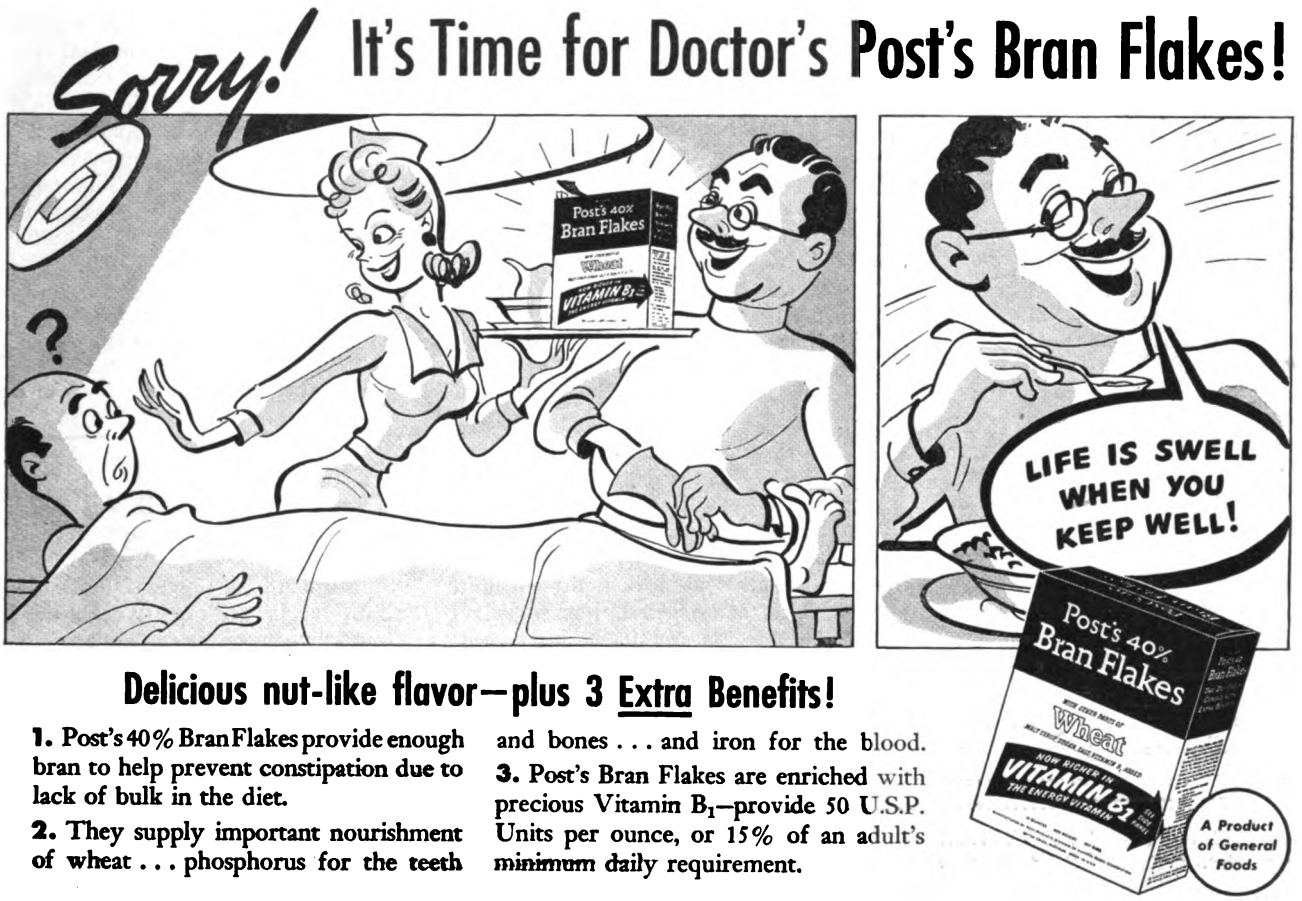
"This group includes the epidemic diseases the soldier may meet while campaigning in a foreign country and under the rigorous conditions of the battlefield, such as typhoid, cholera, typhus, smallpox, yellow fever, malaria, dysentery and plague. The venereal diseases are a continual pestilence, and wound infections, tetanus and gas gangrene must be taken care of."

"How does one take care of such things?"

"Where proven vaccines are available, they should be given. Typhoid, smallpox, tetanus, yellow fever, plague and cholera can be protected against in this way. Typhus vaccines should be used, for although still experimental they promise at least to keep the disease mild, if not to effect its actual prevention. Mention of typhus reminds me to emphasize that facilities for cleanliness must closely follow the army, for a corps clean and adequately deloused all the time is a corps protected against the disease that turned back Napoleon! Proper drugs must be available to combat wound infection and such a disease as malaria. The cleanliness and protection of kitchens, sleeping quarters and latrines, and the purity of drinking water and food must be assured. A suitable number of medical officers, nurses and attendants with adequate quarters and equipment must be available, and facilities for transport must be satisfactory. Some provision must be made for research, so that new developments and situations can be promptly and thoroughly followed up. I have omitted some details, but these general provisions should guarantee the health of the armed forces as far as it is possible to do so."

"That just about covers the matter, doesn't it, Chief?"

"Just about. Now back to work."



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The Nurse in Industry

(*Continued from page 340*)

After establishing friendly relations with workers' wives, the nurse may be responsible for introducing information on diet and food preparation, pamphlets on vitamins and calories, on home canning and budgeting. But this part of her work is dependent on the policy of the management, as some executives prefer to have the nurse confine her work to the plant.

The plant bulletin board is one place where industrial nurses have made their influence felt. One nurse put aside a half hour each morning to working on her bulletin, clipping items, arranging colorful displays. Her work has been so clever that the "Health Slate," as it is called, is a center of interest during lunch hours and rest periods. She admits quite frankly that she employs all the arts of propaganda known to her in this health education work. She frequently offers pamphlets and bulletins free to those who will stop in her office to get them, and the demand is proof of the number of men and women who read the "Health Slate" regularly.

Within the factory itself, the industrial nurse may work with a dietitian on menus for the plant cafeteria or lunchrooms.

In some factories, nurses have been instrumental in having rest periods established. The industrial nurse may be asked to assist efficiency experts in time and motion studies.

An industrial nurse in one large plant has had remarkable success with "bars." Her milk bars have had added popularity because she has decorated a two wheeled cart and installed a "milk maid" to tend it. This same nurse has popularized bars where fruit juice and graham crackers are sold for a few cents.

In addition to these duties, the industrial nurse has the more prosaic tasks which involve first aid and treatment of injuries. With the speed-up of the war program, accidents are on the increase, and this work may take up a good part of her day. If she is assisting a doctor, her day may be a very busy one.

She may help with regular physical examinations of applicants for work and those already employed. She will find herself cooperating with the dentists to whom the workers are referred. She may discover that she is a sort of doctor's secretary and keeper of medical files as well as nurse. Her preventive work may also mean that she is cooperating with the safety engineer in eliminating hazards and carrying on a campaign for safe working practices. In the factory, if recreational facilities are provided, she may find other duties.

The nurse who turns to industry as a vocation can lead a full life, full of professional satisfaction. She can make herself indispensable to efficient operation of the factory. As such she can command a good salary. She may find herself the important link between executive and employee groups. Her position will be difficult at times, but it will give her insight into the problems of both forces, labor and management. She may work slowly, but she will work surely toward better understanding between worker and employer. In any event, the "lady in white" is becoming an increasingly important figure on the industrial horizon.

SEVERE ADVANCED ACUTE APPENDICITIS

Sulfathiazole, a derivative of sulfanilamide, is an effective adjunct to surgery in cases of severe advanced acute appendicitis, Robert K. Anderson, Chicago, reports in *The Journal of the American Medical Association* in a conclusion based on results obtained in a series of 22 patients with advanced disease of the appendix who were treated by removal of the latter and with sulfathiazole medication.

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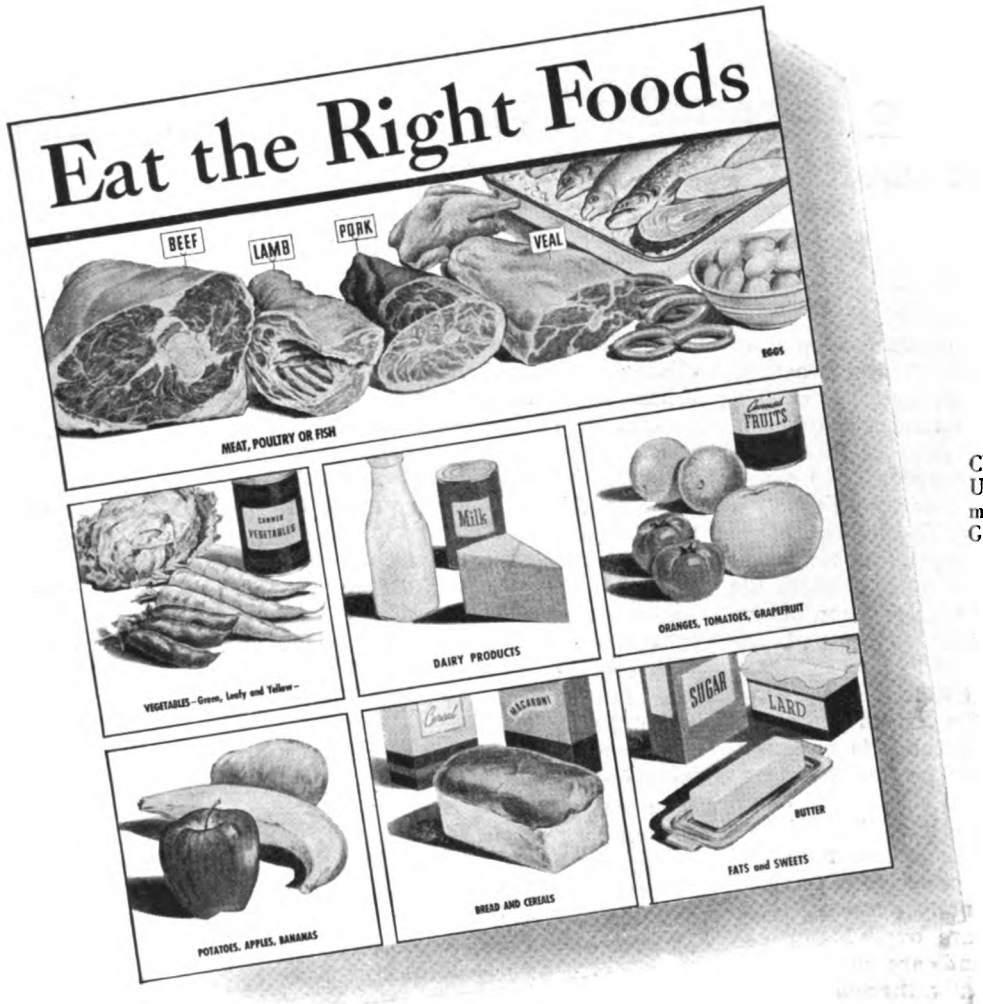


Chart Based on U. S. Government's Guide to Good Nutrition.

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MEAT, POULTRY OR FISH—one or more servings daily.

EGGS—at least 3 or 4 a week, cooked any way you choose or in "made" dishes.

VEGETABLES—Green, Leafy and Yellow—one big helping or more a day—some raw, some cooked or canned.

MILK—at least a pint a day (more for children) — or cheese or evaporated or dried milk.

ORANGES, TOMATOES, GRAPEFRUIT—one of these at least once a day.

POTATOES, APPLES, BANANAS—or other vegetables or fruits every day.

BREAD AND CEREAL—enriched bread, enriched flour, whole grain products, macaroni, spaghetti.

FATS, SWEETS and seasonings as you like them.

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The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

Better national health will hasten victory for America. To this end your government has specified the foods which should be eaten daily and in sufficient amounts to assure freedom from nutritional deficiency and to promote greater stamina and better resistance to many diseases. Follow this chart . . . use it every day in planning the meals for your family. Notice the specification for one or more servings of meat, poultry or fish every day. The reason for this recommendation is that all meats, including the thriftier cuts, supply complete, high quality proteins, B vitamins, and the essential minerals iron, copper, and phosphorus.

For "Quick Lesson in Good Nutrition," based on chart, send self-addressed stamped envelope to PR Dept., American Meat Institute, 59 East Van Buren Street, Chicago.

American Meat Institute
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The Tuberculin Test in Tuberculosis Prevention

(Continued from page 356)

been overreading—reporting reactions when they really do not exist. The degree of reaction is not an indication of extent of disease; it suffices to record that the subject reacts or does not react to tuberculin. A second dose of tuberculin should be administered to those who fail to react or whose reaction is questionable. The interpretation should be made at the same interval and in the same manner as in the first test. When no reaction occurs to the second dose, there usually are no living tubercle bacilli in the body.

The tuberculin test fails to reveal the presence of tubercle bacilli in the human body for the first three to seven weeks after they enter. During this period, there is no examination of the human body that will detect the presence of tuberculosis. Occasionally the test fails in persons who are overwhelmed by tuberculosis and are approaching death. Apparently, there is so much disease present that the tissues are desensitized and the test becomes useless. In some persons who have had tuberculosis, all tubercle bacilli die, and although evidence such as deposits of scar tissue and lime may remain, the tissues lose their sensitivity to tuberculin. Rarely do persons who have tuberculosis fail to react to tuberculin when properly administered. When there is no reaction to tuberculin, and tubercle bacilli cannot be found, one is never justified in making a diagnosis of tuberculosis.

Extremely important facts are gained from the tuberculin test. In the first place, if it has been properly administered and there is no reaction, it is excellent evidence that there are no living tubercle bacilli in the body. When a reaction is present, it indicates with a high degree of certainty that living tubercle bacilli are present. It is a test only for sensitivity to tuberculoprotein, and as far as is known there is nothing in nature taken into the body capable of producing and maintaining this sensitivity except living tubercle bacilli. Because it is only persons who have tubercle bacilli in their bodies who develop clinical tuberculosis, and since this disease is usually so slow and insidious in its development, every person who reacts to tuberculin, regardless of age, must be examined periodically for clinical forms of tuberculosis.

Every reactor to tuberculin has been in contact either directly or indirectly with a person who has tuberculosis in the contagious stage. Formerly, many tuberculin reactions in man were due to the bovine type of tubercle bacillus, but the veterinarians and their allies have so nearly eradicated tuberculosis from cattle in this country that a human being rarely becomes infected with the bovine type of tubercle bacillus. Other domestic animals, such as sheep, goats, horses and swine, develop tuberculosis which may be transmitted to man. However, veterinarians have done much to prevent this source of infection. Pets such as dogs, cats and even parrots become tuberculous and may transmit the disease to man. Therefore, a tuberculin reaction provides invaluable information, for it furnishes the trail by which one may often trace the previously unknown and wholly unsuspected sources of infections.

There is no test in the entire field of human and animal medicine that has been so extensively employed, with results so carefully checked by postmortem examination, as the tuberculin test. Among animals it has been used throughout the world since 1892, and in the United States alone between 1917 and 1939 more than 229,000,000 tests have been administered to cattle and more than 3,700,000 reactors have been slaughtered and examined with irrefutable proof of the specificity of this test. It is the tuberculin test that has made possible almost complete eradication of tuberculosis from the cattle herds of this country; it is the tuberculin test that has put an end to the great destruction of laboratory animals, particularly monkeys; it is the tuberculin test that is now finding unsuspected cases of tuberculosis in large numbers of human beings, many of whom are having their disease detected before any other evidence is obtainable.

Tuberculin testing has been placed on a practical basis in the last few years, largely through the pioneer work of Dr. Sidney Alexander Slater.

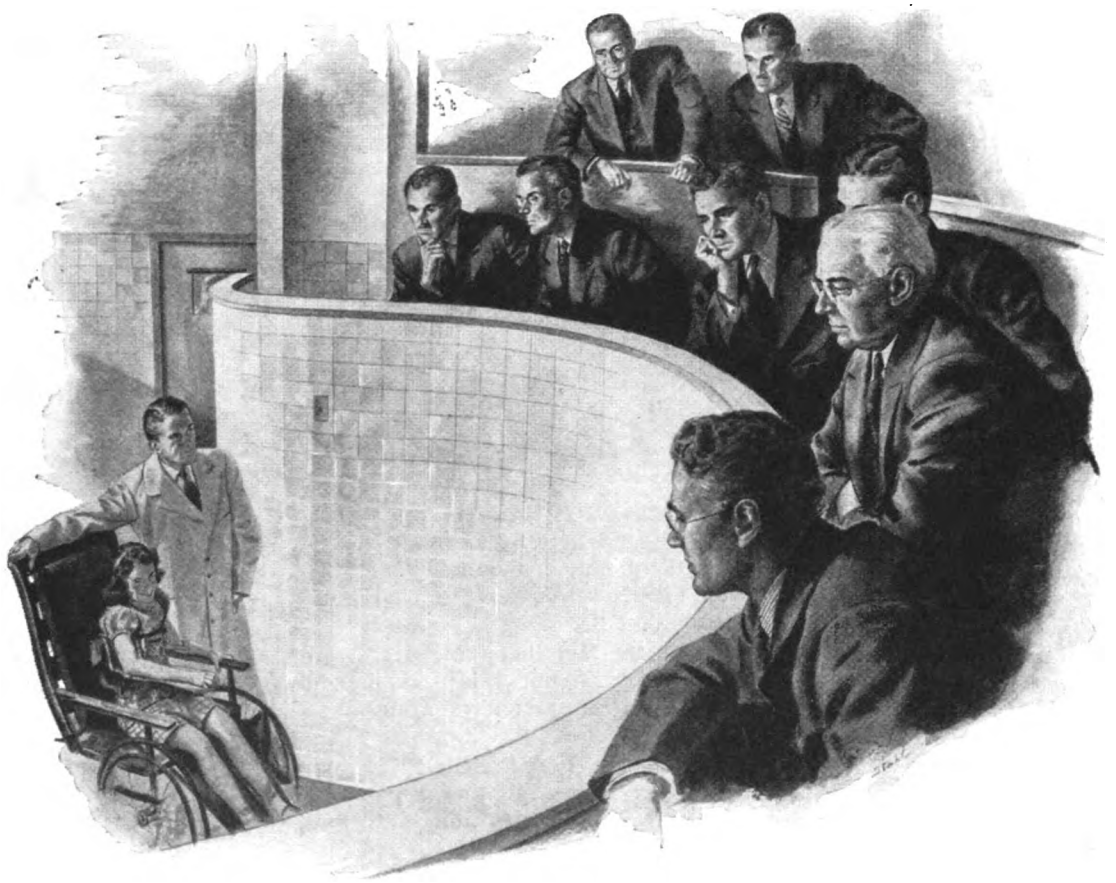
Dr. Slater was born in Virginia in 1884 and reared on a farm in King William County, 25 miles north of Richmond. He was a farm boy who spent most of his waking hours, except for those at school, in the open. He attended a little country school of one room.

When Sidney Slater was 17 he entered Richmond College, then a relatively small school with about 350 students; later the college was incorporated as Richmond University. He received the B.A. degree in 1907 and the M.D. in 1909 from the Medical College of Virginia, having taken some of his medical work while still an undergraduate. After graduation he obtained a position as contract physician for coal mines in a mining settlement in West Virginia. He did surgery in the town and had a small medical practice in the mountains surrounding the mining community.

He was making a good start at his chosen career of surgery when a breakdown with tuberculosis sent him to bed in 1912. He spent most of that year in a private sanatorium but also worked part time in the Virginia State Sanatorium. Under another doctor's direction he examined patients, and while still a patient himself he took charge of the sanatorium while the medical director was away. In 1913 he came north to Oil City, Pa., as head of the Grandview Sanatorium, a position which he held for six years. Dr. Slater comments that sanatorium treatment has changed a great deal since that time; bed rest, for instance, although considered an important therapeutic measure, was not as strictly enforced as it is today. Since 1919, Dr. Slater has been superintendent and medical director of the Southwestern Minnesota Sanatorium at Worthington, Minn.

(Continued on page 378)

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Whenever Medicine Finds a Better Way . . .

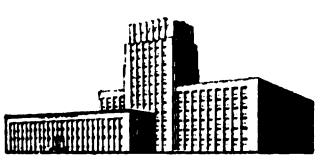
Long ago your doctor learned that while the fundamentals of medicine change slowly, better methods for the diagnosis and treatment of disease are constantly being developed.

At the hospitals in his community he takes part in meetings, discussions and clinical conferences where he and his fellow physicians share their medical experience. He may also take university extension courses, or attend a continuation school of medicine, to profit by the teaching of specialists highly trained in the newest techniques of medicine.

At the regular sessions of the various professional societies to which he belongs, he listens to medical papers written by his colleagues—he may write one himself occasionally. Timely and authentic articles in the medical journals to which he subscribes are of the utmost value to him.

It is this interest in his profession, this zeal in keeping up to date his own skills and techniques, that make your doctor the one person whose advice and counsel you should seek in all matters pertaining to health.

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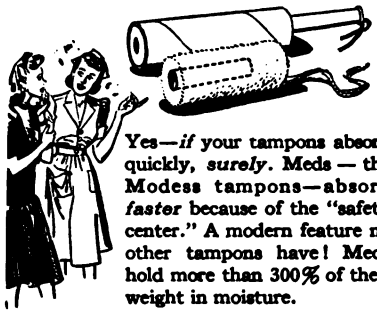
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QUESTIONS AND *Answers*

Tuberculosis

To the Editor:—(1) How can a person with definite tuberculosis who does not cough and has little expectoration have a positive sputum?

(2) Is the fact that some days a patient may not raise much compared with other days of any significance?

(3) I have heard that it is practically impossible for a patient with cavities and numerous soft lesions on both sides to recover without changing in any way his mode of life.

(4) Can you explain the fact that an x-ray shows further involvement while the patient's appearance remains good, and there has been no further loss of weight—all without really resting?

These are a few of the things we find very puzzling. We do not ask out of idle curiosity, but because we have a real desire to learn more about this disease.

A. P., Connecticut.

Answer.—(1) The positive sputum in that situation may be due to several causes: (a) A relatively dry cavity with a heavy fibroid wall and healing from within; (b) a close bronchus with bacilli leaking through; (c) a closed bronchus with ulcers in the bronchi or trachea; (d) a fistula into the bronchi from an old ruptured lymph node.

(2) Not especially. It may be due to an accumulation of fluid in a valvular cavity, and only at a certain level may the contents be evacuated. Or, as most commonly occurs, it may be due to emotional stress or slight infections of the respiratory tract.

(3) "Few things are impossible in tuberculosis, but not all things expedient." There are instances where severely ill and foolish patients have violated practically every rule and appeared to be "getting away with it." On the other hand, there are less severely ill patients who go on and die in spite of perfect care and obedience. In between these two extremes there are the great majority that may be benefitted by the many new treatment measures given by well trained physicians. The explanation is that nobody knows all the underlying pathology, bacteriology and immunity of every patient. In the fatal type bacilli are probably numerous and virulent and the patient probably a "susceptible" type, while in the other the opposite conditions prevail. Doctors generally take age, race, sex, and character of lesion into consideration, but even then miracles seem to happen, which means we haven't yet reached complete knowledge under any and all circumstances. The wise patient will follow orders given by the doctor as a hunter will follow his guide's direction to get out of the woods. The advice of the physician should be followed because he knows what is true in the great majority of cases and his advice is *always safe.*

(4) Under certain conditions cavities will insidiously spread by wearing away or ulcerating the wall from within faster than nature can rebuild it, and still the patient may appear to be doing well. This favorable condition is only apparent, or at the most temporary. If a cavity is progressing, it means that the treatment is inadequate to meet the needs, irrespective of the outward appearance of the patient.

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If rest treatment will not stop it, and perhaps under all circumstances, lung surgery should be used.

Why People Drink

To the Editor:—I would like to have some information along the line of why people drink alcohol.

L. S., Kentucky.

Answer.—Why men drink alcohol is a question that has baffled moralists, scientists and philosophers for many years. The modern explanation is seldom acceptable to those who believe in temperance education of the "ten nights in a barroom" class: the idea of scaring people so they no longer want to drink. Largely discredited, also, is the theory of an unquenchable appetite for alcohol.

One of the modern theories and perhaps the one most widely accepted is that some persons seek escape from reality in alcohol, just as others seek it in hobbies, social service, reform, certain forms of exaggerated religious zeal, narcotic drugs other than alcohol, or in extreme cases mental disease. In other words, alcoholism is a manifestation of a psychologic illness.

Usually the alcoholic is a frustrated person. For some reason, not always clear, he may be unable to achieve a satisfactory adjustment to life. He—or for that matter, she—may be married to an overwhelmingly dominating personality or may be afflicted with poverty, disease, inability to make friends, incapacity for satisfactory achievement, or other cause of deep-seated psychologic discontent. It is important to know that seldom or never does the alcoholic recognize the cause. When it is pointed out to him, he frequently fails or refuses to accept the explanation.

The psychologic factors in alcoholism probably account for the success of the organization known as "Alcoholics Anonymous," which can be addressed at Works Publishing Company, New York. This had a good deal of publicity in newspapers, and articles about it appeared in the *Saturday Evening Post* for March 1, 1941, *Newsweek* for Feb. 19, 1940, *Time* for Feb. 19, 1940, and *Scribner's Commentator* for January 1941. In brief, the program of Alcoholics Anonymous is to make friends with the alcoholic

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We think that you will come to prefer Arm & Hammer, or Cow Brand, Baking Soda to any dentifrice you have ever used after you have tried it for just a short while; that you will like its pleasantly clean after-taste and find that it aids the brush in restoring the natural color of your teeth.

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through the medium of persons who have been in the same fix themselves and have successfully overcome their handicap.

Obviously there is no point in teaching about the evils of alcohol as a drug to persons who already have developed alcoholism as a habit. In teaching young persons, it is best not to dwell on the more spectacular phases of drunkenness, but on the fact that alcohol is a narcotic drug which reduces efficiency even while it gives a false sense of achievement. At the same time, in moderation alcohol may be socially and personally beneficial to those who can be sure that they can achieve and maintain moderation. The greatest single argument against the use of alcohol, aside from the efficiency phase, is that one cannot predict with accuracy which person can use alcohol moderately and which one cannot. In general, however, it may be said that persons with unstable emotions and extreme nervous reactions are most likely to become addicted to the excessive use of alcohol.

We recommend the little manual "Alcohol—Its Effects on Man" by Haven Emerson, M.D., published by D. Appleton-Century Company, New York, and priced at $1.00.

White Teeth and Chewing Gum

To the Editor:—It was put to discussion in our General Science Class whether chewing gum benefits the whitening of teeth. On some gum wrappers this is stated as fact. We would appreciate it if you would clear this point for us.

S. D., Michigan.

Answer.—The natural color of the teeth is not white as is commonly supposed but varies from a pale ivory to a more or less definite "cream." The properties of the teeth which determine their natural shade do not reside in the surface layer of the enamel. Therefore, it is not an easy matter to change the color of the teeth. Sometimes this is done by the dentist, but he must use strong agents, such as 30 per cent hydrogen peroxide, which cannot be employed by the layman with safety. The phrase "whitening the teeth" as applied to cosmetic agents such as dentifrices should be replaced by the phrase "cleaning the teeth." In other words, dentifrices may aid the toothbrush in removing stains on the surface of the teeth. In other cases, however, the stains may be so stubborn as to require the services of the dentist.

So far as is known, it has not been established that chewing gum is of practical value in cleaning the teeth. Certainly it does not "whiten the teeth" in the proper sense of that phrase. In commenting on one brand of chewing gum the Council on Dental Therapeutics of the American Dental Association stated: "It is possible that chewing gum may remove food particles that are suspended in saliva, but the efficacy of chewing gum to remove food particles which adhere to the teeth has not been demonstrated by carefully controlled evidence."

Enforced Medication

To the Editor:—A doctor prescribed a bitter iron tonic for a child 2 years of age to be given in dosage of 1 teaspoon three times a day, and the child refused to take it except by force. The child, screaming and fighting, was held down and the bitter medicine dumped into its mouth. Would the physiologic benefits to the child be offset by the bad psychologic effects it would have on a child who was already very nervous and easily upset and anemic?

M. J. S., Wisconsin.

Answer.—Regardless of difficulties in its administration, the iron, if retained, is of physiologic benefit to the anemic patient. It is doubtful, however, that the tonic will be effective as a stimulant to appetite under the circumstances described by the inquirer.

This question raises the problem of medication for children. Basically it is a problem of discipline. As a rule, a child will accept willingly even if not enthusiastically any mixture that is prescribed, once it is convinced that the mother is determined to go through with it. Where the mother is oversolicitous and overindulgent, refusal becomes the rule. Too many parents predict defeat in this respect. The child knows it and takes full advantage.

After he has swallowed the first dose, nurses seldom experience difficulty in administering medicine to the "nervous" child. The child knows that he has to take it. He quickly comprehends the meaning of firmness and behaves accordingly.

The subject of this question is no doubt a bright child who thrives on maternal worry. The bitter potion which he steadfastly rejects (and who can blame him for it?) is only one of many items on his "no, no," list. This disposition, it may also be surmised, is probably responsible for his nervousness, his loss of appetite and his anemia.

The advisability of continuing to force medication of this type must be left to the judgment of the physician who knows the needs of the individual child. The mother should not let her sympathy interfere with the baby's recovery. Gentleness combined with firmness may soon obviate the necessity for administering the iron in the bitter vehicle. If the child begins to eat the regular foods prescribed for his age, there will be enough minerals to satisfy his physiologic requirements.

Operation for High Blood Pressure

To the Editor:—I have been advised to have a sympathectomy performed for high blood pressure.

Is there at the present time any medicine that may take the place of this surgery? What effects may I expect after the operation has been performed? Will it hinder my physical ability in years to come?

J. M., Illinois.

Answer.—The surgical operation for essential hypertension has not yet stood the test of time. For a reasonable period at least, however, sympathectomy appears to yield the maximum results of any treatment. Following operation, patients must continue to use the same precautions regarding blood pressure as they had used previously.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

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Increasing Efficiency of Hospitals

The constantly increasing efficiency of hospitals in this country is revealed in the twenty-first annual census of hospitals by the Council on Medical Education and Hospitals of the American Medical Association, published in *The Journal* of the Association. The census shows that "The average stay per patient in general hospitals has been reduced from fourteen days in 1935 to twelve days in 1941, an average saving of two days per patient. For all the 10,646,947 patients in general hospitals in 1941 the aggregate saving was 58,339 years. Figuring this saving at $4 a day, the cost of hospitalization for each patient admitted was $8 less than it would have been in 1935, the equivalent of a saving of $85,175,576 in hospitalization costs."

During the period from 1935 through 1941 the length of stay in governmental general hospitals dropped from twenty-two to eighteen days and in nongovernmental general hospitals from eleven to ten days. In general hospitals operated under federal auspices a reduction from thirty-six to twenty-one days was made, in those under state auspices from twenty-one to eighteen days, in county hospitals from twenty to eighteen days, in city hospitals from sixteen to fifteen days and in city-county hospitals from seventeen to twelve days. In church related hospitals the average stay dropped from twelve to ten days in the same period and in all nonprofit association hospitals from eleven to ten days. In hospitals operated and owned by individuals and partnerships the rate remained stationary at eight days. In those operated by corporations for profit it dropped from nine to eight days.

The census discloses a total of 6,358 registered hospitals, an increase of 67 over the number on the Register one year ago. The growth of hospital facilities for the past year was the equivalent of one 269 bed hospital for every day, Sundays and holidays included.

The capacity of registered hospitals amounts to 1,324,381 beds and 66,163 bassinets. There are 98,136 more beds and 4,224 more bassinets than there were a year ago.

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Experienced radio actors and actresses play the parts of your favorite characters in DOCTORS AT WORK, weekly broadcast presented by the American Medical Association and the National Broadcasting Company.



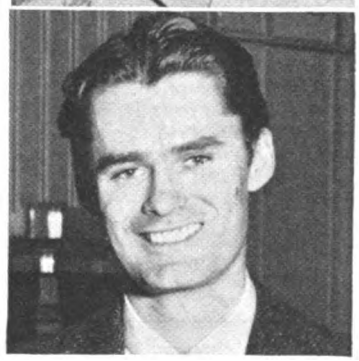
ED PRENTISS, who plays DR. TOM RIGGS, is a native born Chicagoan. He's had extensive experience in radio—announcing and taking part in well known NBC programs. His hobby is collecting sculptured dogs.



BETTY RUTH SMITH, who plays Tom's wife, ALICE, came from Wichita, Kan., where she gained her first experience in radio acting, writing and miscellaneous broadcasting chores. Favorite pastime: doing landscapes and portraits in water colors.



ELOISE KUMMER, who plays the cool and competent public health nurse, JOAN SHERMAN, is a native of Wisconsin—where she hopes some day to retire to a farm. Meantime, she performs for DOCTORS AT WORK and other NBC shows.



JOHN LARKIN is the temperamental young physician, DR. PAUL GERARD. He's a Californian who serves as announcer and actor on many programs.

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The Tuberculin Test in Tuberculosis Prevention

(Continued from page 372)

In addition to his work at the Sanatorium, Dr. Slater goes into the nine counties of his sanatorium district, gives lectures to the medical and nursing professions and public lectures in schools, churches and town halls to inform people how to free themselves of tuberculosis. Thoroughly convinced of the accuracy of the tuberculin test, he examined more than 1,600 girls and boys in rural schools and found that only 11 per cent reacted. The result of this work was presented before a large national audience in Atlanta, Ga., in 1924. At the Atlanta meeting there were a number of persons who returned to their home communities determined to test children with tuberculin to see whether it was really true that nearly 100 per cent were infected, as it had always been widely supposed, or whether their tuberculosis work had been effective and the result was already being reflected in the reduced number of infections among children. To nearly every community came the happy surprise of finding that large numbers of children were not reactors. Thus for the first time there was tangible evidence of the effectiveness of the tuberculosis control program in this country. Nearly every one took heart anew, for it was now obvious that the methods already in use were capable of reducing tuberculosis to a minor disease in this country, as had already been done with typhoid fever. Moreover, by testing the children of a community every five to ten years and checking on the decrease in reactors, they could determine just how much they had accomplished in tuberculosis control. The number of infected persons in any community is the only true criterion of the tuberculosis problem.

Dr. Slater's work did not end with finding children who reacted to tuberculin. He wanted to know where the persons with contagious disease who were responsible for the infections were located; he went to the homes and examined the parents, grandparents, farm hands, maids and all other adults known to have been in contact with these children. He was not forgetful of the fact that a good many hours of each day were spent in school, so teachers, bus drivers and all other members of the school personnel were included in his examinations. Throughout all of his work, he has been mindful of the importance of the family physician. Cooperation with family physicians throughout his sanatorium district has contributed importantly to the success of the tuberculosis program there.

In 1938 all the children, including high school students, and teachers of an entire county in this district were tested with tuberculin; only 5.2 per cent reacted. Moreover, in that county the mortality rate for tuberculosis is only 5.5 per hundred thousand of population per year. Slater is far from satisfied even with these figures, as he visualizes the district with only a small fraction of 1 per cent of the children infected with tubercle bacilli and no deaths from tuberculosis at any age. All that is necessary to realize this vision is the continuation of his work.

A car drives up in the yard outside a country schoolhouse, and a little flurry of excitement goes over the schoolroom—the doctor has come! The children know the doctor—he has been there many times before—and they are always glad to see him. Following the teacher's instruction, the children file down the length of the corridor outside the room, at one end of which has been arranged a table, a couple of chairs, notebooks, a bottle or two of antiseptic and a small medical kit. The children are not at all timid, and the small boys roll up their sleeves with a pugnacious gesture for the doctor's needle. The nurse who has come with the doctor scrubs a spot on each bared forearm with a piece of cotton, then the doctor makes a tiny prick with his needle, leaving a drop or two

(Continued on page 397)

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Are You Going to Die of Cancer?

(Continued from page 353)

It now becomes even more apparent why early detection of cancer is essential, because, strange as it may seem, the severe types may not produce early symptoms any more violent than the milder types. The trained specialist is the only man who can tell you which length of straw you have pulled from the hat. In a well organized surgical department the pathologist works hand in hand with the surgeon. A piece of tissue is removed by the surgeon and immediately examined under the microscope by the pathologist. Like a modern version of the ancient crystal gazer the pathologist can foresee, and here with truth, the future of the patient. Within two or three minutes he makes his report to the surgeon, and the latter uses this information in deciding whether operation is necessary and what operation is best.

Cancer is more frequent among women than among men, due to its common occurrence in the uterus and the breasts. In men the most likely spot for cancer to strike is the stomach. The location is, of course, one of the factors affecting the outlook, because certain areas are more inacessible, more vital, or closer to vital organs than other areas.

It might be interesting to pause for a moment and look back on the history of cancer and its prevalence. The English word "cancer" comes from the Latin word meaning "crab." The Romans used the word also to name this disease, with which they were familiar. The same malady was known to the Egyptians and is mentioned in the earliest writings of India. Birds, animals and fish, as well as man, have cancer. It occurred among the most primitive types, and all the present races of man are affected by it, although it is apparently more common among the civilized races, whose average life is longer.

Though babies are sometimes born with it, it is largely a disease of adult life, and the most dangerous age, according to a 1940



Man's Beauty Problem

Man's "beauty problem" is chiefly concerned with hair—that is, the hair on his head, which he hopes to retain*, and the hair on his face, which he wishes to remove with a maximum of comfort and a minimum of time and effort. . . . Everything in the Luzier line, with the exception of makeup preparations, is suitable *for him.* Our Hair & Scalp Service, Body Service, and Manicure & Hand Service are offered *to him* without fear of an affront to his masculinity. Men whose skins are sensitive frequently use lubricating creams and emollient lotions; and don't for one moment think it is "sissy" for a man to use an appropriate Cologne—one with a fresh, clean (not sweet) fragrance, such as *Luzier's Reveille.* . . . There are few things among his personal belongings that a man prizes more highly than a good sharp razor. It is essential to a quick, smooth, pleasant shave. Preparations to facilitate the use of the razor are of equal importance. . . . We manufacture three preparations especially *for him:* Shaving Cream (brushless variety), After-Shaving Lotion, and Face Powder for Men. Our Service Kit and Men's Travel Case make especially nice gifts for the lads in the services and for those busy business men who today are traveling far and wide in the interests of our country.

**While we sympathize with man's desire to retain his hair, we regret we have nothing to offer him for this purpose.*

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MODERN-MOTHER Nursing Brassiere protects because its sterilized, interchangeable pads absorb milk seepage and keep the breast sweet and wholesome. They are nonirritating and forestall the chance of infection. Scientifically designed, MODERN-MOTHER is not bulky, has an unusual uplift that supports milk-heavy breasts and relieves overstrained muscles.

- Maternity Brassiere, #627 has adjustable elastic back section to allow for increasing development during pregnancy as well as all the features of regular Nursing Brassiere. Sizes 32 to 44. $3.00.
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- Regular Style, #623. Sizes 32 to 44. $2.50.
- Streamlined Style, #629 has added sleekness, greater uplift and none of the familiar "harness" effect. Full cup shape and adjustable straps and back. Sizes 32 to 40. $2.25.

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Summary of Vital Statistics in Washington, is between 65 and 69. In the United States, 22,726 people between those ages died of cancer in 1940. The toll was second only to diseases of the heart. In all age groups, 153,800 people died of cancer in the United States in 1939, and 158,339 in 1940. This is about 10 per cent of the total deaths from all causes for that period and is exceeded only by heart disease. Deaths in the United States caused by cancer per 100,000 of population increased from 63 in 1900 to 120 in 1940—almost double.

How can this be, if we are, as we say, gaining in our fight against cancer? There are at least two reasons why this can be so: first, because cancer is recognized now where in years past it was not discovered. Many people have died without ever knowing that the disease they had was cancer; therefore, the real deaths from cancer may be decreasing even though apparently they are increasing. The second reason is that, due to the advances in medical science, people are living longer, and thus more people live to die of cancer now than formerly.

If we look at the few records available back in the beginning of the century we find that practically all patients seen with cancer were soon dead, no matter what was done. Indeed, they were so far gone when first seen that it was an achievement to bring a patient alive through an operation. But the medical profession, with undaunted courage and determination, would not call it a hopeless cause. Gradually, doctors learned how to recognize the presence of cancer earlier, where to look for its extension in the body for eradication, and how to remove the growth successfully without losing the patient in the process. They are not satisfied with their present results by any means, and fortunately so, for with dissatisfaction comes progress. Every physician in the United States is conscious of cancer, puzzling over it, trying to put two and "x" together. Singly and in groups they go over the problem, studying it from various angles, groping in the dark and in the dim light. The American College of Surgeons regularly maintains a staff of medical men who advise and assist in the establishment of cancer clinics and inspect clinics that are already established.

The United States Public Health Service has recently built a beautiful building in Bethesda, Md., just outside Washington, which houses the National Cancer Institute. It is a laboratory building in which research in cancer is constantly being carried on by doctors in the Public Health Service. Four times a year a small group of men who are particularly interested in cancer and who have made contributions to the study of the disease from many different angles gather here from all over the United States. They are called The National Advisory Cancer Council, and they strive to organize the fight in such a way that the great resources and energy available in the medical profession and the United States Public Health Service are used to the best advantage and with as little duplication and wasted effort as possible.

To get relevant statistics on the real progress made one must follow the results in particular groups of patients who have had treatment. This can be done only where continuous records have been kept for a long time. Table 2 shows such results, in terms of "five year cures," for patients treated thirty years ago and in subsequent years.

Since early discovery and treatment are essential for arresting a cancerous growth, the problem concerns both doctor and patient. For the doctor, early cancer may be difficult to diagnose. The symptoms are often vague, dissimilar, mild—even trivial. There may be no acute pain at first to compel attention and action. The busy doctor must be constantly on guard lest he brush aside such symptoms as of minor importance and occupy himself with more pressing matters. Even after he has used all the instruments at his command to help him in his diagnosis, the x-ray, the fluoroscope and any other mechanical aids he may have, he himself must have the training, experience and judgment necessary to analyze his findings and advise wisely.

The second problem concerns the patient. Here the important question is, "What are the signs and symptoms which may indicate cancer?" The following list of symptoms is taken from a pamphlet printed by the American Society for the Control of Cancer.

Mouth, Lip and Tongue: Any sore that does not heal within ten days to two weeks. Any lump or

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local thickening. On the tongue, persistent white areas, especially in the case of smokers.

Throat: Difficulty in swallowing or hoarseness lasting for more than two weeks which cannot be explained by a cold or other direct cause.

Stomach and Intestines: Distress following eating, especially in those of middle age or older who have not been aware previously of such a condition. Sudden or marked loss of weight without any recognized cause. Distaste for meat. Alternate periods of constipation and diarrhea with no particular change in diet to account for it. In the case of the lower intestine or rectum, the appearance of blood as a rectal discharge or in the stools.

Breast: Any lump, lack of symmetry, persistent soreness of the breast or colored discharge from the nipple.

Uterus: Any irregular bleeding at any time during life.

Skin: Any lump, or sore that does not heal in ten days to two weeks. Any mole, wart, or wen which develops tenderness, changes its texture, or begins to grow.

Many of these conditions will turn out not to be cancer, but only a careful physical examination by a doctor, checked by a microscopic examination, can determine the difference. Nature has no patience with those who are careless with cancer.

My worry is not for the neurasthenic man or woman, for they have fled to the doctor's office long since. But the danger threatens all those others who "grin and bear it," who have long since ceased to worry or complain about every ache and pain, who know that life is not a bed of roses and that many things must be borne in silence. Perhaps for many years they have suffered from some chronic ailment or other—an allergy to certain foods, an irritable colon, or just a "weak stomach." This condition they have accepted long since as their lot in life, and when the new symptoms appear, these may be so similar to the old as to be indistinguishable. Or the new symptoms may be accepted as expected signs of advancing age—certainly not matters to bother a busy doctor about! My worry is that virtue, patience and fortitude may recoil on their owners and strike them down. Only by being informed and on the alert can we hold the first line of defense against cancer. Some of us will and some of us won't, and thus do we, the people, live and die and get made into statistics.

Walk Your Way to Health

(Continued from page 367)

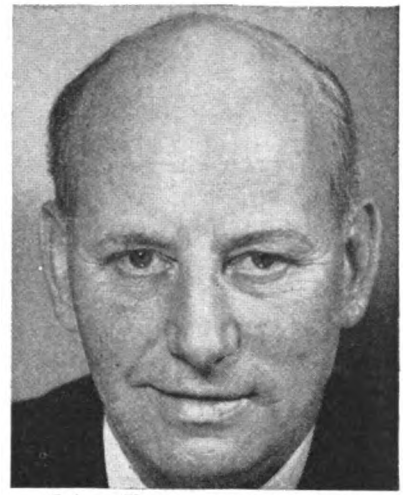
tour in a little more than an hour at the most, which means that you will reach home in time for a satisfying breakfast.

If it is impossible to walk in the early morning hours, the next best walking time is late afternoon, at four or five o'clock, when the sun is fading and its heat is no longer severe. Where you walk doesn't really matter; the important thing is to set yourself in motion at a regular time each day. Regular hours for the hike are essential until walking becomes a fixed habit, unbreakable and enjoyable.

Every Saturday or Sunday afternoon may be made a family hiking occasion, with the youngsters and the rest of the family journeying to a not too distant park or mountain. A picnic lunch packed on the back will add to the enjoyment of such weekend festivities. Boys and girls who learn to walk while young will not dread it when approaching manhood or womanhood. No matter how enthusiastic a sports fan your youngster is, he may be expected at first to shy away from anything as simple as walking—so don't be backward about inviting your younger members and their friends along for the day.

On your expedition, you will notice many curiosities of nature, some new, others familiar, but all keeping your mind attentive and free of the daily wear and tear so common in our complex modern lives. By all means, take a walk—today and every day!

ARE YOU THIS BALD?



*Below—The same man wearing a patented MAX FACTOR HAIRPIECE



IF YOU WANT to overcome your unsightly baldness with a good-looking, full head of hair, by all means investigate an undetectable Max Factor Hairpiece.

HAIR AGAIN in place of baldness! Hair that looks and feels as if it were actually growing on your own head! That will be your everyday experience when you wear one of these remarkable, patented Hairpieces. So don't delay longer.

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The President asks You to IMMUNIZE your Children

ROPER* survey reveals WIDESPREAD FAILURE of American mothers to safeguard their children against Smallpox and Diphtheria

TODAY, in this war crisis, immunization is more important than ever before—so vital that the President of the United States in a recent Proclamation asked that . . ."all children over 9 months of age be immunized against SMALLPOX and DIPHTHERIA by May 1st."

Have you had your children immunized against these diseases yet? If you haven't, *you should do so immediately.*

☆

In a recent, nationwide Roper survey, 50% of all mothers with children under 5 years report they have never had a single child vaccinated against SMALLPOX!

Moreover, 34% of these mothers say not a single one of their children has been inoculated against DIPHTHERIA!

Unfortunately many mothers mistakenly believe these diseases are virtually extinct

The facts show *more cases of smallpox are reported by the United States than any other country, except India!* And yet protection against smallpox is open to all who go to a physician for vaccination—a safe, simple procedure which takes only a few minutes.

Diphtheria has been decreasing—*but in the past 10 years at least 392,000 people in the United States were stricken with diphtheria . . . nearly one of every 10 died!*

The Roper survey shows mothers believe in immunization. But, unhappily, the majority do not appreciate the importance of having their children *immunized during infancy* and *reimmunized at proper intervals* to keep this immunity effective. All too many mothers say they would not have their children inoculated until an epidemic arose—or until their children were exposed to the disease.

To postpone calling your physician until there is an epidemic or they've been exposed is extremely dangerous. Remember, your unprotected child may be one of the first unfortunate thousands stricken before it is recognized that an epidemic prevails!

☆

How recently have you given your physician a chance to advise you about immunization?

Many mothers report they will have their children immunized when advised to do so by their physician. In this war crisis with its influx of refugees . . . mass movements of the population . . . crowded defense areas —there is no more important a time to consult your physician than *right now!*

*Elmo Roper, national authority on public opinion sampling, conducts the *Fortune* survey. In his presidential surveys he forecast the election of 1936 within 1% and the election of 1940 within ½ of 1%.

ARE YOU SURE YOUR CHILD IS PROTECTED AGAINST SMALLPOX AND DIPHTHERIA?

The following statements are broken down according to child age groups. Unless you can say "Yes" to those applying to *your* children, you should *immediately* take your children to your physician.

FOR INFANTS . . .

I had my child first vaccinated against smallpox between 3 and 12 months of age—or at least before the age of 3 years. Yes ☐ No ☐

I had my child given an initial inoculation against diphtheria between 9 and 18 months. Yes ☐ No ☐

FOR CHILDREN STARTING SCHOOL . . .

I had my child revaccinated against smallpox before going to school or at 6 years of age. Yes ☐ No ☐

At 6 years I had my child given a Schick Test to indicate susceptibility to diphtheria. Yes ☐ No ☐

FOR CHILDREN 12 AND OVER . . .

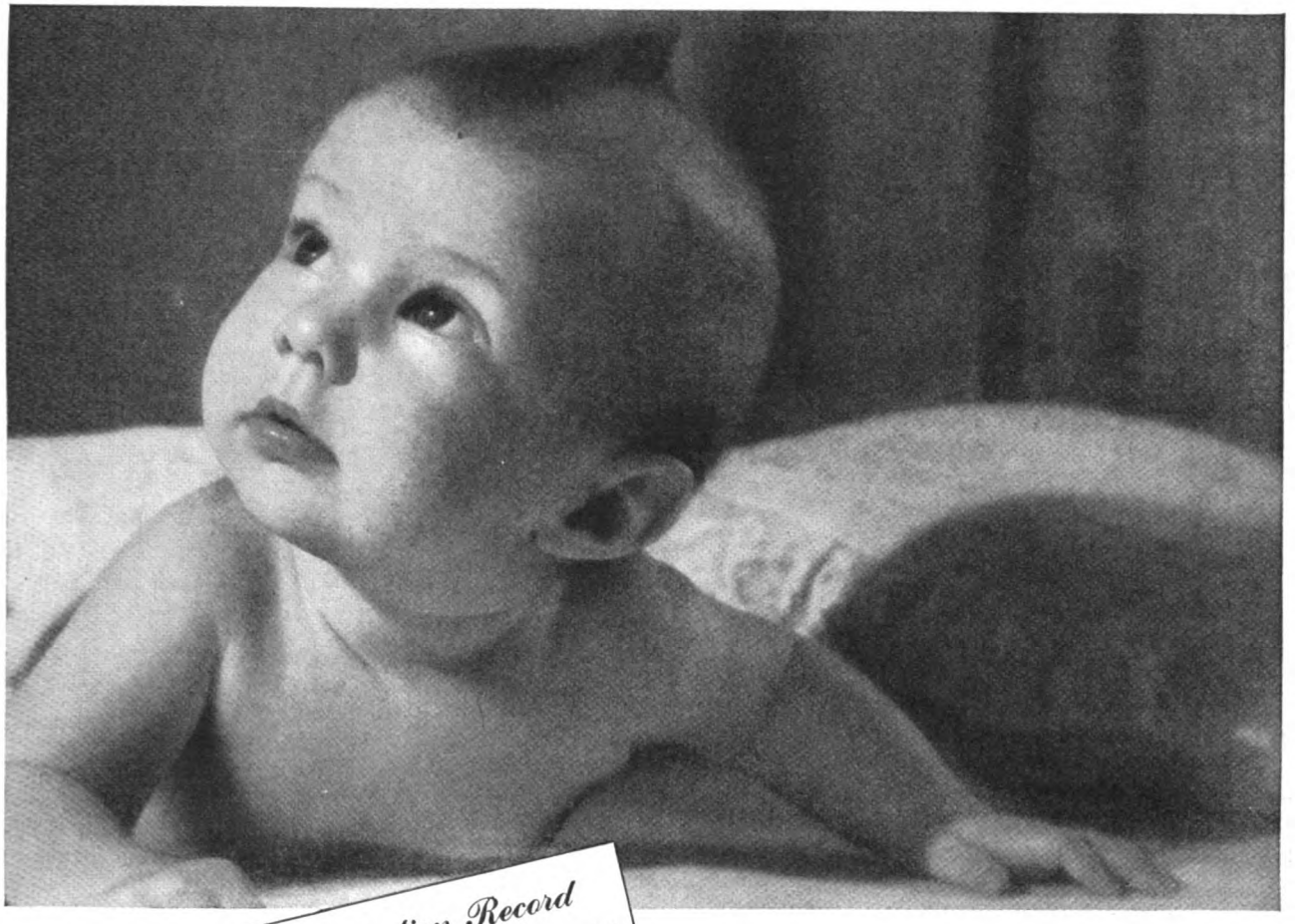
I again had my child revaccinated against smallpox at the age of 12 years. Yes ☐ No ☐

At 12 years I had my child given a second Schick Test to indicate susceptibility to diphtheria. Yes ☐ No ☐

When either of these Schick Tests showed susceptibility, I had my child reinoculated against diphtheria. Yes ☐ No ☐

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against SMALLPOX and DIPHTHERIA *by May 1st!*





Many physicians are making an Immunization Record *available to their patients*

An Immunization Record Card, when properly filled out by your physician, will materially aid you who want to give your children the benefits of complete immunization protection. A card for each member of the family will tell what diseases each has been immunized against and *when* and *what* reimmunization will be necessary.

See your physician for these cards *today!*

An Immunization Record Card is supplied to the medical profession by Sharp & Dohme, Philadelphia, Pa., makers of Pharmaceuticals and Mulford Biologicals, as part of their endeavor to aid in the prevention of communicable diseases.

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By GEORGE M. LOTT

FEEDING PROBLEMS



Feeding habits formed in infancy may profoundly affect the child's behavior in later years. The importance of proper early training in feeding and associated habits is explained in the first of Dr. Lott's two articles on "Feeding Problems."

PARENTHOOD is without doubt the most important calling today. Child care and training, with the molding of character into mature self reliant adulthood, may be the hope of this troubled world. Only a stable, well knit character can stand up under reverses and disappointments—or for that matter too much success and prosperity. The character of our rising generation therefore may hold the key to the future of America. The importance of parenthood cannot be overestimated.

INFLUENCE OF EARLY FEEDING HABITS

One of the most important problems facing mothers and fathers is the training of infants. Character development begins in infancy. Early feeding habits tend to have a profound influence on the child. At birth we have certain potentialities, which are determined by heredity. Contact with the outside world furnishes the stimuli which modify the physical, intellectual and emotional elements of growth. All combine to influence the form not only of our physical body but also of the various characteristics which differentiate us from others.

The newborn infant seems totally helpless. However, it can suck or nurse, make vocal noises, stir about and eliminate. Naturally these powers, limited as they are, assume great importance to the baby. Mothers soon learn that they are dealing with a personality. They can coax but they cannot make their child nurse, stop crying, or eliminate. It does not take long for the offspring to realize that these abilities can be turned into powerful weapons to more or less control a situation. When they want more attention they can cry or refuse to nurse. When they want to irritate their caretaker they can empty their bowel or bladder. The more anxious or worrisome the mother the more potent these functions become. Even casual observation reveals that infants express themselves without inhibition. They even enjoy the sense of power which enables them to upset those about them. Here are the first clues to the importance of handling feeding calmly and diplomatically.

NATURE OF FEEDING PROBLEMS

What do we mean by feeding problems? They include mild manifestations such as occasional loss of appetite, special dislikes and finickiness. The liking of certain foods and the practical exclusion of other articles in diet are called food fads. Dawdling and picking are annoy-

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ances within the experience of any family. If the condition becomes frequent or periodic, food refusal occurs. Easily upset stomachs, vomiting and chronic constipation may appear. Almost invariably other behavior disturbances are associated with feeding problems. Restlessness, irritability, negativism, fearfulness, inadequate social contacts and either seclusive or excessively aggressive tendencies are the most common. The child with these handicaps is unhappy. Discontentment is prominent. If properly managed, the milder forms of this complaint pass away. If unwisely handled, the disturbance may become worse and tend to become prolonged or fixed.

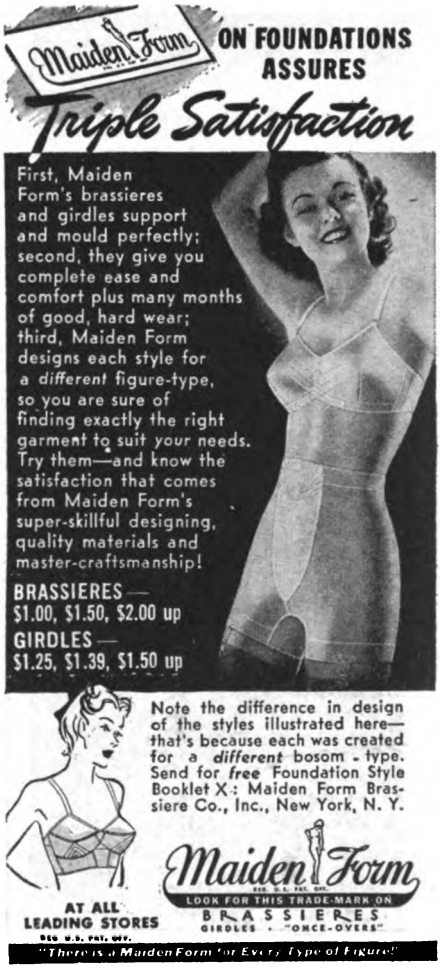
EFFECT ON NUTRITION

These troubles are upsetting to the home, have an effect on nutrition and, in association with other habit training, have a potent influence on personality behavior. Disturbed mothers are distressed and say, "Oh, Doctor, I can't get my child to eat." One abnormally overanxious, solicitous mother, after several years of difficulty, sought advice about her 6 year old boy, John. She was helped to restrain herself and finally was able for a time to ignore the feeding problem. When her anxiety became overpowering, she had to lock herself in her room. Daily encouragement was necessary to carry out this regime. On the fifth day the mother was hysterical and the father telephoned her report that the boy had eaten absolutely nothing for five days. Occasionally he drank some fluids. Investigation revealed no loss in weight, a juvenile attitude of gleefulness and an interesting report from a neighbor who lived several blocks away. This neighbor had been thinking of reporting the case to the Society for the Prevention of Cruelty to Children. John had been coming to her house to play with her son. He had seemed ravenously hungry and consumed large quantities of food when her children had their customary mid-afternoon lunch. John had even told her that his mother did not give him enough to eat. The main issue at stake was apparently a contest of wills between the mother and the child. John was a fairly normal boy, but very negativistic if coerced.

Prolonged, irregular, unbalanced food intake is bound to have an effect on nutrition. The child who wants all sweets and picks at the rest of his food frequently gets inadequate protein or vitamin intake. Lowered resistance to infection and poor weight gain result and may start off a train of chronic illnesses.

Child guidance clinic studies of feeding problems have revealed that the combined effects of exaggerated methods of habit training—that is, training in habits of eating, sleeping, and eliminating, have a profound influence on personality development. We have seen the negativism in the case of John and glimpsed some of the maternal influences which contributed to the boy's handicapping negativism.

Before we attempt to go further into the apparent effect on personality, a review of the normal characteristics of developmental phases will be helpful. We can then not only better understand the contributing causes of feeding problems, but also get leads as to their prevention and cure. Food hunger and the sucking action arise from the fundamental instinct of self preservation. Nursing and eating are largely reflex automatic motor activities normally present at birth. We can see from the outset, therefore, that in health little aid is required. The taking of nourishment is ordinarily charged with satisfying, pleasant emotions. In sickness, appetite normally fails. The nursing period lasts from six to nine months. Weaning from the breast or bottle is usually accompanied by some protest which can be safely disregarded. The taking of semisolid or solid food is a new experience requiring at first the help of the mother. The child can feed itself as soon as it is able to handle a cup and spoon, usually at from 12 to 18 months. Mary, age 15 months, had been attempting to use a spoon with occasional success. One day the mother was in a hurry and tried to resume spoon feeding. The youngster refused the food and had a temper. The mother was quite irritated but wisely put down the spoon and walked away. To her surprise Mary picked up the spoon and happily started to eat, spilling



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very little. How many times we hear that phrase, "I want to do it myself!"

TOILET TRAINING INFLUENCE

It is important to note that toilet training occurs about this time, properly beginning about the ninth to the eleventh month. There is an expectation of usually attaining day control of the bladder at the age of 2 years or less. Night control of the bladder comes about half a year later. Full control of the bladder may be expected in the fourth year. How many mothers unwisely try to advance these attainments? Struggles over these functions between the mother and child are potent influences reinforcing those associated with simultaneous training in feeding, dressing and washing.

The ability of very little children to select the foods which meet their physiologic needs has been tested. A number of years ago Dr. Clara M. Davis of Chicago had the courage to test a group of newly weaned babies from 8 to 12 months of age. She allowed them to crawl about three times a day selecting their own food from all types displayed. A careful record was kept of what each child ate. Over a period of six months, it was found that during a given time each youngster selected a balanced diet. One meal might be made entirely of one food and the next meal of another. But it is the daily or weekly intake that counts. The children rejected indigestible foods. One baby, showing signs of active rickets, even cured itself! The appetite seemed to guide this infant to the foods containing vitamin D. If these findings are accepted, there is no reason why the undisturbed appetite preferences of a normal youngster cannot be followed within reason. This is, of course, providing that no feeding problems have already distorted their appetites. There is probably no real reason for forced feeding, save under conditions of severe illness.

With the above review of what is to be expected of the average child, we may proceed with the consideration of the possible effects of eating difficulties on the personality. In Benjamin Franklin's autobiography he speaks of some fellow travelers on long ocean voyages being made unhappy because they could not get their accustomed special foods. Those who were picky and had food fads tended to be particular and fussy about other things. He recommended that one should early acquire the habit of paying little attention to the food, but eating what was put before him.

Food refusal may have deep significance. To the child, early feeding satisfactions mean much in the development of a feeling of security. A feeling of security is one of the early corner stones of personality development. Without adequate early security we find that people do not develop really mature personalities. The psychologic equation of food and love was discovered by early investigators. Dr. Alga Lurie of Chicago says, "The child whose dependent needs are not adequately met cannot face growing up with any confidence or eager anticipation." When so frustrated, the child may not only revenge himself by food refusal but also seek to compel special efforts on the part of the mother. He compels her to acknowledge his dependence. The rejection of nourishment may mean to him a protection from growing up emotionally and from the dreaded assumption of more adult responsibility. If this process is continued and combined with other types of later mismanagement, various adult handicapping character inadequacies may appear. The later development of neurotic traits is facilitated if the child is made to feel excessively guilty over the hostility engendered during feeding difficulties. Food refusal therefore can be in part a form of self punishment. For example, a stomach easily upset by the emotions and even neurotic vomiting may result. One young boy frequently would regurgitate when upset. It seemed that he could almost vomit at will. He tried to be possessive of a mother who largely rejected him. When she displeased him he could throw up. The emptying of his stomach was a powerful weapon. It compelled his mother to wait on him. He also punished himself for his resentment to his mother.

LATER INFLUENCES

Far-reaching problems can develop. James was a 16 year old boy, the youngest of four children. Chronic, prolonged, frequent food refusal had occurred in reaction to abnormal oversolicitude and forced

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feeding. His mother overevaluated not only feeding but also schooling and education, of which she had had very little. Later in adolescence the boy was much in conflict with his mother's anxieties. She wanted him to have the education she had not had. Without realizing it, James transferred his early food refusal to refusal to learn. He failed grades repeatedly although he had good intelligence and vainly tried to study. Some psychiatric treatment made him conscious of his underlying motives. It was quite clear that the mother suffered more than the boy did because of his school failure.

We have seen that infants are endowed with certain automatic functions at birth. Although helpless they can nurse, vocalize, move and eliminate. Further, they cannot at will really be forced to perform these acts. If not wisely managed it can utilize them as weapons and defenses, and lasting imprints on the personality are likely. We have had glimpses of ways in which they develop. We can now readily recognize the importance of feeding problems and associated potential effects on the personality. The mental hygiene aspects of the management of feeding cannot be overemphasized.

Spots on the Baby

(Continued from page 333)

means indicative of carelessness or failure to take the necessary steps in effecting prevention: the contagion may spread rapidly in spite of all efforts to control it. Fortunately, the disease in most cases is not serious and disappears within a few days when proper treatment is undertaken as soon as the eruptions are noticed. Several successful treatments have been developed in recent years; careful antiseptic methods to prevent the unnecessary spread of the infection to other parts of the infant's body is the first essential of all effective treatment.

The appearance of impetigo on a newborn baby is always a source of anxiety to the parents, and sometimes it is the occasion for angry criticism. Doctors and nurses are aware of the devotion felt by fathers and mothers for their babies; most doctors have children of their own, and their concern when their youngsters are sick is just like that of others! While it is understandable that anxious parents, looking for some one to blame, should find fault with the hospital, it is sometimes hard to be patient with such parents whose infant has developed lesions of impetigo when there is no other baby in the nursery from whom it could have been infected! When a baby is born with spots which resemble impetigo, some hospitals make a practice of showing it to the father immediately—to make certain that he understands the possibility of infection at birth and does not later place the responsibility on the hospital. When the grandmother is at hand it is well for her to be informed at once also; otherwise she may interpret the assurances of the father that the spots were present at birth as evidence of the lack of understanding of the mere male in matters pertaining to babies!

Like other humanly managed institutions, hospitals are not infallible, nor are chance infections in hospital patients impossible. Doctors and hospitals, working together, have made the birth of a baby a safe procedure for both mother and child, but complete protection from every possible risk is not yet practical. Perhaps some day a method of immunization may be found which will abolish this particular form of infection; when that time comes, physicians and hospitals everywhere will be quick to adopt it for the protection of their patients—just as they make available today the best methods and practices medical science has developed for the prevention and treatment of all diseases.



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HANDICAPPED

III. THE HARD OF HEARING CHILD. ***Valuable information to help parents recognize that a child has hearing difficulty and to guide them in the special training the child needs.*** **By RUTH E. BECKEY**

WHAT is to be done for the child who does not hear as well as his playmates? How are you to know that your child has difficulty in hearing? These are among the numerous questions which enter the parent's mind when he considers his child's hearing ability.

Not until one loses his hearing does he realize the importance of it in his daily life. With no hearing, speech cannot be heard and may therefore be learned only with great difficulty; noises cannot be heard, warning the person of danger; music and singing of birds cannot be heard. From the standpoint of social activity, the hard of hearing child lives somewhat isolated from his playmates.

Hearing is more closely related to speech than to any other function of the body. The main difference between deafness and the "hard of hearing" condition is in the methods used in speech acquisition. The hard of hearing child may be slow in learning to talk and may even develop defective speech sounds, but he does learn speech through hearing others talk, whereas the deaf child with no hearing at all has no conception of speech. Deaf children usually were without hearing before speech was learned or were deaf before they were born. They can think only in terms of pictures and sensations. As a result speech has to be learned by special methods taught by experts in the field.

All degrees of hard of hearing conditions exist. Some children have less than 15 per cent loss in both ears, and yet this small loss has been found sufficient to cause speech difficulty. One young boy came to the speech clinic at Ohio University with a speech disorder in articulation which made his speech unintelligible. Asked to read a simple story in the reader, he mumbled as though he knew how to read. However, he grunted only the vowel sounds, indicating few consonants. A hearing test was made, and his hearing loss was found to be only about 15 per cent, with greater deficiency in one ear. However, if one ear had been perfectly all right, speech could have been learned satisfactorily. He had simply been losing all the high-pitched sounds, which include almost all the consonants. With special help, the boy learned how to talk distinctly.

Several surveys have indicated that the hard of hearing form the largest single group of handicapped children in the country. It has been estimated by the American Society for the Hard of Hearing that one million children have some degree of auditory impairment. This estimate does not include the deaf, who have no hearing at all. The White House Conference found that about 300,000 of these children were handicapped severely enough to need lip-reading lessons. One of the largest surveys in the country recently was made in New York City, where more than 11 per cent of the children were found to need some special attention. Because hearing handicaps which involve only 15 to 25 per cent loss do not make the child appear abnormal, some of these children are not discovered as early as necessary for their proper guidance. Probably 5 or 6 per cent of the school population have hearing defects which are not receiving any attention.

The most help for the handicapped in the auditory field has been extended to the deaf and to those with more than 25 per cent hearing loss. It has always been more dramatic to help the ex-

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CHILDREN

tremely handicapped—letting those who have slight difficulties struggle by themselves. As a result, very little has been done for the hard of hearing child. He often is sent to state institutions for the deaf, where he has to associate with those much worse than he is. He may be transferred to a day school where lip-reading is taught to the deaf. After a time, he returns to the regular school. In some of the larger cities, the school systems may have a teacher who is able to care for the hard of hearing and give speech correction. Fortunately, some states are enacting legislation which will take care of handicapped children, including the formerly neglected speech-defective and the hard of hearing child.

If the school is to follow a well organized program for the hard of hearing children, the following procedure should be followed: Group hearing tests should be given every year to discover the child who may develop some hearing deficiency, medical attention should be given to each child after any illness involving the head, lip-reading classes should be organized for those children with hearing losses of more than 25 per cent and speech correction should be provided for those who have defective speech sounds and monotonous tones. A large percentage of the hard of hearing children also have speech defects, since they have had trouble hearing all sounds correctly. This gives the child two handicaps to overcome.

Before the child goes to school, the parent may wish to know what procedure to follow to ascertain if the child needs help. In the first place, the observant parent may notice certain habits of the child which may indicate hearing difficulty.

1. Does the child seem inattentive to what is being said to him?
2. Does he ever ask for words to be repeated?
3. Does he fail to answer questions?
4. Does he often misunderstand commands?
5. Does he breathe through his mouth?
6. Does he have any ear discharge?
7. Does he have a dull, monotonous or nasal tone of voice?
8. Does he have any retardation in his work at school?
9. Was he slow in learning to talk?
10. Does he have difficulty in pronouncing sounds?

If the parent has to answer "yes" to many of these questions, the child may be suffering from some hearing loss.

The next procedure to follow is to consult the family physician. Find out if the child has any physical defects which may be causing the hearing difficulty, such as diseased tonsils and adenoids, sinusitis or growths in the eustachian tube. The otologist can give a detailed examination of the throat, nose and ears to ascertain the presence of any growths or diseased conditions which may be causing the hearing impairment. In addition to the location of the possible cause of difficulty, the doctor should give an audiometric examination to discover the exact nature of the loss to the child.

The parent is interested in discovering the educational status of the child. Is his intelligence normal, or does he appear stupid as a result of his hearing deficiency? How does he behave in school? A hearing loss may cause the child to become a problem in behavior. In language tests, the hard of hearing child is slightly below normal in intelligence, but in the performance tests, he will usually appear normal. Lack of hearing causes the child to be slow in language development, and hence he is slow in the acquisition of intelligence.

As far as the hard of hearing child's personality or behavior is concerned, studies have revealed that he does not differ greatly from the normal, hearing child. It also has been found that the hard of hearing person usually rates lower in leadership and is much less aggressive than the normal child.



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However, the younger child usually reveals less emotional stability, assumes a dominant attitude (possibly to compensate for his inferior hearing), makes poorer adjustments in school and has a general feeling of unhappiness. Unless the child has suddenly become hard of hearing as a result of some disease or injury, the adjustment has been a gradual process. The child has become used to his trouble without fully realizing his handicapped condition. After complete diagnosis of the child's condition has been made, the parent is interested in doing something about it if the findings reveal a hearing loss of even as little as 15 per cent.

What to do? In the first place, the physician should be consulted and arrangements made for the correction of any organic defects which may be producing the hearing defect or the progressive deafening condition.

Educational reeducation follows the medical treatment. An attempt is made to help the child to use all the hearing that he has left. In many cases, the hard of hearing person is too lazy to make an effort to hear sounds. Make the ears hear what they can! Depending on the severity of the hearing loss, the child can be exposed to many types of sounds. For instance, he should listen to the radio, sound movies and concerts. Mother may read or tell stories to him. As much as possible, the child should be independent of lip-reading or hearing aids.

Almost every hard of hearing person needs some training in speech. He may have learned to talk at the normal time, but his hearing difficulty may be growing worse, and as it grows worse the speech is likely to become worse. In such a case, speech training should begin as early as possible in order to make use of the hearing that remains. The hard of hearing child often has difficulty in pronouncing all speech sounds correctly. His particular difficulties are usually with the high frequency sounds. Some of these particular sounds are *s, th, t, sh, ch, z, v.* Vowels are easier to hear than consonants. However, without the consonants, speech becomes a series of noises without meaning. This difficulty often occurs among hard of hearing children with high frequency deafness. The parent can help the child to improve his speech sounds by talking distinctly and closely enough so the child can actually hear the sounds. Certain mechanical devices have also been devised whereby the child may help himself to overcome his unpleasant voice defects.

Although the parent may know little or nothing about lip-reading, he can help the child to watch the lips of other people. By watching how the sounds are made, the child will soon learn how to "read" talking. Moreover, the child can be taught to understand speech by watching expressions and actions of people. What child needs to know the exact words being said when his mother bids some one good-bye at the door? The mother may say, "Good-bye,—oh, do come again!" By her very expression and manner, the child knows that his mother is happy to have seen the visitor and wants her to come again. After the child is old enough to go to school, the parent may find some special lip-training teacher to help her.

Of course, the parent is always interested in how to prevent hard of hearing difficulties and also how to prevent the condition from growing worse. Some of the following precautions have been found worth while for the preservation of hearing:

1. Keep the ear, throat, nose and mouth in good condition.

2. Have the ears checked after each infectious disease, such as scarlet fever, mumps and severe colds.

3. Avoid colds as much as possible, especially the cold that "hangs on."

4. Frequent ear tests (audiometric reports) will reveal early beginnings of hearing difficulty.

5. Child should be taught how to blow his nose properly.

6. Obvious ear difficulty should be treated by a physician.

How to treat the child at home? "Should I give my hard of hearing child more attention than the other children?" asks a patient mother. Just as with any other handicapped condition, too much solicitous attention on the part of the mother may make the child a problem to handle—he may take advantage of you, making the most of his handicapped condition. Certain considerations, however, should be made for the hard of hearing child without his realizing that you are treating him any differently from the others. For instance:

1. You may be considerate and patient with him at home. Do not be guilty of giving him favors that his brothers and sisters do not get. Help him to get adequate rest and quietness, as he needs more strength than the average child.

2. Leisure time activities, such as puppetry, ship building and airplane modeling, all help the child to find happy expression without depending too much on the strain of social conversation.

3. Economic and emotional security in the home always help to make the child feel more stable, even though he realizes that he is slightly handicapped.

4. He should realize that he will be able to do practically anything that any one else can do.

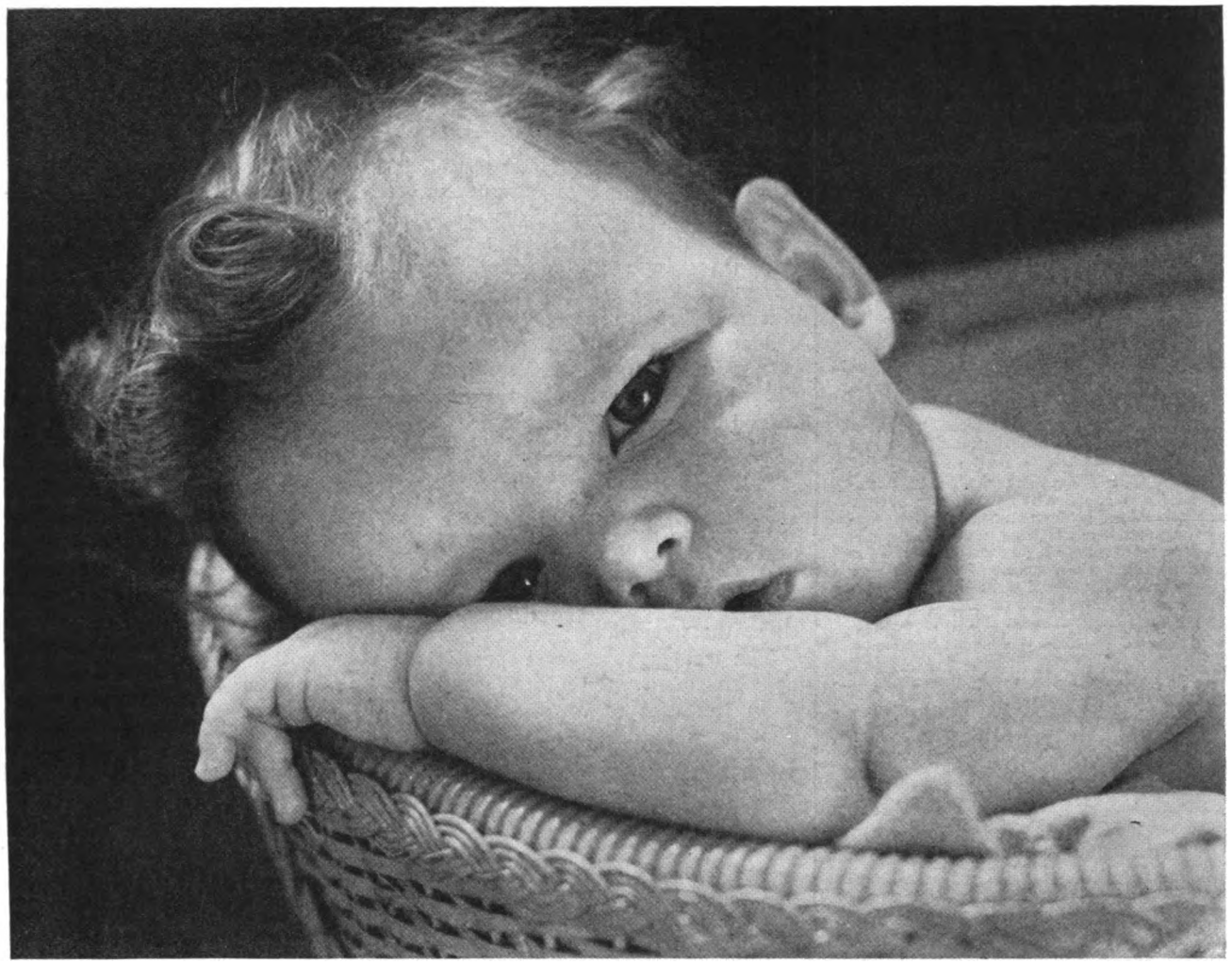
5. If the child has a severe hearing handicap, find the nearest school which can help you.

6. The American Society for the Hard of Hearing, or the Volta Bureau, Washington, D. C., will usually be glad to send literature and information to parents who need help for the hard of hearing child.

DEATHS FROM TYPHOID IN 1940

The number of deaths from typhoid in 1940 in seventy-eight cities for which data have been available since 1910 was the lowest on record, it is revealed in the Twenty-Ninth Annual Report of Typhoid in the Large Cities of the United States, published in *The Journal of the American Medical Association.* In the seventy-eight cities for which these data have been available since 1910, there were one hundred and seventy-two deaths in 1940 as compared with two hundred and thirty-two in 1939 and two hundred and fifty-seven in 1938. For the ninety-three cities included in the survey for the five years 1936-1940, the number of cities with no deaths from typhoid increased from eighteen in 1936 to forty-one in 1940. In the latter year there were eighteen cities with no typhoid deaths for at least two years.

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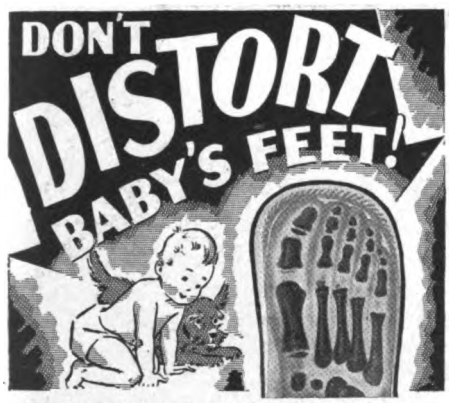
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The Story of Allergy

(*Continued from page 336*)

ing this type of stuffing was covered with an impervious material and certain pieces were discarded, his symptoms ceased. A return of symptoms, after a long period of freedom from attacks, was traced to a project being carried on in his school. The making of cloth was the school project undertaken; the cotton plant and bolls were included in the demonstration. Several asthmatic children, besides this patient, developed symptoms, so the teachers were persuaded to discontinue the project.

The treatment of food sensitivity consists of a meticulous removal from the diet of all foods which contain the offending substance. Egg, for example, is present in a large variety of prepared foods such as cakes, breads, ice cream, sherbets, mayonnaise, noodles, candies and sauces. It would be foolhardy, therefore, to expect to give relief to the egg-sensitive child by the elimination only of eggs as such. The same holds true with wheat, milk and other food substances which enter largely into the preparation of "made" dishes. Once the offending food is discovered and eliminated from the diet, a tolerance can be built by giving it in small amounts, which are gradually increased.

A remarkable physico-chemical fact is that a food which is harmful in a raw state may be tolerated when it is thoroughly cooked. Thus a child sensitive to egg may react to a coddled egg as well as a raw one, yet he may be able to eat a hard boiled egg. The milk-sensitive patient can tolerate milk boiled for half an hour, or evaporated milk, and the person who is allergic to wheat, meat or vegetables in like manner can tolerate these foods when thoroughly cooked. Doctors are endeavoring to establish an immunity, or tolerance, to pollens by inoculating hay fever patients at regular intervals throughout the year.

Unfortunately, it is not always so simple either to diagnose or to treat allergy; the knowledge is still incomplete, and the methods are crude. Yet such amazing strides have been made that one must not be discouraged. First, it must be realized that the approach described here is based on a vast amount of experimentation and clinical observation. It is highly unlikely that this will prove to be merely a theory. While these allergic conditions cannot be permanently cured, the suffering of many thousands has been alleviated. In most instances, patients can be treated at home and do not have to seek new environments. The results, it is believed, warrant the present method of treatment despite the fact that it may be long and tedious, requiring thought and careful planning on the part of the physician and the fullest cooperation on the part of the patient.

Pearl Harbor

(*Continued from page 358*)

they would have been fatal a few years ago. Before sulfa drugs were used, immediate operation would have been a necessity, but with the number of wounded increasing so rapidly this was an impossibility. When the patient arrived at the hospital base he was given morphine at once to relieve his suffering. The doctors were enthusiastic in their reports of the value of "morphine syrettes"—small plastic flasks with hypodermic needles containing single doses of morphine solutions. These "syrettes" have recently been introduced into naval medical use and have already been proved to be of great value. On December 7 there was no time for the preparation of hypodermic needles or hypodermic solutions, and without morphine the burned men would have suffered horribly.

After the men had been given morphine, their wounds were de-

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brided. That is, every bit of dead or dying flesh that could give food to germs was cut away. Sulfanilamide powder was then dusted into the wound, and the incision was closed, usually without providing for drainage. In most cases these men are making excellent recoveries, men who a few years ago would have surely died. Later examinations showed an absence of pus in the wounds, mildness of postoperative reactions, and swift, clean healing. Infection, which in the first World War killed 80 per cent of the men with abdominal wounds, was almost totally absent at Pearl Harbor. There were no amputations because of infection, and there was an impressive lack of fever reactions.

Even more important to the medical observers than the proved efficacy of the sulfa drugs was the triumphant use of the most recent of our war remedies—blood plasma—in the treatment of traumatic shock. Shock is a common and often fatal complication resulting from multiple war injuries: burns and wounds from shrapnel, splinters and falling masonry. Service doctors in the last year or so had paid much attention to reports from Great Britain that clearly indicated the need of a simple, readily available and efficient method of treating shock. It was demonstrated experimentally and clinically that the changes in physiology which occur in shock patients result primarily in the loss of circulating blood volume and that the decrease in blood volume results initially from a loss of plasma. The red blood cells remain in the blood vessels until the last stage of shock, when the inner lining of the smallest blood vessels is severely damaged by prolonged absence of oxygen. This loss, it has been ascertained, may be replaced promptly by the administration of plasma or serum. The replacement of fluid elevates the blood pressure and provides a vehicle for the circulation of red blood cells which is so necessary to overcome the oxygen deficiency of the tissues.

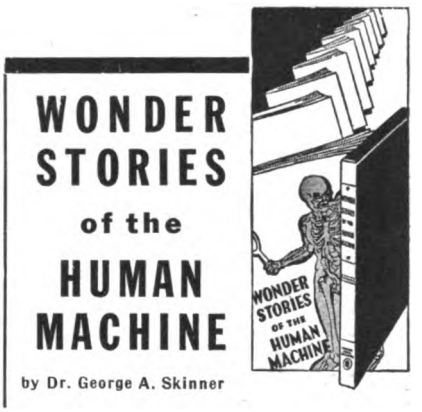
The Army and Navy both realized this necessity and began the development of blood plasma banks as early as 1940. A special apparatus for preparing dry plasma, modeled after the equipment used in drying milk, was constructed but later abandoned in favor of a closed system which proved more satisfactory. Liquid plasma that is frozen and stored at —20° F. is also used. This plasma is thawed at 98° F. just prior to shipment or when used locally. It is well established that plasma in the frozen state retains nearly all of its normal constituents, while dried plasma is more apt to lose a fairly large percentage of its complement and prothrombin as a result of the drying process. Rapid thawing at body temperature is not injurious to the plasma.

Because it would be so much simpler to package, store and transport, experimentation was continued in the preparation of dried plasma. After considerable research, it was found that normal liquid plasma should be frozen and dried from the frozen state under high vacuum at low temperature. Plasma dried in this manner retains most of its liable constituents. When properly packaged it can be safely stored for a period of at least five years. This product was given ample clinical trial under the supervision of members of the Army and Navy Medical Corps. Seventy-two packages of plasma dried in this manner were administered in hospitals of the Army and Navy, and the results were uniformly satisfactory.

After dried plasma was accepted for use in the armed services, experiments were made in the selection of a proper package. The package finally selected consists of two 400 cc. bottles stoppered with vaccine type rubber stoppers; intravenous equipment in sealed metal cans packaged in a sealed, waterproofed fiber board box. One bottle contains the dried plasma obtained from 300 cc. of citrated plasma and is sealed under 29 inches of vacuum. The other bottle contains 300 cc. of sterile, pyrogen-free distilled water sealed without vacuum. It is felt that the package provides an efficient method for administering plasma in the field under combat conditions and aboard ships during naval engagements.

The medical victory at Pearl Harbor was due to preparedness as well as to the heroic work of the men and women who attended the wounded. It was due in no less a degree to those men who work tirelessly in their laboratories seeking antidotes for the ravages of war.





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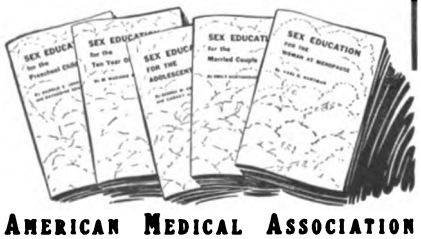
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Healthy Teeth Uncle Sam's

DID YOU KNOW that age for age, girls have more teeth missing, filled or decayed than boys? That a possible means of preventing tooth decay may be developed whereby children are given tiny amounts of the chemical element known as fluorine? Or that 95 per cent of all preschool children have dental defects and only 10 per cent are receiving attention?

These are some of the surprising new discoveries about dental care lately revealed by the United States Public Health Service with headquarters in Washington. While making known these facts to the general public, Uncle Sam offers a number of helpful hints to the nation's mothers and fathers.

Good health through good teeth is our government's aim. In a test survey the Health Service found that New Jersey's school children had lost over one million teeth which should have lasted them through life. If the children had sustained such a loss, it was quite clear that the adults were in a worse plight. As a result of bad teeth, they were unquestionably the victims of much unnecessary illness, entailing a waste of time and money. Here, plainly, was a situation demanding immediate action.

In order to improve this deplorable state of affairs, henceforth at fairly regular intervals symposiums on children's dentistry will be given throughout the country under the auspices of the Health Service, aided by local dental authorities. In this connection it is interesting to note that a short time ago Dr. Arthur H. Merritt, then president of the American Dental Association, announced that a bill had been introduced in Congress for a six year, $600,000 government-financed research program on dental ailments.

Exactly why is it that girls have more teeth missing, filled or decayed than boys? This is not simply because they are girls, according to Drs. Henry Klein and Carroll E. Palmer of the Public Health Service. It is rather because a girl's teeth are cut earlier in life than a boy's and have, therefore, been exposed longer at the same age to wear, tear and germs. In the last analysis, however, the girls show no greater susceptibility to dental decay than boys.

The possible means of preventing tooth decay by giving tiny amounts of fluorine to children was described recently before members of the American Academy of Pedi-

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By JAMES N. MILLER

for Children

atrics. The element fluorine is one of the most active and destructive known, Dr. H. Trendly of the Health Service declared, and when present in only very small amounts, it causes tooth discolorations, or "mottled enamel," in children. In some areas, especially in the Middle West, it is often present in drinking water and a few millionths of 1 per cent is enough to cause the teeth of growing children to develop spots. However, Dr. Trendly says, children with spotted teeth seldom have cavities and toothache. It may be possible, he believes to find the proper concentration of fluorine in drinking water or some combination of fluorine and other substances which will prevent tooth decay and at the same time not cause tooth discolorations.

Mother and Dad are mostly to blame, points out the Public Health Service, for the fact that 95 per cent of preschool children have dental defects, with only 10 per cent receiving attention. It has also been estimated that, at 3 years of age. 85 per cent of the nation's youngsters suffer from dental decay and that a few years later this may reach 97 per cent. These figures are especially disturbing in view of the fact that a child who is slow or



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backward in his school work is often found to be suffering from neglected teeth.

One reason for this nationwide problem is that frequently it is difficult, because of parental ignorance or lack of funds, to have preschool children brought under dental observation and care. As a result, when these children are ready for school, a tooth or gum disease may have progressed to a point where treatment is expensive and unsatisfactory from a prophylactic standpoint.

The important question in preventive dentistry today is how to reach children between 3 and 6 years of age. Probably, say federal health authorities, the problem can be solved in part by having every citizen assume the responsibility of seeing that his preschool child has the necessary preventive dental work. If parents fail to assume this responsibility, they may find to their chagrin that a child with an uncomfortable mouth has neither the physical energy nor the mental vigor to make satisfactory progress in the three R's.

In view of the lack of attention to the dental needs of the nation's children, it is not surprising that of 925,873 men who were found unfit for military duty in the first Selective Service examinations by reason of physical causes, the second highest of all causes of rejections was dental defects.

A high percentage of undernourished children show marked evidence of dental decay. The examination of a group of 270 children in this class under the supervision of the Health Service revealed 33 per cent with one to four cavities, 48 per cent with from four to eight; this same group showed some children with nine, ten and eleven cavities each.

The preservation of the pulp (often called "nerve") in the baby teeth is of the greatest importance. If this is not in normal condition the roots of the first set of teeth will fail to absorb, and many of the irregularities in the permanent teeth may be directly attributed to this cause. The loss of a temporary tooth before the proper time also may result in the eruption of the permanent tooth before thorough calcification has taken place, in which case it is more subject to decay.

All too frequently, little if any attention is paid to the temporary teeth, parents assuming that they will be replaced later by the permanent teeth, and that therefore attention to them is unnecessary. It is rare to find a child who has not had a toothache at some time. Even dentists pay little attention to these teeth, because young children are sometimes difficult to work with. This is unfortunate because, in reality, more can be done for a child by proper attention to the first set of teeth than by repairing the ravages of decay in the permanent teeth after they have taken their places in the regular manner.

Among 7,059 children examined in an investigation of mouth conditions by the Public Health Service, 1,822, or 25.8 per cent, were found to have lost one or more of the six year molars. Because this is the first permanent tooth to appear, erupting back of the last temporary tooth, it is frequently mistaken for a temporary tooth and neglected. This is nothing short of a calamity. Not only does the loss of this tooth mean the loss of masticating surface, but the six year molar also determines to a considerable extent the relative positions of the other permanent teeth, forming, in a manner, the keystone of the dental arch. With its loss, this arch collapses to a greater or lesser degree, markedly modifying the facial symmetry of the developing child. It is important to remember that in young children the first permanent molar is the sixth tooth counting from the center. Parents should be instructed to watch it carefully for beginning dental decay in order that steps may be taken in time for its preservation.

Few mothers and fathers realize that the percentage of children in need of dental attention is highest among those between 7 and 8 years of age. The neglect of the teeth in early life usually means an infected mouth with abscesses at the roots of the teeth which, unless cared for, persist in later life. Such abscesses may act as reservoirs of infectious material which may enter the blood stream and be carried to remote parts of the body, frequently causing rheumatism, heart disease, kidney trouble and other ailments which may materially shorten life. It has been said that one-fourth of all the people who die annually in

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the United States have their life shortened from five to ten years by these so-called degenerative diseases.

According to Uncle Sam's health authorities, all teachers should be given at least a working knowledge of mouth hygiene and related subjects and instruction in the preventive measures that may be carried out by them without special equipment. They should be taught the value of mouth hygiene in preserving the child's health, reducing absences from school and lowering the number of children who repeat grades.

Many means are available for the instruction of teachers, such as lectures, moving picture films and instructive charts and pamphlets.

Fortunately for American youngsters, the accomplishments of modern dental science are countless. The young child with teeth coming in irregularly is easily fitted with a harness that will improve his appearance and serve as a foundation for good health for years to come. Junior is lucky, too, because teeth are not extracted these days at the drop of a hat, as they used to be when the x-ray plates gave them a bad reputation. There are many ways of saving them, in spite of the fact that often they are only "splinters." The modern facilities of the dentist challenge admiration, and the comparatively painless nature of his operations is the wonder of all those who suffered in the dental chair of yesterday.

The Tuberculin Test

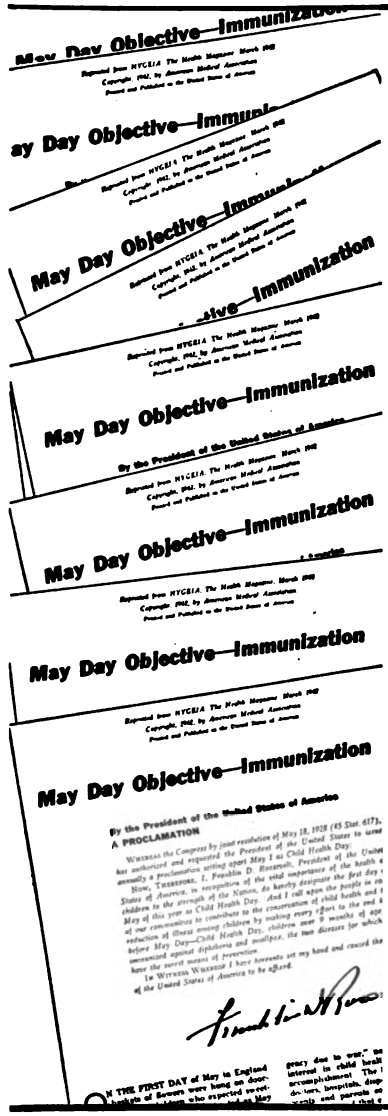
(Continued from page 378)

of colorless liquid under the skin—that, the children find, is all there is to it, except for leaving their names.

The doctor works deftly, rapidly, but always has time for a word for each of the youngsters lined up before him. His slight gruffness of manner is belied by a twinkling eye and a friendly grin, and he seems to have a genius for gaining their confidence. In three days he comes back again for an inspection of the pricked places on their arms. Most of the children have no reactions at all; a few have slightly raised pink areas on their arms. The doctor looks at them and records what he finds. The work is continuing.

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BOOKS ON HEALTH

The Universal Constant in Living

By F. Matthias Alexander. Cloth. Price, $2.50. New York: E. P. Dutton & Co., Inc., 1941.

Great Britain before the war was a hotbed of cultists who operated on the fringe of medicine. High class magazines carried advertisements of spine-stretchers and courses which would aid the reader to develop his memory, his judgment, or his physique. Testimonials from important people apparently were to be had easily. The present volume is a peculiar conglomeration of factual material and ideas written by one of these "fringe" healers, F. Matthias Alexander, whose training and technical equipment in medicine is nowhere described in the book, except where it is pointed out that he is not a healer but merely a teacher. He has, allegedly, " 'cured' men who stutter, suffer from heart trouble or asthma, or who are troubled by arthritis. . . ." The introduction is written by Prof. G. E. Coghill, a noted neurophysiologist, who points out that the author's theory is based on the fact that the whole person is integrated in the performance of particular functions, that muscle and joint synchronization is important as a factor in determining posture and that posture is important in determining muscular action.

One gets the idea that Alexander makes postural adjustments and that his patients feel better because of them. There is quite a connection here between osteopathic and chiropractic adjustments and Alexander's procedure, and in one chapter he discusses an osteopath's article to show that even the osteopath can learn something from his work. While the author quotes several British physicians in a complimentary vein and implies that the British War Office is using some of his technics in its physical training procedures for recruits, there is no specific evidence that his work is endorsed by careful medical investigators of the subject. However, Alexander does point out that several physicians have given him credit for success in treating patients, and he has a chapter dealing with a petition to the British Medical Journal to have a survey made of his work. Alexander's discussion of the results of this survey does not seem at all conclusive, although he cites a few successfully treated patients. Mr. Alexander apparently was operating a school which incorporated his tenets in Kent, England. This has now been transferred to Stow, Mass. He is now a resident of this country and it may well be possible to have a more careful study of his technics made by our researchers in behavior disorders and in physical therapy, so that if there are merits to this man's procedures, they will be made available for use by others than himself. Just what his procedures are does not come out very clearly in this book.

LOWELL S. SELLING, M.D.

Play for Convalescent Children in Hospitals and at Home

By Anne Marie Smith. Cloth. Price, $1.60. Pp. 133. New York: A. S. Barnes and Company, 1941.

Sick children in hospitals as well as at home require more than just skilled medical care for their complete recovery. Although medical attention and physical care are of first importance, recovery can be aided and invalid reactions such as self-pity avoided if the child's total personality is treated. It has been estimated that about 40 per cent of the child's hospital day is occupied by physical care. This book relates methods by which the Children's Memorial Hospital of Chicago employs play, the child's language, to occupy in a constructive way the other 60 per cent. Nurses and volunteer workers are given courses in play as a basic method for their understanding care of children; the book is intended primarily for those interested in the welfare of children. Although it deals with the hospitalized child, the values of play and group methods are applicable to children in homes, schools,

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institutions and camps. It demonstrates what play has accomplished in alleviating children's fears of hospitals and increasing their confidence in physicians and nurses.

Many types of play are required for the many-sided needs of children in an institution. Special emphasis is placed on play activities requiring no material equipment and usable for persons of wide age ranges, individually or in groups. Definite plans and programs are offered. The author demonstrates how effective play activities are as therapy when organized as an integral part of the hospital care of children and as a fundamental part of the education of pediatric nurses. She also describes the reactions to play of the children, nurses, parents and visitors, especially its influence in promoting better cooperation and harmony. The child absorbed in play has neither time nor reason to become habituated to invalidism.

JOSEPH K. CALVIN, M.D.

Insect Pests

By Wm. Clunie Harvey, M.D., and Harry Hill. Cloth. Price, $4.25. Illustrated. Chemical Publishing Company, Inc., 1941.

Insects are wartime opportunists, taking advantage of every altered condition of life in the human family. This book, therefore, is timely. It describes the more common insect pests, such as the bedbug, the flea, the louse, the cockroach and others, giving the habits and methods of control for each one. The second part of the book gives practical information on the principles and practice of disinfestation. The authors describe in detail the methods of using the various gaseous and liquid materials for the disinfestation of homes, barracks and ships, with a chapter on foodstuffs. A chapter on human toxicology enumerates the precautions to be taken to prevent accidents and tells what should be done if they do occur.

THOMAS G. HULL, PH.D.

Body Mechanics in Health and Disease

By Joel E. Goldthwait, et al. Cloth. Price, $5. Pp. 316. Philadelphia: J. B. Lippincott Company, 1941.

Primarily this is a medical book. Secondarily it is one of the most informative books about the structure and functions of the human body as a machine that is anywhere available. The intelligent layman who suffers with bad posture, backache, muscle weakness or any such symptoms can find in this book a better understanding of the nature of his condition and what the doctors are able to do for it than in many another book written particularly for the general public.

M. F.

Nature Smiles in Verse

Compiled by Bernal R. Weimer. Copies of this book may be obtained by writing directly to Mr. Weimer, Bethany, West Virginia. Cloth. Price, $1.50. Pp. 99. Illustrated. 1940.

Many a rhymster has found in the functions of biology the very essence of humor. The Professor of Biology at Bethany College, West Virginia, has collected these contributions from a wide variety of sources and makes them available in a pleasant little volume which has been cleverly illustrated by Bobby Murray. Among the contributors to biological verse are such poets of note as B. L. T., Dorothy Aldis, Brete Harte and Arthur Guiterman. Perhaps the best of the lot is that magnificent couplet by Strickland Gillilan on "The Antiquity of Microbes." He merely says:

Adam
Had 'em

Many of the poems concern embryology, and the others pass from bacteria to vertebrates. Perhaps the author overlooked entirely the famous contributions of Ogden Nash. Certainly they deserve a place in any such collection.

M. F.

NOTICE

Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through HYGEIA or the American Medical Association, unless published by this organization. The following list contains the complete addresses where the publishers mentioned in these reviews may be reached:

A. S. Barnes and Company, 67 West 44th Street, New York City.

Chemical Publishing Company, 234 King Street, Brooklyn, New York.

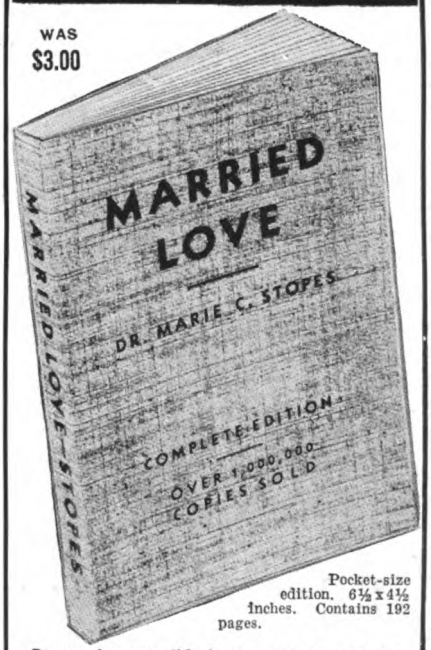
E. P. Dutton & Company, 300 Fourth Avenue, New York City.

J. B. Lippincott Company, 227-231 S. 6th Street, Philadelphia, Pa.

Mr. Bernal R. Weimer, Bethany, West Virginia.

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Physician in charge Diabetes Clinic, Mt. Sinai Hosp., Cleveland; Instructor, School of Medicine, Western Reserve University.

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Medical News

OF THE MONTH

Inadequate Dish Washing

Managers of public eating and drinking establishments should have their attention called to the glaring opportunities for the dissemination of infection due to inadequate methods of dish washing, *The Journal of the American Medical Association* declares in an editorial.

Discussing the findings of a recent investigation of fifty-five eating places in Providence, R. I., *The Journal* points out among other things that the period of exposing eating utensils to hot water or chemical disinfectants was extremely variable and in most instances far too short to insure effective disinfection. The use of chlorine compounds for the disinfection of beverage glasses can be an effective method providing relatively sterile glasses. However, most of the establishments using chlorine disinfection were guilty of gross misuse of this procedure.

Nutritional Status of Americans

"The evidence at our disposal warrants the conclusion that dietary inadequacies and malnutrition of varying degrees are of frequent occurrence in the United States and that the nutritional status of an appreciable part of the population can be distinctly improved," Norman Jolliffe, New York; James S. McLester, Birmingham, Ala., and H. C. Sherman, New York, declare in a paper on "The Prevalence of Malnutrition," published in *The Journal of the American Medical Association*. The three men add that "If optimal nutrition is sought, not mere adequacy, widespread improvement is possible."

They explain that "Recent estimates of the prevalence of malnutrition in the United States have varied so greatly that the Food and Nutrition Board of the National Research Council has assigned to us, as a subcommittee, the task of evaluating existing evidence on this question. Among the reasons for the widely varying estimates is the lack of criteria for the diagnosis of malnutrition. . . ."

" 'Nutritional failure' exists as soon as adequate amounts of an essential nutritional factor or factors fail to reach the desired state.

" 'Dietary inadequacy' means the failure to ingest an essential nutritional factor or factors in amounts sufficient to meet the existing requirements of the body.

" 'Nutritional inadequacy' means not only the failure to ingest, i. e. dietary inadequacy, but failure to absorb, to retain and to utilize an essential nutritional factor or factors in amounts sufficient to meet the existing requirements of the body.

" 'Malnutrition' is a bodily condition, detectable by any method of examination, caused by a nutritional inadequacy."

Advises Against Splinting Fractures of Elbow

Elimination of the use of splints, plaster casts or tight bandages for fractures of the elbow is advised by A. A. Neuwirth, Major, M. C., U. S. Army, Fort Totten, N. Y., in *The Journal of the American Medical Association* in an article in which he reports that the regained function of fractured elbows in 5 patients by this radical deviation from previously accepted methods of handling was 100 per cent.

"The fracture or fractures in the vicinity of the elbow joint were maintained in the functionally flexed position by a simple triangular bandage suspended from the neck," he explains. "Movement of the forearm and arm as well as of the elbow joint was encouraged as soon as possible, in keeping with the painful limits of the injury. . . . The nonfixation treatment permits close observation of the condition of the joint and early treatment of any untoward symptoms and complications. . . ."

Brain Waves as a Test of Blindness

Electroencephalography, a method of recording the electrical activity of the brain which is roughly analogous to the use of electrocardiography in studying the activity of the heart, is a reliable objective test of true as opposed to malingering or hysterical blindness, Frederick Lemere, Seattle, declares in a recent issue of *The Journal of the American Medical Association.*

He points out that because there never has been a reliable objective test for blindness heretofore, a physician suspecting hysterical blindness or malingering has not always been able to confirm his diagnosis and, conversely, he may feel confident that a patient is not a malingerer and yet be unable to prove genuine blindness.

"The value of a reliable objective test for blindness," the author says, "especially in compensation cases and in military medicine, is obvious."

He explains that the most prominent brain waves are the so-called alpha waves with an approximate rhythm of 8 per second. These waves appear on the electroencephalograph only with the eyes shut, as they arise almost entirely from the visual cortex and are broken up when the eyes are open and the person looks at an object. A uniform field of light or dark, or even a field containing blurred, indefinite outlines, usually does not interrupt the alpha rhythm, which is broken only by a definite visual pattern. If a blind or partially blind person attempts to look at an object such as a pencil and the alpha waves persist, one concludes that there is not enough vision left to distinguish objects or to be of practical value to the patient. On the other hand, if a supposedly blind person is asked to open his eyes and look around and the alpha waves stop, one can conclude that there is enough vision left to distinguish objects at least, and one can with reasonable safety make a diagnosis of malingering or hysterical blindness.

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HYGEIA

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Halitosis
The Human Eye



The Health Magazine of the American Medical Association

JUNE • 1942 • 25c

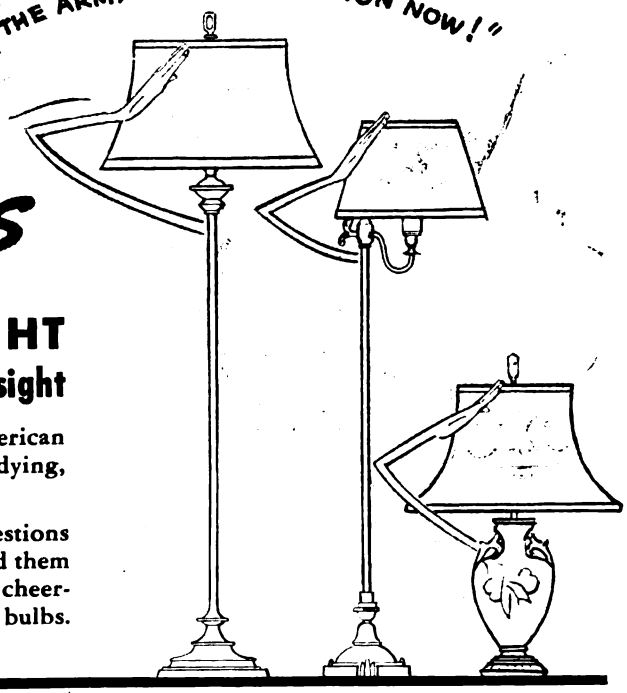
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"WE'RE IN THE ARMY OF CONSERVATION NOW!"

3 simple ways

TO AVOID WASTING LIGHT

cheer up the home . . . and guard eyesight



You risk eyestrain today more than ever. For in most American homes, people are now using their eyes more . . . studying, sewing, reading.

Below, you'll find some practical, easy-to-use suggestions . . . that will help reduce this burden on eyes . . . guard them from strain and make the home more cheerful . . . with present lamps and light bulbs.



1 Keep lamps clean . . . dustfree

Reflector bowls and lamp bulbs gather more dust than you think. The dust collected on them in from one to three months can rob you of much of the light your eyes need. *Dusting them with a damp rag, or washing will give you from 25 to 30% more light.*



2 If your lamps have dark shades

or shades now *turned yellow inside,* you are losing light that your eyes need for easier seeing, less eyestrain. You may be losing as much as 50%! *Clean them regularly; or if they're too bad, replace them with fresh shades and you'll get a lot more light.* (Even light-colored silk shades will give you more light if brushed weekly.)



3 Place lamps to make light more useful

Put them where they give eyes most help. Often, two or more of the family can use the same lamp when furniture is properly arranged. (One suggestion is shown above.) And don't get too far away from the lamp; a difference of twelve inches can cut your light as much as 50%.

When you buy a new bulb . . . *buy carefully*



Wrong-size bulbs may mean eyestrain. Make sure the new G-E MAZDA lamps you get are the *right* size to guard your eyes from strain. Eyesight and electricity are both vital in today's emergency. Conserve them both. When you read, sew or study, be sure you have enough light to protect your eyes; *but don't waste it—don't leave unnecessary lights burning!*

G-E MAZDA LAMPS

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MAZDA—*not the name of a thing, but the mark of a research service.*

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The Fairest in the Land



Don't look now!
There's the Wicked Queen!



The Handsome Prince



The animals lead Snow White to the Dwarfs



The Dwarfs discover Snow White



Snow White makes the Dwarfs wash



The Wicked Queen finds Snow White



The Dwarfs to the rescue



Snow White eats the Poisoned Apple



Snow White sleeps



The Prince awakens Snow White with a kiss



And they lived happily ever after

A Young Lady's Reactions to "Snow White and the Seven Dwarfs"

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FORECAST

During the last war, men entering the military service were not required to pass psychiatric examinations. As a result, thousands of men are on pension lists who were able to carry on normally and efficiently in civil life but who "cracked up" mentally under the stress of military service. It is the object of present Army psychiatric examinations to weed out these "borderline cases," to keep as useful citizens those who could not stand the emotional and mental strain of combat service. Lt. Col. Amos R. Koontz explains how the Army is using psychiatric examinations to economize on manpower in "Psychiatric Rejections in Selective Service," which will appear in HYGEIA for July.

Medical progress has made it possible to control the diabetic patient to the extent that he can be regarded to a marked degree as healthy. Thanks to insulin and other modern care the diabetic of today can be "reconditioned" and returned to work; with little effort, he can live the normal span of life and be a useful citizen. He should have no fear of revealing his condition to his employer.

An interesting story of diabetic patients who are doing important, productive work in the nation's war effort is told by Anthony Sindoni Jr., M.D., in "How the Diabetic Can Help Uncle Sam in War." Coming in HYGEIA.

Careless use of the terms "vaccine" and "serum" has created a widespread public misconception that they are synonymous; even newspaper writers and radio announcers confuse the terms and speak of "typhoid serum." Yet it's just as wrong to use these words interchangeably as it would be to put gasoline in the radiator and try to run your car on water, according to Leland W. Parr, Ph.D., who explains the difference and tells how each is developed and used in a lively "biology lesson" for HYGEIA *readers.*

What with the shortage of tires, gasoline and golf balls—and every one planning the vacation budget with a view to including as much as possible of health and recreation without slowing up in the purchase of defense bonds, the country's lakes and beaches are going to be more popular than ever before! There's no priority on fresh or salt water, and there's no sport that's more refreshing and beneficial than swimming—if it's indulged sensibly and with proper precautions.

A few simple rules for safe swimming, together with instructions for the protection of sensitive ears, noses and sinuses, are set forth by Lewis J. Silvers, M.D., in "Swimming Safely." July HYGEIA.

HYGEIA

THE HEALTH MAGAZINE

535 N. DEARBORN ST., CHICAGO, ILL.

Published and copyrighted, 1942, by the American Medical Association. Edited by Morris Fishbein, M.D.

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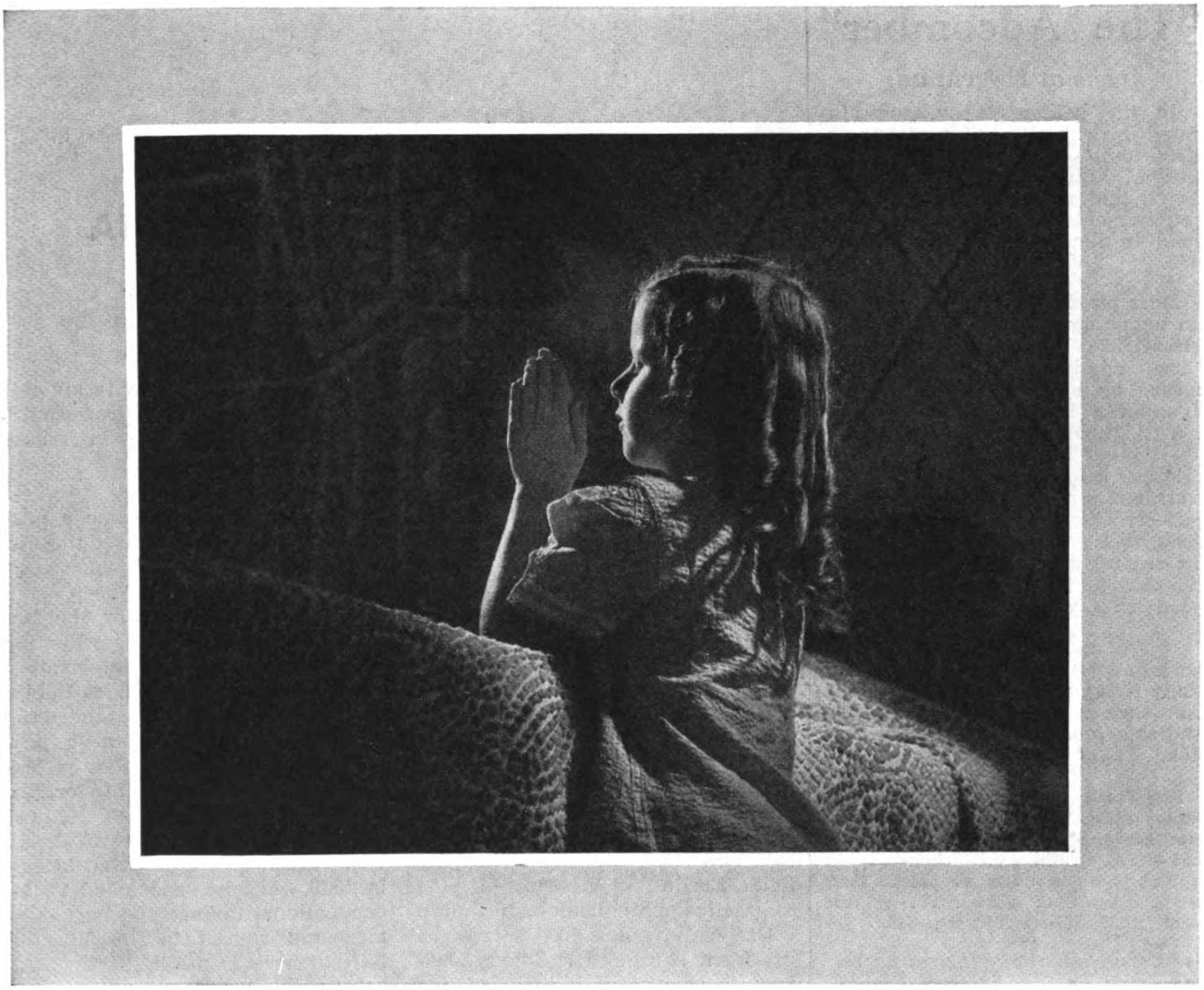
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Unsolicited manuscripts will be considered by the Editor but must be accompanied by a stamped self addressed envelop to insure return if rejected. Manuscripts should be typewritten, double-spaced, and the original, not the carbon copy submitted. All rights reserved.

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What can a man believe in?

It didn't seem too much to ask for.

A doll like Mary's.

Help in passing your arithmetic test.

A clear day for the Sunday picnic.

Maybe none of those things came true. Maybe it seemed as though your pleas fell upon deaf ears. Yet, deep down inside, you felt better, stronger.

You know why, now. Even if your prayers weren't answered, you had found something. It was bigger than you. It gave you hope and courage.

Something men call faith. Something to believe in, always.



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"The Adcomber"

looks at Hygeia ads

In the golden, tangy, sun-saturated juices of Hawaiian pineapple, nutritionists have found those important vitamins B_1 and C. . . . You'll find the recommended daily requirements of this vitamin-rich food in the authentic chart, page 435.

—◈—

Does playing chef to Baby absorb an undue amount of your time and attention? You can cut down the time and improve His Majesty's menus by using a Foley Strainer. It's *quick*. It's *easy*. And the cost? . . . $1.00 only! Page 438.

—◈—

Sounds unbelievable on paper, but feels truly convincing by this easy 2-minute test—*the marvelous difference* between the constricting pressure of an ordinary corset and the natural figure support of a Spirella. Just make that 2-minute test yourself . . . page 451.

—◈—

One of those "personal victories" so important to your job and your daily living is Dependable Eyesight. And such common disturbances can indicate *faulty* eyesight! . . . page 452. *Better check up!*

—◈—

Busy People trust only proven tools. . . . Reason enough why Mrs. Henry J. Blanchette, mother of triplets, always depends on Lux—NEW QUICK LUX! Just ask any mother of triplets how she keeps those multiple wardrobes clean . . . or read what Mrs. Blanchette says, page 465.

—◈—

"Mary knew all the answers!" . . . why Tampax internal sanitary protection beats 1890 methods . . . or 1900 . . . or 1930, for that matter. If you haven't discovered the reasons FIRST-HAND, better read Louise's very natural questions and Mary's helpful answers, page 449.

—◈—

To get more light from the same current . . . to cheer up dusky corners . . . to guard irreplaceable eyesight—do these three things:

1—See inside front cover.

2—As directed, inside front cover.

3—Be sure to follow this one—inside front cover.

—◈—

SWEET AND NUTRITIOUS! How sweet? . . . "2 to 2½ teaspoons of sugar to ½ banana"! How nutritious? . . . 5 precious vitamins and 11 minerals to every brown-flecked banana!—as per chart, page 407. Two ideas for delicious "jiffy dishes" too . . . same page.

—◈—

SUN BATHS FOR LITTLE FOLKS, WITH WHOLESOME SUNSHINE TO TAN THEM, SUTRA SUN CREAM TO GUARD THEIR DELICATE SKINS AGAINST HARMFUL RAYS. . . . There's a prescription FOR SUMMER-TIME FUN AND STORED-UP HEALTH. IF YOU HAVEN'T SEEN SUTRA IN YOUR FAVORITE DRUG STORE, SEE PAGE 409.

THE ADCOMBER

Who's Who IN HYGEIA

JOHN OLIVER McREYNOLDS, M.D., whose article, "The Human Eye," page 422, is the second in a series appearing in HYGEIA on "Our Eyes and How to Save Them," is a native of Kentucky. He attended the Transylvania University at Lexington, Ky., and after receiving the B.S. and M.S. degrees there he became a teacher of mathematics in the Dallas, Texas, High School. After a year of teaching, he entered the Bellevue Hospital Medical College in New York City and later completed his medical training at the University of Maryland, where he was graduated in 1891. He served an internship at the Baltimore City Hospital and went on to study at eye and ear clinics in London, Paris, Berlin and Vienna, returning to practice ophthalmology in Dallas.

Dr. McReynolds has served as president of the Dallas County Medical Association, president of the Texas State Medical Association and vice president of the American Medical Association. He has been professor of ophthalmology at the medical schools of Southern Methodist University and Southwestern University and chairman of the section on ophthalmology of the American Medical Association. During the last war, Dr. McReynolds was a Major in the Medical Corps, United States Army, directing the Aviation Research Laboratories at Camp Dick. At the present time, he is a member of the staffs of the St. Paul's, Methodist and Crippled Children's hospitals of Dallas, consulting surgeon for several railroads in the Southwest, a member of the board of governors of the American College of Surgeons, a director of the Dallas Chamber of Commerce and a Colonel in the Officers' Reserve Corps, United States Army.

Dr. McReynolds says of his own career: "If I have contributed anything, it lies between the covers of books interesting chiefly to my colleagues in the medical profession."

Readers of his articles in HYGEIA will probably disagree.

GREER WILLIAMS became a professional newspaperman at the age of 17 and is still in newspaper work today at 32, having been successively sportswriter for the Detroit *Free Press*, science writer for the Chicago *Tribune*, information expert for the United States Public Health Service and science editor of the new Chicago *Sun*—a progression which he describes as "exchanging the *Athletic Guide* for *The Journal* of the American Medical Association as a source of data." This career was interrupted briefly in 1940 when he succumbed to the occupational disease of newspapermen and retired to the Virginia hills to write a novel.

Mr. Williams began contributing to magazines in 1938 with the *New Yorker* and *Reader's Digest*, and since that time a number of his popular articles on medical subjects have been published. "How to Choose Your Doctor," on page 430, reflects the judgment resulting from years of association with scientists and physicians.

LOIS STICE is a member of the staff of the Medical Division, Office of Civilian Defense in Washington, D. C., headquarters for the vast planning and organization program which is rapidly preparing the nation to care for civilian victims of possible wartime disaster. Thus "Wartime First Aid," on page 412, is straight from headquarters.

Before joining the OCD staff, Miss Stice had been for several years News Editor of *The Journal* of the American Medical Association and publicity director for the American Academy of Ophthalmology and

(Continued on page 406)

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"I THINK I'm about the average mother of an only child. I'm pretty proud of her, of course, and I'm sensible enough to recognize her shortcomings — one of which I *knew* wasn't stupidity.

"Yet, when she reached 3rd grade, there was her report card — 'D' in reading, 'D' in arithmetic. The first time it happened I blamed it on lack of concentration, but after two months of the same low grades, I went to see her teacher with fire in my eye!

"It was then I learned that *I* had been the dull one all the time. 'Have you ever had Betty's eyes examined?' her teacher asked. 'Poor vision may have a great deal to do with her low marks. My advice to you is to check and see.'

"And check up I did . . . at once. Today Betty is like a new youngster. Her marks are up where they should be and she gets a lot more fun out of everything she does. Poor kid, she never realized how much defective vision had been handicapping her."

What about *your* children? Have you given thought to their eyes? Learn the truth by having their eyes examined, it's the only way you can be sure!

WHAT ARE SOFT-LITE LENSES?

Soft-Lite Lenses are scientifically designed to control the amount of light which reaches the eye, without altering color or visual sharpness. They neutralize glare, absorb excess light, protect eyes against eye-strain and fatigue. Soft-Lite Lenses are flesh-toned and are ground to individual prescriptions. They are prescribed for children as well as adults.

There is only one Soft-Lite—identified by this certificate.



Soft-Lite Lenses

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. . . for the flag you honor!

V . . for the man you're cheering!

V . . for the Vital Things entrusted to women! Things that build morale—for fighting men and home folks! Things like fresh, wholesome complexions, free of cosmetic irritation and clogged, ugly pores.

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Ask for your set today—enough of five daily necessities to last a long week. Just send one dime and your name on the coupon below for samples of: Marcelle hypo-allergenic Cleansing Cold Cream, Skin Lubricating Cream, Face Powder, Rouge and Lipstick.

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Blonde..... Brunette..... Auburn.....

NAME.....H-6-42

ADDRESS.....

Otolaryngology, and, earlier, editorial assistant on HYGEIA and reporter for the Louisville *Times* and the Boston *Globe*.

Formerly science editor of the Cleveland *News*, feature writer for the Associated Press and bureau manager in Cleveland for the United Press, RAYMOND A. BRUNER is now a free lance writer of magazine and newspaper articles on scientific subjects. Twenty years' experience covering scientific meetings and interviewing leaders of scientific thought for newspapers resulted in his ambition to inspire the public to a greater interest in themselves and awareness of the world about them. HYGEIA readers will find "Hand Hazards!" on page 424, an informative, instructive example.

LETTERS FROM *Readers*

Postmortems

To the Editor:

As a hospital administrator I am interested in doing everything possible to educate the public in the importance of autopsies. In the small hospitals, especially the ones located in rural areas, it is extremely difficult to secure permission from the nearest of kin. The article and illustration appearing in April HYGEIA would I believe go a long way in overcoming the ideas of such a procedure that the general public has.

HELEN BRANHAM

North Mississippi Community Hospital
Tupelo, Miss.

To the Editor:

. . . the subject is well covered. People do have false ideas about posts; the article should go far to convince many a skeptic . . . I agree heartily with its conclusions.

PAUL F. BOURSCHEIDT

Peoria, Ill.

To the Editor:

I wish to compliment HYGEIA for the article "They Shall Not Die in Vain." It includes good information for the public and is appreciated by the profession.

FRANK P. HAMMOND, M.D.

Chicago, Ill.

To the Editor:

. . . was a fine article and I hope it changes the opinion of a great many who dread the thought of autopsy.

F. J. BERGSTROM

New York, N. Y.

To the Editor:

. . . I think this is the best thing I have read, especially from the standpoint of the lay person. I am anxious to obtain a few reprints of the article.

EUSTACE L. BENJAMIN, M.D.

Evanston, Ill.

In the Doctor's Office

To the Editor:

Your magazine comes to our office regularly, and I find that it is always one of the first magazines selected by patients to help pass the time until it is their turn to see the doctor.

MAXIE D. PILLSBURY

Knoxville, Tenn.

Covers

To the Editor:

I'd like to commend you on the more "respectful" covers which are being put on the magazine. I feel exactly as the lady did who wrote in protesting them.

MRS. BERNARD NEWBERT

Waldoboro, Me.

Children's Feet

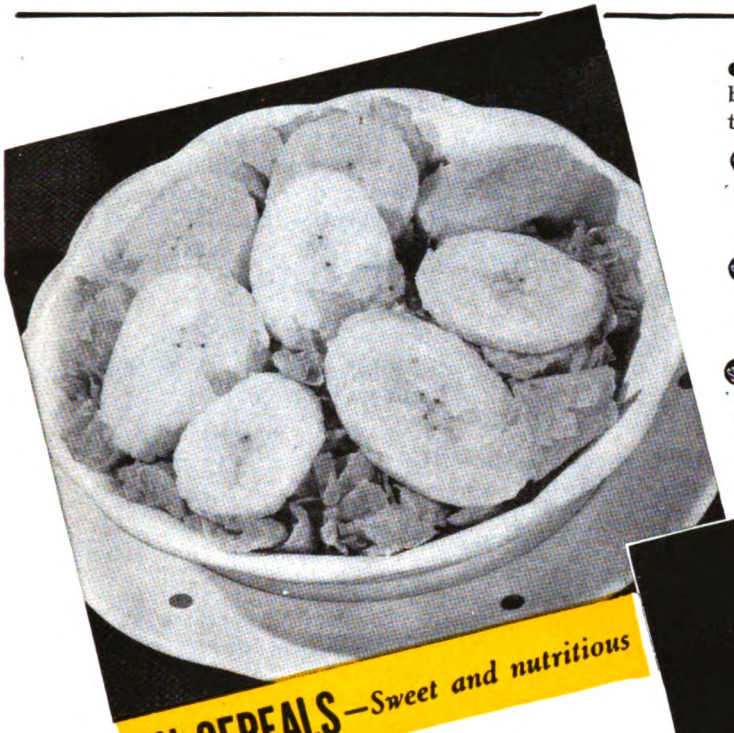
To the Editor:

In the February issue of HYGEIA there was a most interesting article by John J. McKee of Lorain, Ohio. It has great educational value and makes it possible for people to see conditions that have been sadly neglected. Malformations, corns, bunions, hammer toes, calluses, shortened heel cords and ingrowing toenails are all traceable to shoes incorrectly fitted over a period of years.

(Continued on page 408)

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BANANAS...a natural sweetener



ON CEREALS—*Sweet and nutritious*

● One fully ripe banana (yellow peel, flecked with brown), average size, contains the equivalent of 4 to 5 level teaspoons granulated sugar—as follows:

4.6% dextrose	Total sugars 20.4%
3.6% levulose	
12.2% sucrose	

PLUS

Vitamin A	310-420 International Units
Vitamin B_1 (Thiamin)	52-67 Micrograms
Vitamin G (Riboflavin)	110 Micrograms
Niacin (Nicotinic Acid)	75 Milligrams
Vitamin C	12.5-13.7 Milligrams

PLUS

11 Essential Minerals . . . . . 120 Calories



IN MILK SHAKES *For high caloric and high vitamin diets*



½ OF 1 BANANA CONTAINS 2 TO 2½ TEASPOONS OF SUGAR

VITAMINS AND MINERALS, TOO!



FREE UPON REQUEST

Revised edition of "Dietary Uses of the Banana in Health & Disease," by L. Jean Bogert

★ ★ ★

Educational Department I
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Banana Milk Shake

(290 CALORIES)

1 fully ripe banana* **1 cup COLD milk**

**Use fully ripe banana . . . peel well flecked with brown*

Peel banana. Slice into a bowl and beat with electric mixer or rotary egg beater until smooth and creamy. Add milk and mix thoroughly. Serve COLD. Makes a 10 to 12 ounce drink.

NOTE: If electric drink mixer, which crushes fruit while mixing, is used, break banana into mixer cup, add milk and mix. Add ice cream before mixing, if desired.

Banana Milk Shake is only one of the many new uses for Bananas.

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Do's *and* Don'ts *about*

Tampons

Don't ***be old-fashioned***



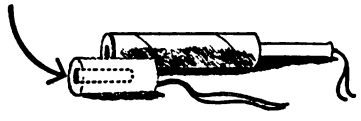
A few years ago, the very thought of tampons was startling—today millions of women know they make sense. Every month, more and more women discover the wonderful freedom of *internal* sanitary protection. So don't be timid—but do be wise! Choose a tampon that's *right* for you.



Do ***get a tampon that fits!***

Meds, the Modess tampons, are scientifically correct. They were designed by a leading woman's doctor—after years of scientific experimenting with *all* kinds of tampons. Comfortable? You're as free as any other day! No pins. No odors. No bulges. Easier to use, too. Each Meds comes in a one-time-use applicator that ends old difficulties.

Do ***be sure of real protection!***



Protection depends on *how fast, how much* a tampon absorbs. Meds absorb *faster* because of the "safety center." No other tampon has it! Meds are made of the finest, pure cotton—they hold more than 300% of their weight in moisture.

Don't ***pay more!***

You don't have to now! Meds cost *less* than any other tampons in individual applicators. No more than leading sanitary napkins. Try Meds! Compare! You'll be glad you did!

BOX OF 10—25¢ • BOX OF 50—98¢

Meds



The Modess Tampons

Orthopedic surgeons say: "Over 72 per cent of children prior to adolescence have malformed feet." Col. Norman T. Kirk of the Walter Reed Hospital stated to me: "Tell shoe retailers to fit feet correctly. This would make it possible for us to receive men in the Army with feet that are not malformed and distorted. This condition begins with children . . ."

May I again compliment HYGEIA on this article and hope that we may have more of this type of material.

H. L. WHITMAN
C. S. Pierce Company
Brockton, Mass.

Wrong Age

To the Editor:

I subscribed to your magazine for years and enjoyed it, but then you changed your policy and put in too many "teen age" articles which made it undesirable for adult reading. Therefore I canceled my subscription. I've heard other people say the same thing.

MARION METZ
East Orange, N. J.

First Aid Teacher

To the Editor:

I am so busy teaching four first aid classes I don't seem to have my mind on anything else—just wanted to make sure I didn't miss a single number. You see why HYGEIA is so necessary to me!

MRS. A. B. MANLY
Washington, D. C.

Health Department Library

To the Editor:

As extensive use is made of HYGEIA in the library of this department, we are in need of an additional subscription. I hope you will be able to supply issues from January 1942 so that we may have a complete volume for the year.

ANNA E. WELLS
Department of Health and
Public Welfare
Winnipeg, Manitoba, Canada

Useful in Mexico

To the Editor:

Please remember that my subscription ends in May 1942 and immediately I will renew it because HYGEIA is the most useful health magazine I have ever known.

HERACLIO CABRERA
Orozco y Berra, Mexico

Requests Noted

To the Editor:

I hope to see some article or articles soon on psychiatry. Also some articles on psychometry, psychotherapeutics, etc.

MRS. T. J. MULLEN
Astoria, N. Y.

To the Editor:

Please write more on Malta fever and warn people!

MRS. HUGH M. RAGLAND
Gilmer, Texas.

To the Editor:

Please publish an article on hemorrhoids. . . .

PHYLLIS Y. BENSON
Marshalltown, Iowa

To the Editor:

Do you have in mind publishing anything on the causes and treatment of alcoholism?

DENNIS DICKSON
Chicago, Ill.

Psychiatric Rejections in Selective Service

To the Editor:

I wonder if you could have an article in HYGEIA soon on how many cases of neurosis are found by the draft boards, the chief causes, prevention, cures, etc.

MARY H. MURPHY
Cleveland, Ohio

See "Forecast," page 402 of this issue.—ED.

Business as Usual

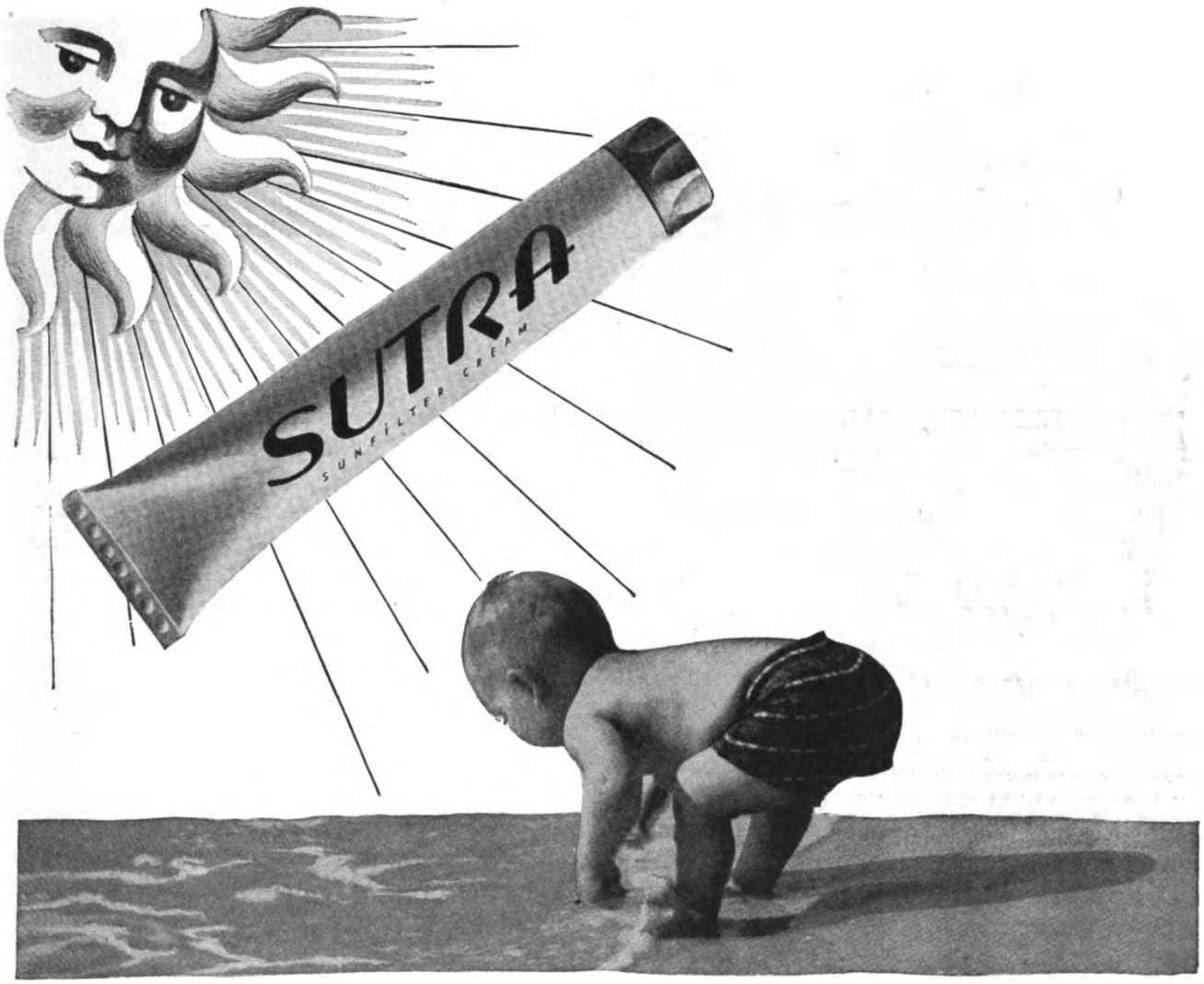
To the Editor:

Several years ago I subscribed to a magazine called HYGEIA, The Health Magazine. I always found it very instructive and I would like to have it again. Do you still publish it?

LUCY M. ATKINSON
Mt. Sterling, Ky.

Yes.—ED.

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He's such a little fellow

Regular sizes 65¢ and $1.00—Generous trial tube 25¢. If your drug or department store is out of stock, send direct to address below for any size postpaid. Add 10% for Federal tax.

Accepted for advertising in the Publications of The American Medical Association

*Reg. U. S. Pat. Off. U. S. Pat. Pend.

The invaluable aid of sun bathing for children is now possible without fear of injury to their delicate skin. SUTRA,* the selective sunfilter cream, quickly and easily applied before exposure to sun, will shield against harmful rays. Spectroscopic tests prove that the exclusive filter ingredient used in SUTRA will permit entrance of the desired tanning rays. With SUTRA both children and adults may now enjoy health-giving sunlight with less chance of harmful results.

SUTRA is non-greasy, stainless and delicately scented. Made as carefully as a fine pharmaceutical.

ARTRA COSMETICS, INC., Bloomfield, New Jersey

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Periodic Health Examinations

A COMPLETE PHYSICAL EXAMINATION nowadays is more complicated than it used to be. It includes a careful investigation of the ability of most of the organs of the body to carry on their functions. Not only are the eyes, ears, nose and throat examined as to their freedom from infections, but also such important organs as the heart, the lungs and the kidneys. The doctor finds out whether or not the heart is doing its work without difficulty. He studies the urine to see if the kidneys are getting rid of waste materials brought by the blood, without any serious destruction of the kidneys themselves. He will ask for an x-ray of the lungs, perhaps also a tuberculin test, then he will tap the chest and listen to the sounds, and he will also use his stethoscope to listen for sounds that indicate whether or not the lungs are functioning satisfactorily. He may even make a test of the vital capacity, which is a determination of the amount of air that is breathed into the lungs and that breathed out. Tests indicate to the doctor whether or not the heart is of normal size, and whether or not the rate and volume of heart beats are as continuous and consistent as they should be.

The modern periodic physical examination involves the use of a number of devices for accurate measurement of factors about which doctors used to guess. With a device called the mercury manometer, the doctor determines the height of the blood pressure at the time when the heart is contracted and also when it is relaxed. With a series of tubes for measurement and solutions for fixing and dissolving various types of blood cells, the doctor determines the number of red blood cells and the amount of red coloring matter they may contain. He determines also the number of white blood cells and whether the different varieties of white blood cells are in the proper percentages.

A complete physical examination includes a study particularly of the orifices of the body. The presence or absence of hemorrhoids is determined, and any abnormal bleeding from the mouth or rectum or any other portion of the body is given special investigation, particularly in persons who are past middle age. The modern physician studies the feet to see whether or not they are able to sustain the weight of the patient. He will ask whether or not the feet swell at night and will determine if the veins have become varicosed or if there is any breaking down of the valves that sustain the column of blood.

In addition to all of the physical tests, the doctor inquires carefully into the habits of sleep and rest, the amount of outdoor air that the patient gets, the amount of exercise he takes and the nature of the exercise. These studies of functions are most useful in determining the capacity of the patient to undergo his ordinary existence. Nowadays special attention is paid to the diet. The physical examination records carefully what the patient eats over a period of days, so that the doctor may make certain whether or not the patient is receiving all of the necessary protein, carbohydrates, fats, vitamins and mineral salts.

In making the complete physical examination the doctor may be aided not only by the clinical laboratory technician who can help in the studies of the blood and the urine, but also by specialists in x-ray who make the necessary pictures of the lungs, the heart and the intestinal tract. Both the x-ray specialist and dentist assist in the study of the teeth so that cavities can be found at the earliest possible

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Torkel Korling

The importance of periodic physical examinations is widely recognized today in educational institutions; many large universities now make such examinations compulsory for all students.

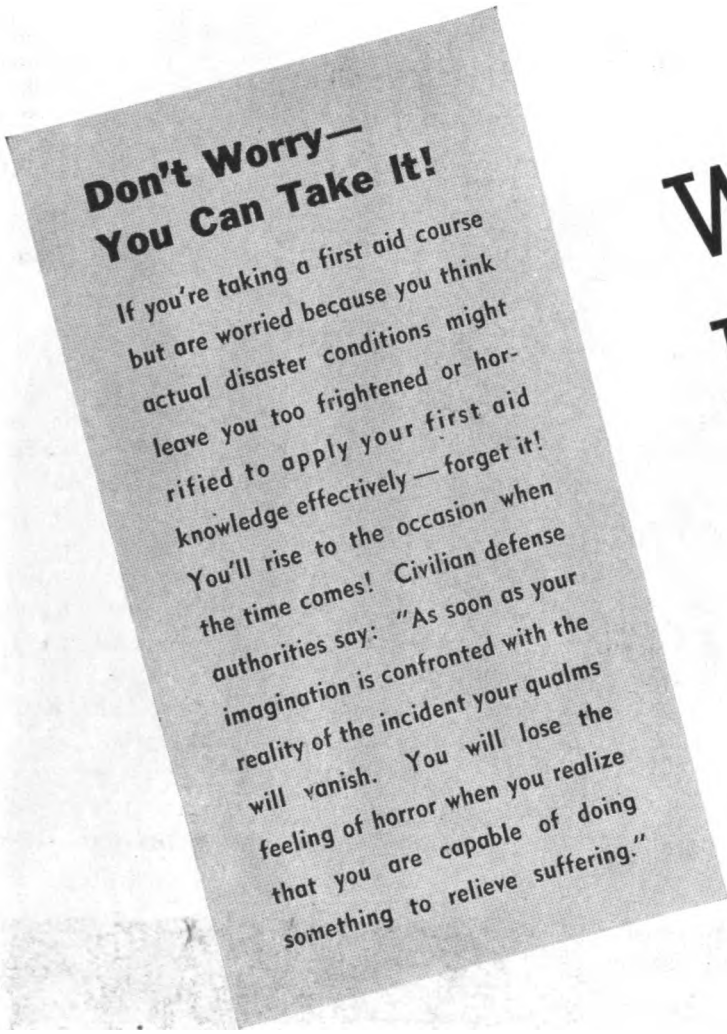
moment and any infections of the teeth which are a hazard to the rest of the body can be properly controlled.

Such accurate measurements as those of height, weight and chest expansion help the doctor in determining whether or not the man or woman is underweight or overweight in relationship to age and height. Since we know that overweight after middle age is a hazard to longevity, this is a factor which demands special attention. Thus a periodic health examination or survey may mean years of additional life. Through recognition of changes at the earliest possible moment, the progress of menacing degeneration and infection is stopped and a suitable plan of living prepared to maintain continuous health. Intelligent executives, leaders in the field of insurance and by far the majority of physicians have learned to appreciate the value of a health examination at least once each year, preferably twice after middle age, and also the importance of utilizing this occasion for the writing of a health prescription. A good health prescription takes into account all of the health needs of the person concerned. It may not recommend a single drug or medicine to be taken internally or externally, but it will include recommendations as to diet, rest, exercise, work, social adjustments and recreation, which are certain to mean increased years of healthful living and activity.

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WARTIME FIRST AID

By LOIS STICE



WILL YOU be ready to lend a hand in an air raid if the Army's sky watchers flash a "red warning" in your town?

The "red warning" is a signal to be used by the Army Interceptor Command to announce that a community is in danger of bombing. It is part of a carefully devised system that provides first a "yellow," then a "blue" warning, both issued confidentially to certain key persons. When "red" is flashed the air raid sirens are sounded to warn the public that an air raid may occur within five or ten minutes.

Air raid wardens, rescue squads, stretcher teams, demolition crews and emergency medical field units all over the United States are now drilling and studying against the day when bombs may fall.

The Medical Division of the Office of Civilian Defense started its work in the summer of 1941 with a three part program. It began to mobilize hospitals, doctors and nurses into emergency field units for the medical care of civilians who would inevitably be injured if war came to the United States. It entered into cooperation with the American Red Cross to train nurses' aides to relieve pressure on hospital nurses, and in another to spread first aid training through the general population.

When the Division issued its first bulletin outlining the Emergency Medical Service, Mayor LaGuardia, then United States Director of Civilian Defense, quoted these words from a British publication of 1938:

"The need for these measures is not related to any belief that war is imminent. It arises from the fact that the risk of attack from the air, however remote it may be, is a risk that cannot be ignored and because preparations to minimize the consequences of attack from the air cannot be improvised on the spur of the moment, but must be made, if they are to be effective, in time of peace."

For the United States in 1941, as for the British in 1938, war was even more imminent than we thought.

Before Japan's bombs crashed down on Pearl Harbor last December 7, many hundreds of hospitals in vulnerable areas had organized for service under the local defense plans. Since that fateful day, additional hundreds have been hard at work to perfect their organizations. Briefly, this is the way the plan will work:

Emergency medical field units are organized in hospitals. The unit consists of two or more squads, each composed of at least two physi-

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cians, two or more nurses and two or more orderlies or nurses' aides. With this organization the squads can be split up into teams which can set up first aid posts close to the scene of a disaster.

The United States is benefiting enormously from study of the British experience of the past two years. Our Emergency Medical Service follows in general the pattern that the British have evolved out of grievous trial and error, though the American version has been adapted to local needs and conditions. Several medical officials who went through Britain's travail spent many weeks in the United States advising our civilian defense planners, and we have had our experts "over there."

One of the earliest lessons that Britain's home defenders learned was that it was not generally imperative to send first aid workers to the scene of a bombing immediately. More often than not, the injured are trapped under rocks and rubble, glass and girders. Many hours of work by the demolition and rescue squads are required before any first aid can be given.

Another British lesson was that air raid casualties are usually severe, though fortunately rarely numerous. Because of their severity, our plans differ from the early British pattern in that our medical field units are based on our hospitals.

In the Emergency Medical Service, American plan, emergency units will be called out by the Control Center of the Citizens' Defense Corps after the air raid warden has reported where and what the damage is. Squads will move to Casualty Stations from which individual medical teams may be advanced closer to the scene of disaster to care for the severely injured persons who are being extricated from the demolished buildings. The casualty stations will limit their work to the care of the walking cases, those who are only slightly injured, and to restoring persons who are perhaps only frightened or temporarily disabled by the blinding, choking dust stirred up by the bomb explosion. The seriously injured will be sent directly from the advanced First Aid Post to the hospitals.

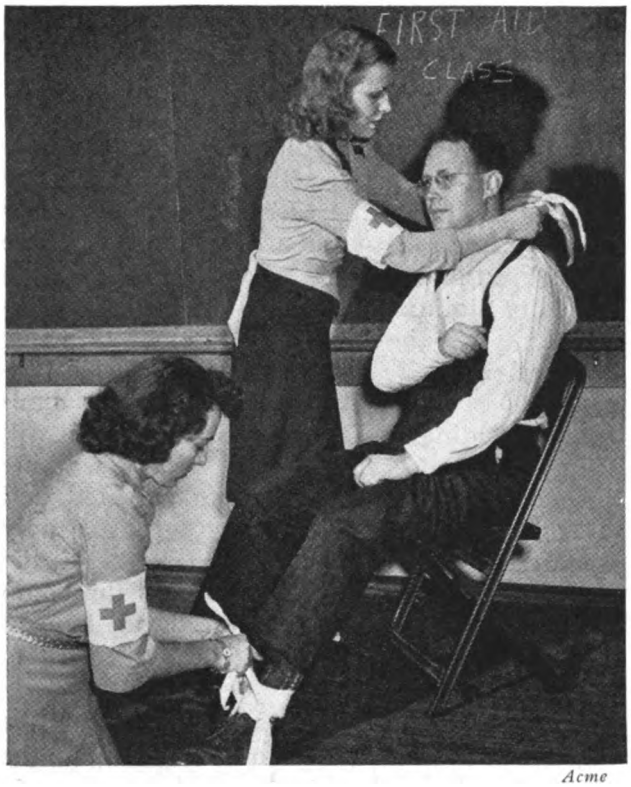
In the emergency medical field units will be experts in first aid who know how to make the injured comfortable, how to prevent shock, control pain and hemorrhage and expedite them to a hospital. All other enrolled civilian



A first aid class practices splinting and bandaging. The first rule in handling fractures is expressed in the picturesque phrase, "Splint 'em where they lie!" First aid courses provide several hours of instruction in the methods of applying splints.

Blue Cross Plans Photo

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Acme

Throughout the country, employee and community groups have responded enthusiastically to the opportunity to learn first aid technic.



Acme

On the West Coast, air raid precautions and blackouts are already an actuality. Movie studio employees take first aid seriously.



Blue Cross Plans Photo

"At least one person in every household trained in first aid" is the goal of the Office of Civilian Defense and the American Red Cross. Thousands of groups like this are being trained.

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defense workers must have some knowledge of what to do until the doctor comes, and they must therefore know first aid.

Suppose one of the trained workers is not at hand when some one in your house or next door is found with a hemorrhage or a broken bone? What will you do if you suspect that a person has been exposed to poison gas? Will you know how to work in the dark and in the midst of confusion? An air raid may go on for hours, and you cannot wait for light and order.

The goal of the Office of Civilian Defense and the American Red Cross is to have at least one person in every household trained in first aid. There are two courses: the specially planned course with twenty hours of instruction for those who have never had first aid training and the advanced course with ten hours for those who have had previous training. The Red Cross already has more than 100,000 instructors and is training several thousands more each week. Physicians, nurses and dentists are reviewing their knowledge and practice of advanced first aid so that they may also teach classes and serve in the field.



Acme

What first aid knowledge can mean in emergencies is demonstrated by ambulance drivers in Britain!

To those whose lives have been so sheltered that they have perhaps never seen a seriously injured person and may wonder if they will be equal to the occasion, the civilian defense authorities offer reassuring words: "As soon as your imagination is confronted with the reality of the 'incident' your qualms will vanish." You will lose, they say, the feeling of horror when you realize that you are capable of doing something to relieve suffering. This account attempts to outline the conditions you may expect to meet if you live in an area likely to be bombed. To be able to practice first aid you must have expert instruction and many hours of continued practice.

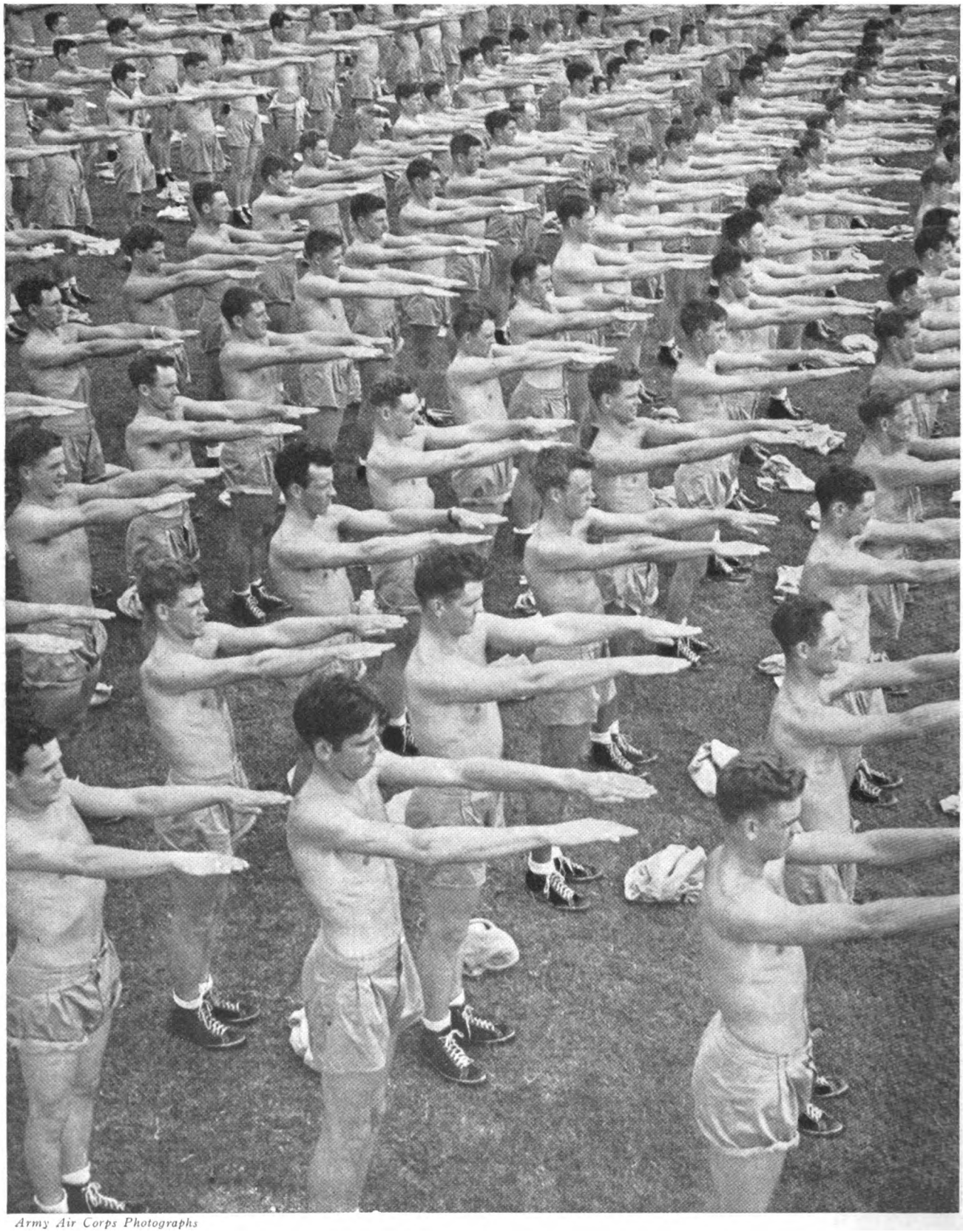
The first aid classes now being given concentrate on the injuries of war. The peacetime course has been stripped down to the essentials needed in the emergency that is now upon us. Bomb fragments cause characteristic wounds. Crushing injuries and fractures are caused by falling timbers. Burns are frequent and serious in this war in which fire is such an important weapon. Although gas has not yet appeared as a major factor in World War II, prudence demands that we learn something of its effects.

When you take your civilian defense first aid course, you will learn what to do for many types of wounds. The first commandment, of course, is to call a doctor.

You will need to know something about shock, or collapse, which occurs in some degree in all injuries. First aid measures for shock are simple, but remember—a war casualty may die if these measures are neglected! Shock following injury probably causes more deaths than the injuries themselves. The nervous system is depressed, the circulation of the blood diminishes so that sufficient blood does not reach the brain. Lay the person flat with his head low and feet raised. Keep him warm with blankets (both over and under him) and hot water bottles. Give him warm and sweetened drinks (unless unconscious), but no alcoholic drinks.

Head injuries are common war wounds. If a piece of what used to be his house or his neighbor's house strikes a man on the head or the blast of a bomb flings him against a wall, his brain may be damaged or his skull fractured, perhaps without any outward sign. Sometimes there is a watery discharge from the ears. There may be a scalp wound, one of the most terrifying of all injuries because it is likely to bleed profusely. *(Continued on page 440)*

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Army Air Corps Photographs

Aviation cadets at the "West Point of the Air," Randolph Field, Texas, are required to spend at least an hour a day at conditioning and hardening exercises which contribute importantly to the muscular coordination and body control needed to fly modern planes.

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Physical Training for ARMY FLYERS

By JAMES E. PIXLEE and E. K. GUBIN

FROM THE MOMENT an aviation cadet enters the United States Army Air Force until the day he finishes his instruction and becomes a full fledged member of the corps, he is obliged to spend at least one hour each day on physical training. There is no exception to this rule, and military drill, no matter how arduous, is not considered as a substitute for meeting the requirement of this daily hour of exercise.

This may seem a strange rule, since the only men accepted as trainees are those 100 per cent physically fit. The examination applicants undergo before they enter the Air Force effectively weeds out the physically unfit, for regulations regarding physical condition are so stringent that 70 per cent of the applicants are rejected on medical grounds. However, the reason for the rule of compulsory physical training is simply this—trainees do not necessarily stay fit merely because they are fit when they enter; they must continue to exercise daily under skilled instructors to keep at the peak of physical condition required by their occupation.

Experiences in the last war showed the necessity of continuous high physical fitness for aviators, particularly pilots. The English discovered at the end of the first year of World War I that of every 100 pilots killed during that period, 2 died as a result of enemy action, 8 from defective equipment, and *90 from defects in the pilots themselves.* By the end of the third year, the figure of 90 was reduced to 12 by carefully watching the physical condition of the individual pilots and not allowing them to fly if they were in any way physically under par.

Nowadays we look further than the pilot. The physical training program in the Army Air Force is compulsory not only for those training to be pilots, but also for those training to be gunners, navigators, bombardiers, yes, and even for those training to be mechanics! Steady nerves, a good eye, and muscles that respond with split-second speed are obviously necessary for the pilot of a military plane that is hurtling through the air at a speed in excess of 400 miles an hour. However, in a bombing plane, or any plane carrying a crew, all members of that crew must be at their peak physically in order to perform the manifold duties required of them. Any error on the part of any member of the crew, no matter how small, may not only cause the destruction of the plane itself and its crew, but also may endanger the lives of other air crews or civilians.

An aviation authority has estimated that only 2 to 5 per cent of all aviation crashes are due to mechanical failure. The training section of the Army Air Force is determined that no error due to faulty physical condition will occur on the part of any one while Army aviators are in training.

The physical training program is not designed solely to build muscle, although one of the important results of this program is the maintenance of the organic vigor of trainees. In addition, the well rounded athletic program of the Air Force reduces nervous and mental tensions, develops neuromuscular coordination, skill and stamina, keeps up the morale of the cadets and otherwise prevents them from going stale from the arduous aviation training program they must undergo. Athletic games are used freely in the program, and to most of the men the physical training is real recreation rather than compulsory work.

To coordinate this physical training program with regular aviation instruction is not easy

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PRACTICE MAKES PERFECT

So air cadets combine sports and conditioning exercises with practical routines to perfect body control under flying and combat conditions



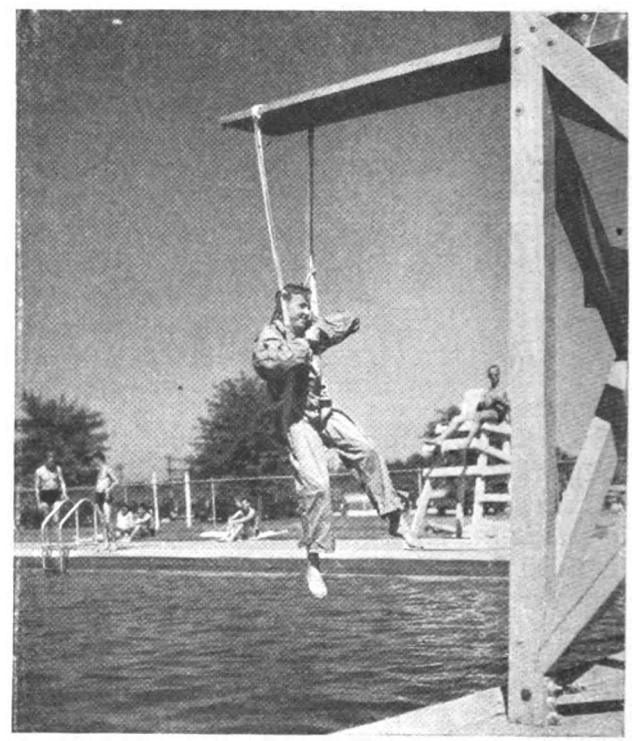
Every flyer is a potential parachutist and must know how to hit the ground without incurring injury—hence "jumping practice."

for today the Army Air Force is engaged in a huge expansion program. Two years ago we were far behind other nations in the training of military aviators, but now that we have started our expansion we will soon lead the world in trained military aviation personnel. In 1939 we trained only 600 Army Air Corps pilots, in 1940 the annual rate jumped to 12,000, in 1941 it totaled 30,000, and by June 30, 1942, we will have a qualified Army Air Force of more than 750,000 men.

Coordination of physical training with flying instruction is accomplished by having a civilian Physical Training Director stationed at Washington with the designation of Technical Advisor to the Chief of the Air Force. The physical training section is a subunit of the Air Force Training and Operations section. Approximately 350 senior and junior civilian physical training directors comprise the present staff, at least one director being assigned to each school, and more where required. Directors work in close cooperation with Flight Surgeons.

At each training establishment exercise is part and parcel of the daily curriculum. Actual classes in physical training are held, and in all places supervision of this activity is in the hands of one of the qualified experts who are civilian employees of the Air Force.

Under present plans each cadet will receive forty weeks of aviation *(Continued on page 462)*



Knowing how to get out of a parachute harness

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Split second timing wins air battles for U. S. pilots! An excellent conditioner, fencing takes its place with calisthenics, tumbling, handball and team sports in the rigid training program at Randolph Field. Cadets in the background "limber up" before flying.





and into the water at the right time and in the right manner may save lives—cadets learn this lesson for keeps!

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NEW FACTS



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ABOUT HALITOSIS

Popular notions about the origin and nature of bad breath are exploded by a new series of scientific experiments, reported here **By ROBERT MARIS**

PRODDED BY FEAR, millions of Americans are scrubbing their teeth or rinsing their mouths out with antiseptic solutions in a frantic effort to protect themselves from the social isolation, failure and unhappiness attributed to bad breath. Worse yet, many are dosing themselves with harmful laxatives, perhaps with permanent damage to their intestinal function, on the strength of the dangerous half-truth that the intestines are the source of halitosis and that common intestinal disorders, such as constipation, may be the responsible cause.

As in the case of other more or less universal ailments like dandruff and athlete's foot, the actual incidence of halitosis is not kown. Dentists—who should know—say that nearly every one has bad breath some of the time, but that the number in whom the condition is constant is not large. Recognizing that occasional halitosis may be caused by specific disease of the mouth, teeth or pharynx, physicians have never agreed on the cause of the thousands of cases obviously not susceptible of this pat explanation. The gastrointestinal tract has been suspected for years in certain groups, but the evidence was flimsy until Drs. Burrill Crohn and Rudolph Drosd, New York gastroenterologists, came forward with conclusive data based on a recent series of experiments with hospital patients recovering from intestinal operations. Dentifrice and mouthwash, they say, can serve only to mask halitosis temporarily, but never to eliminate it; irrigation of the colon is almost equally ineffective, since they found that the odor originates in the *small intestine.*

Interested in the problem because of the conflicting opinions which prevailed, Drs. Crohn and Drosd started their experiments in 1940 with a patient who had undergone ileostomy—surgical removal of a section of the small intestine—with both openings of the intestine anchored in the abdominal wound. The patient was receiving nourishment by means of a tube inserted through the nasal passage directly into the stomach, and thus an ideal combination of conditions for the study of odors was presented: the mouth, stomach, small and large intestines could be observed practically as independent units. The doctors noticed at once that the odor of paraldehyde was apparent on the patient's breath for two days after the drug had been administered through the nasal tube, even though the stomach had been washed out and no trace of the drug or its characteristic odor remained in the gastric juices examined!

Using a strong solution of garlic, they found in further tests that an odor became apparent on the breath and in the discharge from the site of the ileostomy in from three to four hours after injection into the stomach through the tube. By examining the contents of the stomach periodically after each injection, they proved that no odor appeared immediately on the breath even when the gastric content was redolent of garlic; yet later, long after the stomach was free of any residual odor, the breath reeked with an emanation which persisted for as long as forty hours.

In contrasting experiments to ascertain the role of the mouth in halitosis, they painted the surfaces of the teeth and the interstices with a strong garlic extract. The odor was gone in an hour! Similarly, when whisky was introduced into the mouth and stomach and then washed out before it could be absorbed into the intestines, its odor disappeared within twenty minutes. The smell of whisky which was allowed to remain in the stomach, moreover, didn't show up on the breath for three or four hours after injection. Perhaps there's a tip in this for drinkers: Get to your teetotaling aunt's early in the evening and like as not she'll never know that you've stopped for a drink after work. But go home early—the later you stay the more noticeable your breath will become!

Group experiments with subjects representing a wide variety of *(Continued on page 434)*

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The HUMAN EYE

The complex structure of the human eye and the functions of its various parts are explained **By JOHN O. McREYNOLDS**

THERE IS A MULTITUDE of details in the various processes of development from the single fertilized cell of the ovum, or egg in the ovary, to the exceedingly complicated human body. We can undertake here only a brief review of the changes especially affecting the eye.

The fertilized human ovum begins without the slightest conceivable delay or hesitation its mighty task of constructing the intricate human organism, and the work must be completed on schedule time of nine months, in spite of all difficulties that may be encountered!

The initial steps are chiefly concerned with the production and multiplication of cells which constitute the necessary building material. These innumerable cells are produced by the process of constant and uninterrupted division and subdivision—a single cell becoming two, then four, then eight, then sixteen, then thirty-two and so on indefinitely, with the result that instead of a single speck of living matter, we soon have literally millions of them.

These are soon arranged into two layers, or groups. The outer layer is called the *ectoderm*, and the inner layer is called the *entoderm*. Later, there is developed between these a third, middle layer called the *mesoderm*. These three layers are spoken of as the germ, or embryonic, layers. Still later there is instituted an additional process called *histogenesis*, which indicates the differentiation of certain groups of cells for the purpose of forming ultimately the different parts of the body.

Throughout this rapid unfolding of these complicated plans we can discover the mysterious imprint or command of nature. One group of cells is destined to produce the tough fibrous structures of the eye; another group, the transparent fibers of the crystalline lens; an additional group forms the muscles, blood vessels and pigment of the iris; while still another group creates the nerve tissues of the retina as well as the motor and sensory nerves.

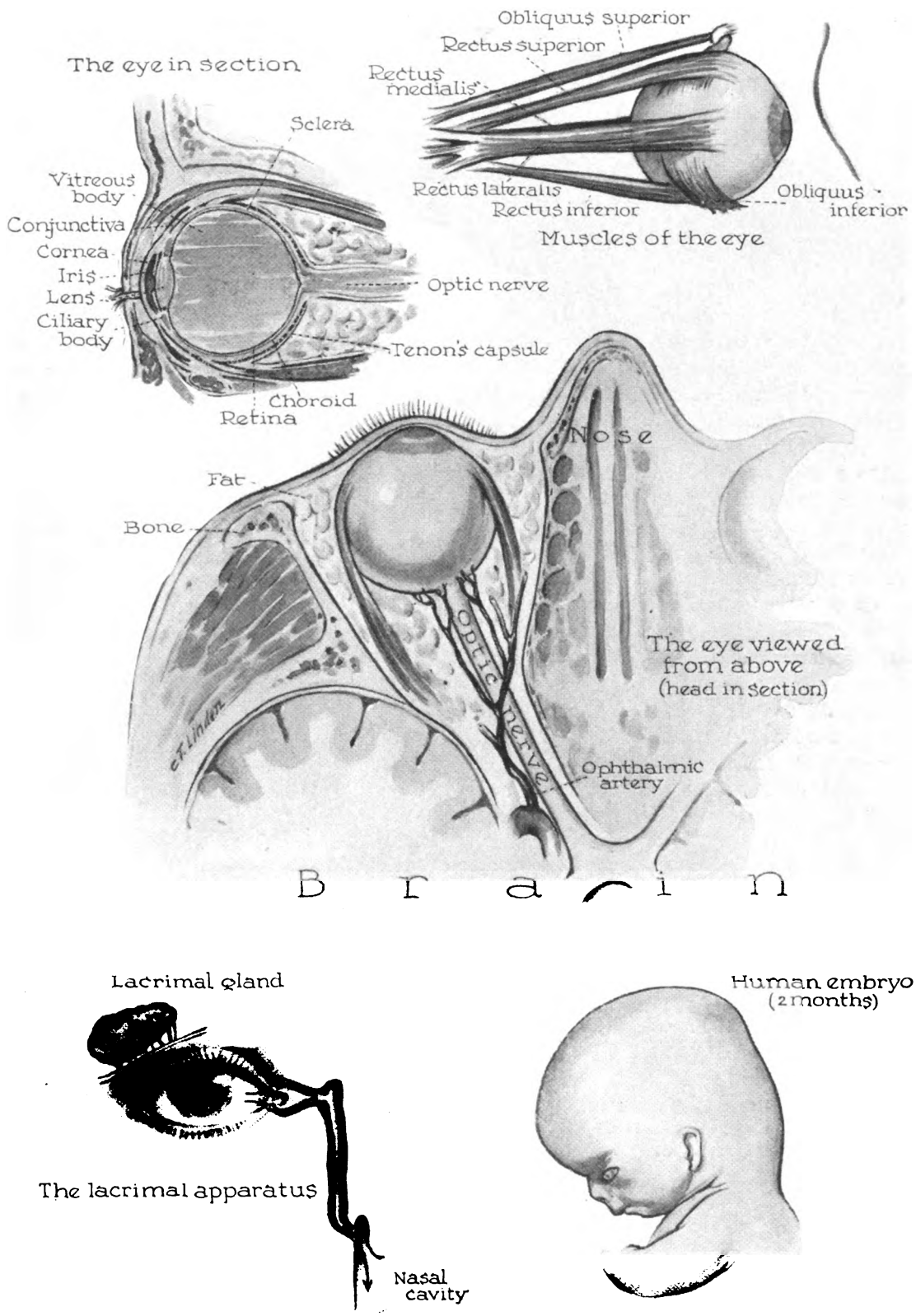
A feature of absorbing interest is the fact that these original germ cells contain within themselves the inherited latent powers that determine their destinies. From the very beginning it is ordained that certain cells have been set apart for the production of certain kinds of structures, and that they perform their appointed functions with marvelous fidelity. In the main, the inherited potentialities of each group of cells govern their activities, but many incidental circumstances may be introduced which might modify the final result.

At the end of the second month of pregnancy, the entire human embryo is about one inch in diameter, while the embryonic eye itself is already definitely outlined and well on the way toward its final purpose of serving as a visual organ, one of the most important factors of human life.

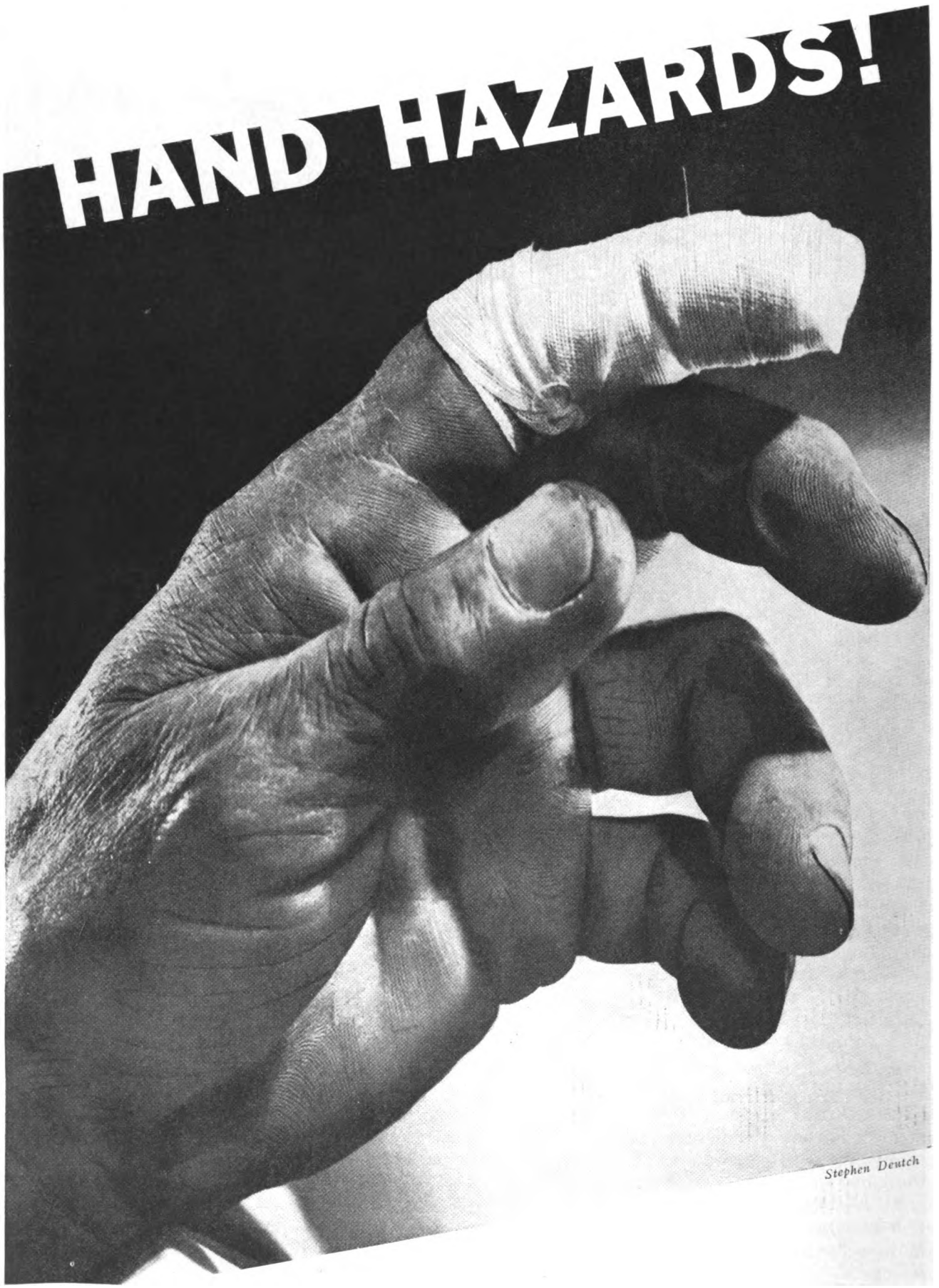
During the prenatal development of the eyes certain changes take place in the fragile bony framework of the skull whereby two cavities are formed for the reception of the eyeballs. Even at this early stage a lash-fringed shade—the lid—is drawn over the eyeball and is provided with such a delicate adjustment that in life it will respond automatically to the needs of the individual.

In human beings the lids are kept closed during prenatal development for the increased protection of the eyeball, while in some lower animals, as in puppies, the eyelids remain closed for several days after birth, until all danger from external injury and infection has disappeared. These are embryologic or prenatal safeguards for the important function of vision, but errors in nourishment and certain kinds of toxins or poisons may enter as active factors, causing failure in this process of prenatal development. *(Continued on page 470)*

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***By a wide margin, injuries to the hand head the list of industrial and domestic accidents. Yet most hand injuries are avoidable—with a little care. How to escape these disabling injuries is told by* RAYMOND A. BRUNER**

WHEN A GREAT PIANIST, violinist or surgeon injures a finger or a hand the event becomes an important story for news service wires. Every one realizes how careful a man in such a profession must be to protect his hands against the slightest injury or infection.

It seldom would be considered news, however, were a politician to receive such a disability, but in a large midwestern city recently a seemingly trivial scratch on a politician's hand became a story worth printing. Meeting a number of people at a banquet, he warmly greeted an old friend and as he losed his grasp, he winced with a sharp sensation of pain. A ring on the other man's finger had scratched him slightly. He paid little attention to it and went the rounds of eating, speechmaking and jubilation.

Later that night after he had gone to his hotel room, he noticed a little swelling around the wound, applied some antiseptic and went to bed. Toward morning he was awakened by an intense throbbing of the finger and found it was badly swollen. Because the pain was intense, he immediately called a doctor, who realized the seriousness of the infection and sent him to the hospital.

He was in the hospital for two weeks. He learned that, had the doctor not acted promptly, he might have lost his hand, his arm or even his life! Like most of us, he never dreamed that a trivial hand injury could cause such serious illness. Because the holding of public offices had for years required a great amount of speechmaking, he had regularly employed a nose and throat specialist, but he had never thought very much about his hands.

Among all the injuries reported to state industrial commissions, those of the hands are still in the lead. The most hazardous place for the hands is the farm, and the next is the home. The number of hand injuries among 1,000 workers in a large industrial plant would be only a small fraction of those occurring in 1,000 homes. According to some medical estimates, the fraction would be about one in 100.

The care of the hands is attracting an increasing amount of attention from the medical profession, particularly now that hands have become such a vital factor in winning the war. A study of the anatomy of the hand clearly suggests many danger points that cannot be too carefully considered. It is a highly complex structure assembled for great versatility of action. Touch the end of the thumb to each of the four fingers in succession and observe the fine mechanical arrangement necessary to make such movements. Watch your hand closely as you tie a knot in a piece of string and observe the beautiful coordinated motions. The hand has twenty-five bones and more than thirty tendons, all of which must articulate smoothly. To carry out their operations they must be well supplied with a complexity of nerves, blood vessels and lymphatics.

Especially receptive to infection are the lymphatic vessels and the sheaths or tunnels inside of which the tendons move. Infection may enter the finger tips and be carried as far as the shoulders by way of the lymphatic vessels. The tendon sheaths extend down to the wrists and provide an easy path for bacteria to travel. An infection of the thumb, for example, may travel to the wrist by way of one of these sheaths and back up into the other fingers. Some infections that are permitted to become far advanced before a doctor is called provide a baffling problem for the surgeon, who must know by what pathway they have spread before he operates to halt their progress.

The housewife probably needs to be more wary than any other potential victim of hand injuries, for she is one of the most frequent sufferers and unlike factory workers often receives no immediate medical attention. The young bride whose chief experience has been the operation of a typewriter or the scribbling of stenographic notes is a ready victim of many types of injuries. Coming from an office into the home she gets her first introduction to complex gadgets and machines she has never been taught to respect.

One of her wedding presents may have been a beautifully streamlined meat chopper, which she is anxious to try, so she goes to the meat market and buys a thick slice of steak. Cutting it into chunks, she *(Continued on page 446)*.

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How to Enjoy

THE BENEFITS of an occasional illness -say once a year- -are so obvious that it is a reproach to the medical profession that more publicity hasn't been given to the matter. The ailment must not be too severe, but it must be grave enough, of course, to have caused some preliminary anxiety and to make necessary the luxury of having the doctor call at the house. The latter event in itself is healthful and exhilarating; it gets the convalescence under way before a single medicine bottle is open. The patient must be in fresh pajamas and between crisp sheets, preferably the best in the house. Naturally, the room has been made tidy, and if possible the whole household has been put on a workmanlike basis to service the sickroom efficiently.



RELIEF—THEN REST

The good physician's first concern will be to dismiss the idle fears of the patient. There is no trouble with the appendix. There is nothing wrong that a little rest will not fix. The throat is a little red. There are some other symptoms that will yield to a prescription. The patient must stay at home at least three days, and when he gets up again he must take it somewhat easier.

These are words that have an infinitely soothing sound. The patient must resign himself to being waited on for



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Poor Health



Getting the most out of the occasional mild indisposition which puts us to bed for a few days is a fine art. Reprinted from "Topics of the Times," a column in the New York Times

several days. He must eat off a tray, he must drink a great deal of orange and other fruit juices. He must have delicacies to tempt the appetite. There must be an atmosphere of relaxation and quiet. Trouble must stay outside the door.

RADIO—BUT NOT TOO MUCH

Just as it is unwise to crowd too many boisterous visitors into a hospital room, so it will be imprudent for our patient to bring too much of the outside world to his bedside. While he is abed there is almost nothing he can do to help win the war; it will not help him or the war to listen to it on the radio. He had much better listen to some danceable music.

A detective story where the emphasis is on deduction rather than violence will be helpful, and there should be magazines with summery pictures that draw the attention forward to a happier season. These should stress the remodeling of old houses on New England hillsides or portray the delights of a visit to the Alps. Everything having to do with an enforced stay in bed should be on the utterly impractical side.

If the convalescence has started, as it properly should, with twelve to fourteen hours' sleep, the patient is in a suitable frame of mind to contrast *(Continued on page 462)*





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Advice to the DENTALLY FEEBLE

By MARGATE KIENAST

MANY TOOLS needed for national defense are missing. Thousands of them have been lost from the personal equipment kits of young soldiers in the Army and young men and women in industry! The empty places in which they belong—whether the tools have been broken, damaged or weakened by neglect and eventually discarded—are now just untidy parking lots for debris.

Face facts. Could you get a job in Uncle Sam's Army? You are a grownup—how many teeth have you left in your mouth? Teeth are tools which are called on to work. How many vacant spaces are being used as parking lots for pieces of stray food just long enough for decayed bits of the meal before last to damage your digestive system?

How many teeth have you? If you have just a few old timers left you don't have to sit there and take it. Somebody can build you a new set and work them in around your original stock. The thing you have to do is to find a good dentist. Decide upon the alibi you'll give him for staying away so long. You can easily convince yourself of the cash and carry advantages of starting out now. Go to your dentist once—then be firm about continuing.

Life is too crowded to spend a great deal of time and effort on your dental equipment. Your teeth are certainly worth a few mighty efforts to put them in shape as a starter. Then you can relax and taper off to the good old American system of having your chewing apparatus checked at regular intervals. Your repair bills will be small, time lost will be cut down and serious difficulty is not likely to follow.

Don't squirm about that opening session with the dentist! You do have a twinge now and then when you bear down on that left rear tooth. You have been meaning to do something about it since a year ago ground-hog day, haven't you? Sticking oil of cloves into it last time didn't help, did it? And you had a bad taste in your mouth when you bit on it.

You should have a bad taste, if there is pus in the structures around the tooth. It depends on what you are chewing, of course, but the pressure you use in an average bite is estimated at 126 pounds. University of Minnesota athletes rolled up that score on a gnathodynamometer—the instrument that measures bite pressure. If you apply such pressure several thousand times a day, it is easy to understand how a deep lying infection between the root and the jaw bone can easily be forced into the blood stream. And when those germs go on tour, you are liable to get a kick back from a far-away spot in your general system.

The idea of going to the dentist is to save teeth. Take yours to be saved. Decay always begins on the external surfaces of a tooth. It never bores from within. Certain areas on tooth surfaces are more liable to decay than others. Pits and fissures on the grinding edges make them especially susceptible. Surfaces in between the teeth are more likely to decay than outside exposures which get smoothed over by the adjacent tongue, lips or cheek.

Of what is a tooth made? Various tissues—none of them bone. One of your handicaps is that if you crack them up they'll never repair themselves, as body parts made of flesh and bone will. A hole in your tooth doesn't heal!

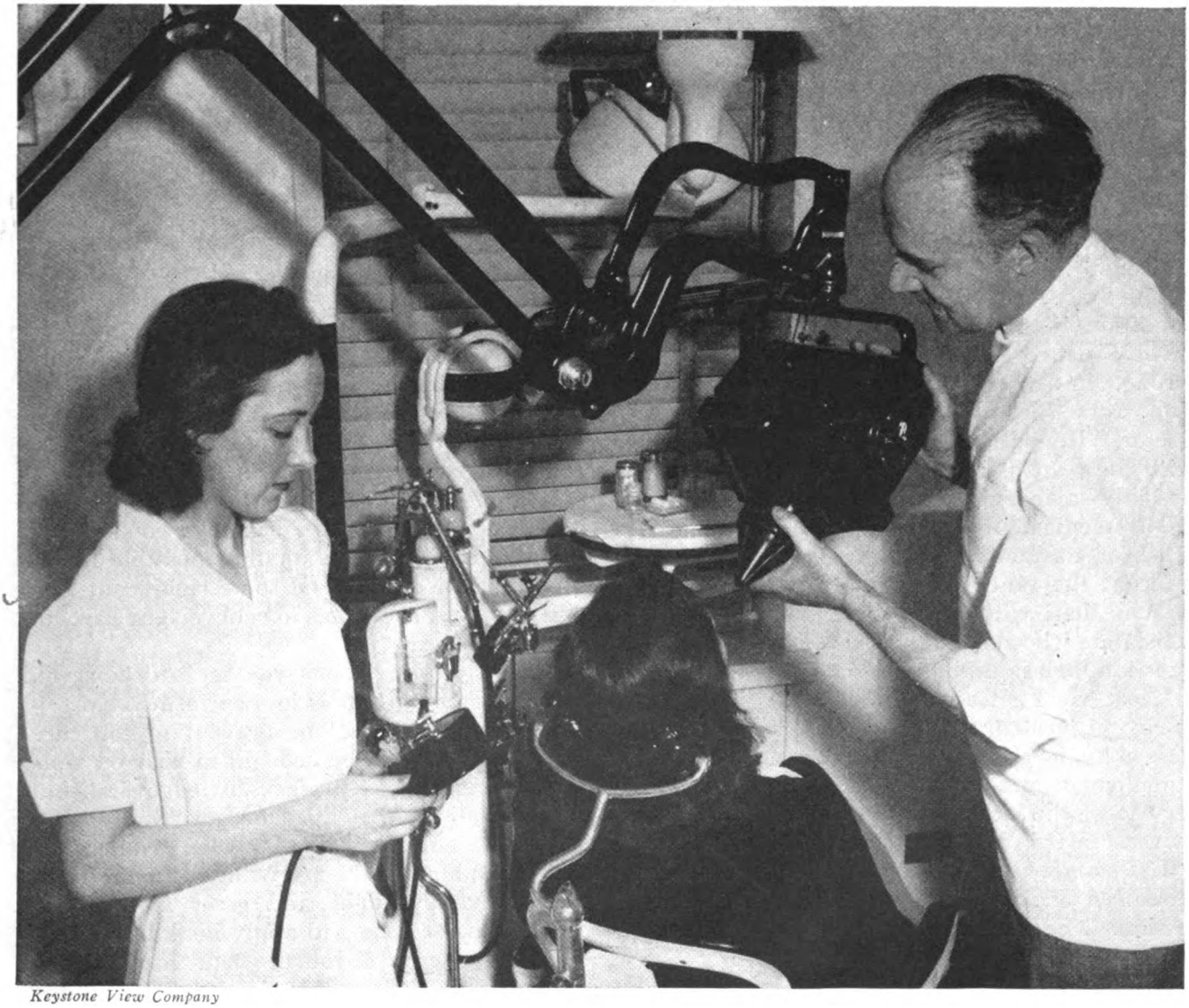
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How does the hole get there in the first place? The enamel which covers exposed surfaces is made up of small, six sided prisms like a six sided pencil before it is sharpened. If you have been biting into very hard candy or cracking nuts with your teeth, you may crush some of the tiny prisms. The broken prism will leave a hole in the enamel. Then the tooth will decay if the hole is not properly prepared and filled by a dentist. That is the accident angle.

Most dentists today believe that dental decay is not produced by any single factor but by a combination of factors. Known, proven facts are few. Scientists are working in laboratories all over the world to make the mouth divulge a few more secrets. Research workers agree that there is a relationship between eating candy or excessive amounts of sugar and the tooth decay which they call caries. You will be wise to use sparingly candy, jelly, pastry, refined sugar and highly sweetened foods. Foods rich in carbohydrates produce conditions favorable to growth of acid-forming bacteria. Acid-forming bacteria initiate decay.

Only 1 per cent of adults have caries free teeth.

But you know a lot of people who never go to a dentist? They take care of their teeth at home? Tell them to their teeth that home care can never be depended on to keep teeth healthy! It does not even guarantee keeping them clean, for only a dentist can remove calculus completely, even *(Continued on page 443)*



Keystone View Company

X-ray pictures and other modern aids in diagnosis may reveal disease in teeth which are neither loose nor painful. Routine examinations may reveal danger signs which will point the way to disease prevention. Examinations may also provide the clue to other symptoms.

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How to Choose Your Doctor

***The best way to judge a doctor is the way doctors judge each other; standards set by the profession are the best yardstick of professional competence, says* GREER WILLIAMS**

SOME TIME in every one's life, usually several times, such a change occurs in the way he looks, feels, and acts that the first thought of every one concerned is "Get a Doctor!"

The first step is to get rid of some alarming condition in the body. It may or may not involve aches and pains. But whatever is wrong, the sufferer wants to feel well again. The worse he feels, the more he wants a doctor. He will entrust the doctor he calls with the responsibility of restoring his health, possibly saving his life.

The medical profession has set high standards for its members. If some of them are inferior, the fault lies no more with the profession than with the people who elect the legislators who set standards of licensure. The question then is this:

"How can I get a good doctor?"

Obviously all those with "M.D.'s" cannot be judged by the nobility of the profession—which is dedicated to the science of healing and the service of the sick—but each must be judged by what *he* is in his profession as an individual.

The standards by which a physician can be measured are furnished by the medical profession. *The way to judge a doctor is the way doctors judge each other.* It is severe.

Let us first consider what we have a right to expect from a man who assumes the responsibility for health and disease. A noted specialist told me that he demands three things of his fellow physicians and surgeons in this order:

1. *Honesty.* Faith in one's doctor is often more important to recovery than the treatment he prescribes, but it is false security if the physician is dishonest in his claims, intent, diagnosis, treatment or fees.

This specialist was inclined to rate doctors as more honest than most people because higher education, the inviolability of natural laws and the gravity of life and death tend to induce moral integrity in them.

2. *Service.* Careful examinations take time. You want a doctor who will give you enough attention to leave the smallest possible likelihood that he has missed some significant sign or symptoms, as well as to relieve your psychologic anxieties.

3. *Knowledge.* When you see a doctor you wish everything that is known in medical science about the detection, prevention and cure of your ailment to be brought to bear on your case. Some might place knowledge first, but the specialist put it third because you cannot get the benefit of existing knowledge unless the doctor is honest (keeps within the limits of scientific knowledge) and gives you service (allows himself time to apply his knowledge).

I would add a fourth item to the list: *generosity.* While this is implicit in the humanitarian nature of medical care, I know of no quality more desired by the patient in his doctor. The basic problem of the cost of

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medical care is economic, of course, but more patients would get what they *can* pay for if generosity, like honesty, did not suffer from selfishness.

How do you find the doctor who has honesty, service, knowledge and generosity?

The most common way, I suppose, is to ask a friend, but it's not the right way. If you ask three or four friends and they all recommend the same doctor, that man has something in his favor. But the average layman's advice is not worth much. He went to a certain doctor, and he got well and was not overcharged apparently. A doctor can be judged by his recoveries or deaths only if he has an unusually low number of the first and an unusually high number of the second.

Of course, in an emergency you just take any doctor. You look in the classified directory, call the police or a hospital, or perhaps you just pick up the telephone and ask the switchboard operator for a doctor.

Rather than taking a chance of getting the worst doctor in an emergency, is it not better to inform oneself on the whereabouts of competent medical service before one needs it?

Find a doctor before you need him! That is the first rule. It is of especial importance to a family taking up new residence. Women and children are frequently in need of medical attention. Find your doctor while you have time to investigate him, and *be sure to investigate him.* That's the second rule.

You should investigate the man you want to become your doctor, using the standards by which the medical profession judges its members.

First there are the formal standards set by the American Medical Association which, with a membership of more than 120,000 of the 180,000 Americans licensed to practice medicine, is the No. 1 medical standard-setting organization. The American Medical Association, more than any other agency, must be credited with raising the quality of medical practice in this country. It has set high standards of education, training and experience for physicians. On the basis of its requirements, a patient has the right to ask his doctor if:

MEDICAL STANDARDS

1. He is a graduate of a recognized medical school. Such a school requires at least two years' college education and four years' medical education. Moreover, practically all its graduates have hospital internship.

2. He interned in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association.

3. He is licensed to practice by a State Medical Board. This is the absolute minimum of qualification.

4. He is a member of his County Medical Society.

5. He is a member of the staff of a hospital approved by the American Medical Association, the American Hospital Association and the American College of Surgeons, or is permitted to use the facilities of such a hospital.

That is the least you can ask of a general practitioner. The five points give him a passing grade in his profession. The fifth point is particularly important. Good hospitals try to get good doctors. There are some exceptions to all points except the license to practice. A good doctor *may* come from a poor medical school, but he needs a fine record to make up for the fact.

One cannot rely solely on American Medical Association or medical society membership to make a doctor competent or to keep him competent. Additional assurance of competence is present if:

ADDITIONAL QUALIFICATIONS

6. He is a member of a medical school faculty or represents his specialty on the staff of an approved hospital or clinic.

7. He has had postgraduate training, meaning he has been a resident physician or surgeon in a hospital after completing his internship or has returned to a medical school for study after having entered practice.

8. He is a member of special societies, that is, associations of specialists in the diseases which he treats. It is a distinctive achievement for a specialist to be certified by one of the boards (such as the American Board of Surgery) formed jointly by the special medical societies, the American College of Surgeons, and the American Medical Association to lead and to counsel in their particular fields.

Should a patient ask a doctor all these question when he walks into his office? Well, it would do no harm, even if it shocked the doctor! But this information may be obtained beforehand from either local or national medical directories, which are available in public libraries, newspaper offices, city health departments, hospitals and many doctors' offices. The information may also be obtained from the offices of the county medical society or the

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Chicago headquarters of the American Medical Association.

Those are the formal standards. In addition, there are some informal standards which a person looking for a doctor can apply:

1. A good doctor does not advertise his name, specialty, methods, cures or low fees in any commercial way. Beware of him if his name appears frequently in any publications other than medical journals and texts, unless he is famous. One may even be skeptical of some who seem to be famous, since many carefully nurture among the laity an unjustified reputation for greatness. While the American Medical Association holds it unethical to advertise, a few low cost, nonprofit clinics which use educational advertising may be excepted. The doctor who boasts of low fees, however, is a doubtful fellow to whom one may apply the saying, "Nothing is so expensive as cheap medicine." He is worse if he solicits business among his patients on the basis of secret methods and cures. Every legitimate remedy is freely disseminated throughout the profession. It is unethical for a doctor to patent a medicine or apparatus to make a profit or to keep it from his fellows.

PERSONAL CONDUCT

2. A good doctor will conduct himself with dignity, sobriety and modesty before his patient. Be suspicious of the "doc" who talks too much while dealing with you professionally, whether about himself, you, or other doctors. Doctors will seldom criticize other doctors to laymen. When they find it necessary to warn the patient, they do so with a minimum of tactful words. Cross any doctor off your list who is known to be suggestive or indecent with women patients.

3. A good doctor does not always know exactly what's wrong with you. The biggest mistakes of diagnosis are made when the doctor is most certain. If he hesitates to state your ailment, he may be simply careful. If he suggests calling in a consultant or referring you to a specialist it is frequently a point in his favor. He is protecting you from his own limitations.

4. A good doctor keeps his person and his office clean and neat. Lots of shining equipment does not indicate a shining judgment in using it, however. Beware of doctors who specialize in office showmanship. Starchy attendants may disguise shabby service.

5. A good doctor keeps good case records. If there is any *one* thing by which you can measure him, it is this. If he makes notes on what you tell him and if he fills in all the blanks on your record card, he is helping himself remember. He is trying to avoid the *carelessness* which causes most medical mistakes. It is a sign of an orderly mind.

6. A good doctor is highly respected by other doctors; the greater the doctor, the more respect. They evaluate him on his medical judgment. This is the greatest of all criteria but the hardest to measure. Medical judgment gives you the benefit of the doctor's total experience at the decisive moment (another axiom: there is no substitute in medicine for experience). It is a matter of intelligence. The best way for a layman to obtain the benefit of excellent medical judgment is to inquire about for *the doctor's* doctor. Sick doctors are fiends for good medical care!

PROFESSIONAL CHARGES

7. A *good* doctor will not charge you too much. It has been my experience that the best doctors charge you the least, both in terms of how much you pay and how much you get for what you pay. Always ask the doctor his fees for any medical care he proposes to give you, and *always tell him your financial status!* Doctors' fees are more or less standardized according to the patient's income, and the best is not likely to charge you more than the worst for a given treatment or operation.

In the matter of fees in my experience the typical physician usually compromises. If you are poor he will take your case for an absolute minimum fee, and you can pay when you are able. This is something less than gratuitous, since it weighs you with a debt which is legally collectible. But after appealing to the physician's generosity, you have no alternative if he accepts your bad credit. You can only hope that, if you are unable to scrape up the money, he will write it off after sending you a few bills.

There are a few genuine humanitarians who will tell you to forget it. My own idea is that the greater the doctor, the bigger his heart. Indeed, if I were penniless and sick in a strange city tomorrow I would, if I had the strength left, seek a doctor with a reputation for greatness, make an appointment and tell him:

"Doctor, I have no money, but I am sick. I came to you because I want the best care. Will you give it to me?"

I think he would.

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At the right hand of your doctor . . .

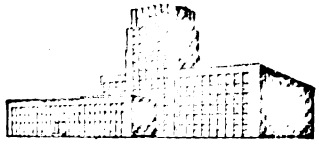
Your doctor looks upon the nurse as a valued associate. For it is she who carries out his instructions; keeps his patients comfortable and content; calmly meets emergencies that may occur in his absence; and reports all her observations to him.

This calls for qualities of mind and character far above the average—and these a young woman must possess before she is admitted to the study of nursing. Her professional training is long and exacting. It includes an understanding of the common medical diseases, and the nursing care they require. It comprehends pre-operative and post-operative care of surgical cases. She frequently takes specialized post-graduate work in such subjects as anesthesia, operating room technique and the care of children.

She is quite as proud of the R. N. granted to her by the state as your doctor is of the M. D. he earned at medical school. And well she may be. The special abilities which she brings to the care of the ill and the suffering are among medicine's most powerful aids.

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These members of the 4-H Club, a national organization of farm youth, were chosen health champions at the club Congress in Chicago last winter. They are (left to right) Lary Townsend, 18, Natchitoches, La.; Catherine Monsees, 16, Savannah, Ga.; Keith D. Koch, 16, Waverly, Ia.; E. Lucille Hall, 16, Arnett, Okla.; Lois Schreiter, 17, Greenville, Wis.

Five wealthy young people

IF GOOD HEALTH is one of life's most valued possessions, the young people pictured above are indeed wealthy. They should be an inspiration to every 'teen-age person in the country.

Young people in their 'teens are old enough to assume much of the responsibility for keeping themselves in good physical condition. They need parental help and guidance, but *self-reliance* is the goal.

In a 'teen-age program for keeping fit, the following are all-important:

1. ***Sufficient sleep.*** From 9 to 10 hours or more—particularly in the younger 'teens.

2. ***The right foods***... in the right quantities... at regular hours. Rapidly growing youngsters need more food than at any other time of life—and a nice balance between foods which supply energy, and foods which build bone and body tissue. Girls in their late 'teens should especially beware of self-imposed reducing diets.

3. ***Exercise, recreation***... preferably in the open air and sunshine. All 'teen-agers need regular exercise. Those who work should seek it after hours and week ends, especially if they are desk workers.

4. ***Cleanliness.*** A bath a day, if possible. Hands should be washed before each meal... teeth brushed twice a day. Proper habits of cleanliness will help youngsters keep more personally attractive.

Following these simple rules will go far toward keeping young people fit. Failure to observe them may invite such troubles as general feeling of fatigue and poor health, weak digestion, constipation, poor eyesight, poor teeth.

Wise 'teen-agers will have a yearly health examination—by the family physician, or the school physician. Teeth should be cleaned and examined by a dentist or dental clinic every six months, and defects corrected at once.

The 'teens should be the happiest, most carefree years of life. Good physical condition will help you enjoy them to the utmost. Metropolitan will send you a free booklet containing additional information about 'teen-age health. Ask for 62-Z, "Health, Happiness, and Long Life."

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New Facts About Halitosis

(Continued from page 421)

surgical short circuits of the gastro-intestinal tract confirmed the conclusion that the mouth and stomach were innocent, but that odors appeared on the breath within a predictable period after absorption of a substance into the small intestine. The next step was to trace the path of absorption and exhalation from the small intestine, where the odors disappeared, to the breath—where they consistently appeared again, hours later. Obviously, the doctors felt, there must be a "storehouse," and they suspected the liver. To prove it, they selected three patients suffering from cancer of the pancreas necessitating surgical drainage of the bile secreted by the liver. Administering garlic again in a new series of tests with these patients, they found a strong odor in the bile within an hour after injection. When the garlic was introduced directly into the colon, the odor also appeared in the bile after about an hour, and later on the breath. Colonic irrigation after the odor became noticeable in the bile failed to eliminate it or prevent its later appearance on the breath. Subsequent experiments with the volatile substances found in the excreta produced the characteristic odor of halitosis in precisely the same patterns. The basic guilt of the small intestine and liver was conclusively established.

From the liver to the breath, Drs. Crohn and Drosd reasoned, only one path was possible. Earlier research showing that garlic ingested by mothers before delivery could be detected on the breath of newborn infants had proved that odors can be circulated by the blood—the only possible means of transference in this instance. This much of their conclusion is hypothesis, but the doctors are confident that the odor of volatile matter absorbed in the small intestine is only partly excreted in the bile; most of it is picked up by the circulating blood, which in turn gives it up in traversing the small air cells of the lungs, whence it is exhaled on the breath.

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The frequent occurrence of halitosis in ulcer patients who are on a milk diet—rich in odorous fats—and its disappearance when fats are removed from the diet are recognized clinical phenomena: proof, say the doctors, that their hypothesis is correct.

To eliminate halitosis, Drs. Crohn and Drosd recommend a diet low in fat content—with emphasis on cereals, eggs and lean meat. In persistent cases, "direct attack" on the liver or small intestine may be necessary, since these are the chief sites of the disorder. Constipation and colonic irrigation can be forgotten, as far as their effect on halitosis is concerned. Mouthwash never provides anything more than temporary concealment of an unpleasant breath, lasting from twenty minutes to an hour, nor will stomach pills relieve the symptoms of a malady which originates elsewhere. Perennial bridesmaids and unsuccessful salesmen who suspect the worst should put their laxatives, antiseptics and tablets back on the shelf—and watch their diets!

ARMY ORGANIZES PLASTIC SURGERY SERVICE

There will be fewer facial disfigurements from face and jaw injuries in this war than occurred in the early part of the last world war. A special program has been organized by the Army Medical Department which provides for special care for such injuries in the advance zone of operations, Leigh C. Fairbank, Brigadier General and Assistant to the Surgeon General, United States Army, Washington, D. C., reports in *War Medicine*.

It no longer will be necessary for such casualties to be transported to large hospitals far to the rear of the front line before receiving any of the special care such types of wounds require. All medical personnel, from that of the battalion aid station to the general hospitals far to the rear of the combat zone, are being given special training in the care of such wounds.

As General Fairbank points out, "New developments in restorative aspects of surgical prosthesis [replacement of an absent part by an artificial one] and dental repair afford possibilities today which far surpass the facilities available in past years."



For Mother... Father... and the Children... Dole Hawaiian Pineapple Juice is a good source of vitamins B_1 and C

Locate the members of your family in this chart. You'll see how much of their daily allowances of vitamins B_1 and C can be supplied by a 6-oz. glass of Dole Pineapple Juice.

The percentages in these charts are based upon the vitamin standards in the new "Dietary Yardstick" developed by the Committee on Food and Nutrition of the National Research Council.

	VITAMIN B_1		VITAMIN C	
	RECOMMENDED NAT'L RESEARCH COUNCIL MILLIGRAMS	DOLE	RECOMMENDED NAT'L RESEARCH COUNCIL MILLIGRAMS	DOLE
AVERAGE WOMAN Moderately Active	1.5	20%	70.	17%
Very Active	1.8	17%	70.	17%
Sedentary	1.2	25%	70.	17%
Pregnancy	1.8	17%	100.	12%
Nursing Mothers	2.3	13%	150.	8%
AVERAGE MAN Moderately Active	1.8	17%	75.	16%
Very Active	2.3	13%	75.	16%
Sedentary	1.5	20%	75.	16%
CHILDREN 3 Years	.6	50%	35.	34%
4-6 Years	.8	38%	50.	24%
7-9 Years	1.0	33%	60.	20%
10-12 Years	1.2	25%	75.	16%
BOYS 13-15 Years	1.6	19%	90.	13%
16-20 Years	2.0	15%	100.	12%
GIRLS 13-15 Years	1.4	22%	80.	15%
16-20 Years	1.2	25%	80.	15%

DOLE
Hawaiian Pineapple Products
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Short on Sugar? Try Syrups!

The necessity for conserving sugar makes familiarity with syrups and their use a "must" in most families. DORIS McCRAY presents useful facts and suggestions

IN MAKING THE CHANGE from sugar to syrups, the first difference we notice is in their water content, which varies from 25 per cent water in molasses to 35 per cent in maple syrup, in contrast to 0.1 per cent in white sugar.

For table use, syrups are easy to pour from the pitcher. But in cooking, the high moisture content alone will upset the baker's and chef's formulas. Lower temperatures are required in baking. A peculiar flavor may develop in boiling.

One who pours syrup into a favorite batter is apt to have a most amazing cake, gummy and sticky, possessed of compactness resembling putty, a strong "browned" odor and a top crust reminiscent of a volcanic eruption, as if the cake rose suddenly but settled back for lack of any structure to hold it high. One is faced with the necessity of following revised directions to fit each kind of syrup, with a reason for the procedure not always clearly understood.

SYRUPS: FURNISH FINE FLAVOR

When not altered in the cooking, syrups are prized for their distinctive flavors. White corn syrup has a delicate, bland flavor that blends particularly well with fruits. Maple syrup has a volatile flavor that escapes in cooking. Sorghum flavor blends with apples and biscuits. Molasses will flavor cookies inimitably. Honey makes cake that becomes moist and mellow.

A strong, distinctive flavor is associated with higher mineral content. An advantage is found in the mineral content of some syrups as compared with white sugar, which furnishes no minerals at all.

We are wise to choose those foods that furnish minerals needed by the body in preference to highly refined foods which furnish no minerals at all. One nutritional authority states that "In general, the proper place of sugar in the food supplies and eating habits is not in such concentrated forms as candy, nor in the indiscriminate and excessive sweetening of all kinds of foods, but rather as a preservative and flavor to facilitate the introduction into the dietary of larger amounts of the fruit and the milk, the importance of which to health has been increasingly emphasized with each year's progress in our knowledge of nutrition."

HOW SWEET IS SUGAR?

While moisture content and minerals are accurately measured, relative sweetness is detected only by taste. This varies according to whether the tongue is dry or moist, what part of the tongue the sample is placed on, the temperature of the sugar or syrup and the fatigue of the sense of taste. Some tasters can detect sweetness in lower concentrations than others. There is disagreement among the experts, hence there are several sets of figures for comparative sweetness. Here is one of them: sucrose, 100; dextrose, 75; levulose, 173; maltose, 50 and lactose, 28.

Sucrose, as we know, is cane or beet sugar, our ordinary white sugar in the sugar bowl. It is always assigned a value of 100 when such comparisons are made. Lactose is the sugar in milk; one of its uses is for infant feeding. Levulose, or fructose (fruits sugar) is widely distributed in natural foods such as fruits. It is conceded by all to be sweeter than sucrose, but there is no agreement as to how much sweeter. Dextrose is known to the baker and confectioner as a fine, white crystalline sugar, or its solution, obtained from corn. It is also found in natural foods.

Honey contains nearly equal parts of dextrose and levulose. When it crystallizes, the greater part of the levulose is in the syrup, and the dextrose is in the crystals. Maltose is an intermediate product obtained when corn syrup is made from corn. Maltose is prepared commercially from starch by an enzyme; it is also found in germinating cereals. Corn syrup contains both maltose and dextrose.

In order to get the greatest sweetness from a sugar, have it completely dissolved, as in a syrup, and served at room temperature or slightly above. A custard tastes sweeter when it is warm than when it is chilled or frozen.

SUGAR IS FOUND IN MANY FOODS

Practically every food, even meat, contains some sugar. Dextrose often constitutes 20 per cent of the total weight, or more than half the solid matter, in grapes. It is also found in sweet corn, onions and unripe potatoes. Young corn and peas contain sugar which is transformed to starch as the seeds mature. Levulose occurs, with dextrose, in plant juices, fruits and honey. Starch found in unripe apples and bananas is changed to sugar as the fruits ripen.

Fruits for drying may be allowed to ripen until the sugar content is so high that no added sugar is wanted. But fruits for canning or shipping must be harvested while still firm enough to handle, hence they need added sugar to appeal to popular taste.

Prunes, dried peaches, dried apples and pears, as well as raisins and dates, all have a high natural sugar content and sweet flavor, so that they may be prepared for the table without any added sugar or other sweetening. In fact, they may be added to tart fruits as a sweetener. Raisins may be added in cooking berries. The juice of dried or canned peaches is an excellent sweetener for lemonade, although it alters the flavor.

Fresh orange juice needs no added sugar, since the fruit is allowed to ripen to a definitely high sugar content on the trees. Orange

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juice may be used to sweeten lemonade. But if you want to sweeten it without covering up the lemon flavor, use plain white corn syrup.

COOKING APPLES

A fruit which may be enhanced by the addition of strong flavored syrup, rich in minerals, is the apple. Unless a sweet variety, fully ripened, is available, you want some sweetening. Considerable water may be added to fruit, but soda should never be added to tart fruit in order to save on sugar, because soda is destructive of vitamins.

For the greatest sweetening effect, cook the fruit first, then remove it from the fire. Add the sweetening, cover and let stand. A small amount of granulated sugar is said to "point up" the flavor. Sorghum, sorghum-flavored corn syrup, molasses or other syrup may be used.

PUDDING AND PIE

You may feel that desserts are merely for pleasure, but they have some nutrition value. A sweet dessert at the end of a meal gives a feeling of satisfaction or satiation. A small amount of sugar or syrup may be used to sweeten a large amount of other ingredients. Valuable food may be included, such as milk, eggs or fruit juice.

Syrup may be substituted for sugar, cup for cup, although the sweetness may not seem as great. Select the syrup according to the desired flavor. Additional thickening may be needed in a pie filling. When a tested recipe is not available, cook the pie filling thoroughly, cool to room temperature, observe its consistency and thicken more if necessary. Pour into a pastry shell and cover with strips of pastry. Bake in a fully preheated, hot oven long enough to bake the pastry, the filling having been already cooked fully. Serve "pie filling" or pudding in sauce dishes, and the consistency may be softer.

CUSTARD

Honey, corn syrup or the other syrups may be substituted for sugar in baked custard. The resultant flavor is not the same, but it is delicious. In a custard stirred and cooked in a double boiler, use some flour, one tablespoon (level) to each cup of milk. It makes the custard slightly thicker and less apt to curdle.

COOKIES

Find recipes which call for syrup and use the kind specified. Cake flour makes a more tender cooky than bread flour. Follow the usual precautions for making good cookies. Be sure that the oven is fully preheated for each batch. Bake only one sheet of cookies at a time. A lower temperature is required with molasses, chocolate or raisins in cookies. Bran is especially good in molasses cookies, because it gives them an interesting texture and appetizing appearance.

CAKES

Use only recipes that have been tested and use the kind of syrup called for. Use cake flour. Mix as directed. Control the oven temperature carefully. Be especially careful to bake cup cakes or layers if directed, since the mixture may not be satisfactory in a loaf.

CAKE FROSTINGS

Frostings cannot be made with syrups, because of their high percentage of noncrystallizing sugars. If honey is boiled with hard water for fondant, add one half teaspoon of lemon juice to keep it from turning dark and developing a strong flavor. You can sprinkle a little sugar and chopped nuts over the top of a cake and brown lightly. You may provide a custard or thickened fruit juice made entirely of syrup or meringue.

SYRUPS ARE NOT INTERCHANGEABLE

In baking formulas or cooking recipes, the syrups are not interchangeable, because they vary widely in moisture content and in percentage of noncrystallizing sugar, also in total solids and acidity. All these factors make a great deal of difference in cooking time, baking temperature and the amount of soda or lemon juice to be added.

Find a satisfactory formula and follow it exactly. Many fine results are possible with syrups.

WHITE CUP CAKES

½ cup butter
1 cup white corn syrup
¼ teaspoon salt
2 cups cake flour
3 teaspoons baking powder
3 large eggwhites
1 teaspoon vanilla

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Cream the butter until fluffy; add the corn syrup gradually while beating. Add sifted dry ingredients and mix well. Beat egg whites until stiff but not dry and fold into the batter carefully. Bake in muffin pans about 15 minutes at 375 F. The cake is not sweet, but texture is excellent.

HONEY MERINGUE

1 egg white
⅛ teaspoon salt
¼ cup strained honey

Put ingredients in a bowl and beat until peaks of meringue stand up stiff. Spread on cakes before serving.

CHERRY PIE

3 cups cooked cherries (drained from juice)
3 cups cooked cherry juice
Few grains salt
½ cup cornstarch
2 cups strained honey
¼ cup granulated sugar
½ cup water
1 teaspoon butter
2 drops red coloring

Sift cornstarch with sugar, add water to make a smooth paste. Add salt, cherry juice and cherries. Stir and cook until completely thickened. Add remaining ingredients. Let cool to room temperature. Line a pie plate with pastry. Add the filling. Cover with strips of pastry. Preheat the oven fully to 550 degrees F. Turn the heat regulator back to 450 degrees F. and bake about 15 to 20 minutes until the pastry is baked but the filling does not boil up and run out.

MOLASSES COOKIES

1 cup dark molasses
½ cup shortening
3¾ cups cake flour
1 teaspoon ginger
½ teaspoon salt
1 tablespoon milk
1 teaspoon soda

Warm the molasses, add shortening and beat until smooth. Add part of the flour and mix well. Dissolve the soda in the milk and add it to the batter. Then add remaining flour and mix smooth. Roll dough thin and cut cookies. Bake on a greased baking sheet. Bake at 350 degrees F. about 10 minutes.

"More than ever before—bread deserves to be called the Staff of Life"

Editorial in the Journal of the American Medical Association, April 4, 1942.

The important subject of enriched bread was thoroughly discussed in the editorial quoted above... comparing regular white bread and the new enriched bread.

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Wartime First Aid

(Continued from page 415)

A person who has a head injury, even a slight one, must be seen by a physician as soon as possible. In the meantime the first aider should keep the victim warm and quiet, apply a sterile compress to a scalp wound if there is one and to the ears if there is a discharge.

Internal injuries, frequent in this war of bombs, are dangerous and severe. A physician reporting from England recently said that often there is only a small wound on the surface, but extensive disruption beneath. All the first aid helper can do until the doctor comes is to keep the injured one warm, prop him up if the injury is in the chest or head or keep him lying down if it is in the abdomen. He must be taken to the hospital on a stretcher.

Worst of all injuries to confront a novice, perhaps, is injury to the face. Although disfigurement of the face is gruesome, it is not so dangerous as many other injuries. The person with the injured face should be turned on his face so that blood will not run into the nose and mouth. Bandages or compresses should be applied to the wound. If the jaw is broken, the tongue may fall back in the mouth and obstruct the air passages. The person caring for the casualty must watch for this, pull the tongue forward and apply a bandage to the chin according to special instructions taught in the first aid class.

What to do to control hemorrhage is one of the vital lessons to be learned by those who are likely to be caught in a disaster. With splintered glass flying in all directions, there may be cut arteries. You can identify arterial bleeding by the spurting of blood with each beat of the heart. Most people think first of using a tourniquet as a means of stopping the bleeding from an artery. Actually, a tourniquet is rarely necessary. First aid instructors constantly warn that the tourniquet is dangerous unless it is loosened every fifteen minutes. A pad over the wound, a firm bandage combined with elevation of the injured limb will nearly always stop bleeding, they advise.

For quick control of a hemorrhage until a tourniquet or dressing can be applied, the skilled first aider knows certain points at which arteries lie so close to bones that pressure with the fingers will stop bleeding. These the novice will learn from study of diagrams with the aid of the instructor. Pressure is applied as follows:

Bleeding from the scalp and forehead: pressure just in front of the opening of the ear on the side nearer the bleeding.

Bleeding from the face below the eyebrows: pressure against the side of the lower jaw just in front of the angle of the jawbone on the bleeding side.

Bleeding from the neck or cut throat: pressure with the fingertips on the neck beside the windpipe on the bleeding side and with the thumb behind the neck, pressure toward the backbone with ball of fingers.

Bleeding from shoulder or armpit: tip the head toward the shoulder on the injured side and press down with the thumb at the side of the neck just behind the collar bone.

Bleeding from the arm: press with fingers on the inner side of the arm just below the armpit.

Bleeding from the leg: put victim on his back and press downward with straight arm pressing the heel of the hand into the middle of the groin.

Fire is an important element of strategy in this war. The enemy showers incendiary bombs by the thousands not only for indiscriminate destruction, but also to give him light by which to bomb special objectives. Besides fragments of exploding bombs, there are exposed electric wires, brands from burning buildings and dangerous chemicals to cause all degrees and types of burns.

If a doctor is immediately available, all the first aider does is to apply a sterile dressing over the wound without removing clothing, wrap the victim in a blanket and call the doctor. Persons with burns may need treatment for shock.

If a doctor is not available, something must be done to relieve pain. Cut clothing away from the burn, but avoid tearing or pulling. Apply baking soda solution on a gauze compress, cover the burn, bandage lightly, wrap the victim in blankets and see that he is transported immediately to the hospital.

One big warning is given to those who must handle a person with burns: Never under any circumstances put any ointment, salve or other greasy substance on a burn! These things only make treatment more difficult for the doctor. He has to remove them before he can do anything for the burn. They are not easy to remove because they will not dissolve in water. Valuable time is lost, and suffering is prolonged.

Phosphorus shells or bombs sprinkle particles of phosphorus on the skin. As you know, phosphorus burns in air, and therefore the particles keep on burning where they strike the skin, causing deep burns that heal slowly. Immerse the wound in hot water, which melts the phosphorus so that it may be wiped out of the burn with gauze. If you have to use cold water, the particles have to be picked out under water. The cold water does not melt the phosphorus, and the particles will ignite again when the air strikes them.

Another way to keep phosphorus from burning is to cover it with copper sulfate solution if it is available. The solution coats the phosphorus with copper and stops the burning. Then the particles can be lifted out. Once the phosphorus is removed, the burn can be treated.

Fractures are many and complicated, and directions for first aid are extensive and detailed. Only a sketch of what you will have to learn can be given here.

First you must learn to recognize a fracture. These are the signs as given in the "Handbook of First Aid" prepared by the Office of Civilian Defense in cooperation with the Red Cross for the use of civilian defense workers after they have taken the course:

1. Pain and tenderness.
2. Partial or complete loss of use.
3. Deformity—may be pronounced or very slight.

(Continued on page 454)

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Meat occupies a prominent position in any well-rounded adequate diet. It provides an abundance of high quality proteins needed by the body the year round, summer as well as winter. It also supplies important amounts of B vitamins and the essential minerals iron, copper, and phosphorus. In your meal planning this summer, remember that the nutritional needs of your family are not changed because of the seasons; adequate nutrition, providing all of the essential nutrients in ample amounts, must be maintained at all times.

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The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
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Dental Defects and Nutrition

By LIEUT. COL. AMOS R. KOONTZ

SELECTIVE SERVICE examinations have focused the attention of the country on the teeth of men of military age. Dental defects have furnished the largest cause of rejection for enlistment in the Army during the present emergency.

Of 900,000 men rejected for physical reasons, 188,000, or 20.9 per cent, were rejected because of dental defects. That dental defects furnish the cause for more rejections than any other single condition is not surprising when one considers that dental caries is said to be the most prevalent of all diseases. I was interested in seeing whether the state of nutrition of the registrants concerned had any causal relation to the dental defects.

Investigation shows that the cause of dental caries is not well understood. The American Dental Association is conducting investigations with regard to this. What causes this condition to be so widespread in the teeth of some people, and so nearly absent in those of others? There are a number of secondary factors, all of which are believed to play a part, as follows:

(1) Diet—by influencing the bacterial flora of the mouth; and also possibly by failure to contain certain vitamins, or enough of calcium and phosphorus. We do know, however, that many people on a well balanced diet suffer with dental caries. On the other hand, the Korean people who live on a rather limited diet are said to have a very low incidence of dental caries until they start acting as cooks or servants in British or American homes and eating European or American food, at which time their dental troubles begin. It has also been pointed out that dental caries is prevalent in South Africa, where there is plenty of sunshine to furnish vitamin D, which is considered important in playing a part in the prevention of dental caries.

(2) Dental caries is on the whole less prevalent in primitive people than in highly civilized people, but is far from being entirely absent in them. Various factors in our modern life have been considered as causes for the increase in dental caries among civilized people. Such things as our type of lodging, our clothing and the nervous strain under which we live have all been blamed. Also it has been stated that vitamin B has been removed in the processing of many of our foods, thus leaving the teeth without protection against sugars.

(3) The general health of a person is not necessarily an index of his susceptibility to dental caries. Many people in excellent physical condition have widespread dental caries, and others much below par physically have excellent teeth.

(4) There are well known regional differences in the extent of dental caries. A dentist in one county in the Texas panhandle examined at random the teeth of forty-three native born resident persons in the county, whose ages ranged from two years to beyond middle age, and found not a single decayed tooth or filling! The county is located on a high plain, the topsoil of which is a dark, sandy loam, below which there is clay containing a high percentage of calcium carbonate. The wheat produced in the county has a high protein content, and the flour produced from the wheat has about six times as much phosphorus as the average flour. The locally produced milk contains 30 per cent more phosphorus than the average. It is presumed that all vegetables, dairy and meat products are correspondingly high in elements necessary to tooth building. The water has a high content of fluorine and calcium.

In 1918 the men examined for the service showed a widespread regional variation in the percentage rejected for dental defects in the various states of the union, ranging as high as 102.85 per thousand of those examined in Vermont to a low of 2.9 per thousand in Arkansas. The figures from the Civil War show that the highest rejection rate for dental defects was also in the New England states. Figures for dental caries in school children show the same regional variations as the Army figures.

(5) Acid-containing candies and medicines apparently predispose to caries by direct decalcification.

(6) Heredity undoubtedly plays an important role in the susceptibility to this condition. The evidence for this is unmistakable, as can readily be shown by the study of any considerable number of families. Often people living under conditions varying in no manner except in the factor of heredity will show a wide variation in their susceptibility to dental caries.

Considering the foregoing, it seemed rather useless to try to link undernutrition with dental caries in Selective Service registrants. However, it was felt worthwhile to study 100 men who had been rejected because of dental defects alone in order to determine their state of nutrition.

These men were taken at random from white registrants rejected because of dental defects, and only 10 of the 100 were shown to be below the minimum weight as given in the Army weight table. Even these would have been accepted by the Army as far as their weight alone was concerned. Then, too, it is impossible to say whether the undernutrition in these cases might not have been due to dental caries, rather than that the undernutrition caused the dental deterioration.

True, such a small series of cases presents no conclusive evidence as to the relationship between dental caries and malnutrition. However, in view of other evidence presented against a causal relationship between the two, the evidence disclosed by the study of these few cases is believed to be significant.

Furthermore, local board members and local board doctors have consistently complained about having to reject because of insufficient teeth men who were all excellently nourished and actively engaged in industrial pursuits requiring hard labor.

Now that we are at war, the regulations may be changed so that most of the men rejected because of dental defects alone may be rehabilitated and taken into the Army.

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Advice to the Dentally Feeble

(Continued from page 429)

from an exposed surface. There are dozens of ideas in general circulation on care of the teeth, but the number of *facts*, backed up by scientific studies, is regrettably small. You can't keep your teeth in your head with ideas.

The idea that a clean tooth never decays, for example, that this or that pleasant dentifrice will safeguard your molars from those creeping crypts is false. The modern human being needs to brush his teeth daily to remove accumulations of soft and sticky food. But brushing will not prevent decay, just as bathing the body surfaces will not prevent disease. Both are cleanly habits which may reduce the likelihood of infection. That is their sole value.

Perhaps you have had the idea that filling small cavities tears down the tooth and weakens it, if the holes are not big enough to ache. Actually, cavities that are not filled weaken the teeth. If small cavities are properly prepared and filled the whole progress of decay is halted. Don't wait for toothache! Some of the troubles most in need of attention do not warn by aching. Teeth may be infected without your knowledge. There may be no pain or discomfort. Teeth that do not hurt may be hopelessly diseased and a menace to health and life.

Breaks in teeth, whether from injury or from little-understood action of digestive juices in the mouth, just have to be plugged. Every six months is not too often to drop around and ask your dentist if you need repairs. Teeth can be saved by early and frequent dental care—and hurting teeth can often be placed in healthy condition. The reason for going to a dentist is to save teeth. He'll care for your caries!

You may have been eating foods which you believe grownups should eat to build and maintain strong teeth. A balanced diet is important to your general health and nutrition, but research has not yet been able to pin down the part that diet plays in control of dental decay. Its role, once the growing and developing years have passed, is not understood. Most experts agree that what you eat after nine years of age has little effect on your tooth structure. Of course, many believe that overuse of carbohydrates will make teeth more liable to decay. But decay begins on the outer surface of a tooth. It does not bore from within.

Then there is the old idea of personal attractiveness—beauty—charm! Poor teeth are something to hang an inferiority complex on, all right, if you are thinking about one. They are a nice preface to a nervous breakdown, too. Just keep on hand a mouth full of decayed abscessed or grossly irregular teeth and you are bound not to enjoy life too much. You won't be sought as a close companion by friends and neighbors. Business associates can't brush your teeth, but you'd be surprised what they can do on a general brush-off! The idea of the importance of white, strong, healthy teeth to individual ego elevation is sound enough. It has been the key with which promoters of commercial products have turned on their best selling campaigns. This is a surefire way to make people spend more money than they should on the home care of the teeth.

But listen: There is no such thing as a harmless bleach or whitener. Nothing should be done to attempt to change the natural color of the teeth. No safe dentifrice will do this. No dentifrice will change the chemistry of the mouth from acid to alkaline or from alkaline to acid. No dentifrice will cure bad breath or dental disease. No dentifrice will prevent dental decay.

The sole value of dentifrices—peppermint, wintergreen, cinnamon or clove—is to assist the toothbrush

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in cleaning the surfaces of the teeth. Brushing alone will not prevent dental caries, it is just one of the helps to use to develop a healthy mouth. There is no real difference in the cleaning power of tooth powder and tooth paste. The important thing is to use a dentifrice which does not contain harmful ingredients.

Mouthwashes serve no purpose other than the removal of debris. A bottle of mouthwash on the bathroom shelf will guarantee you, when you use it, nothing but a feeling of cleanliness and a taste of flavoring. Mouthwashes are classed as "cosmetics" by governmental agencies regulating medicines and drugs.

You should be responsible for carrying out your own program of dental care, but the most important part is to seek regular supervision by the dentist. If some one started you out when you were two and a half and you have kept on the routine ever since, you don't even have to be told. But if you have reached the point where you have to pick up the pieces, spend your money where it will do the most good. See a good dentist and have him plan a cost schedule so care of your teeth won't bite your budget. Remember to select your dentist on the basis of his ability. Unsatisfactory dental service may seriously affect your comfort, your health and even your life.

Pick a good dentist. You are the consumer, you know. People who use dental services regularly know that a top-notch dentist does not advertise. He doesn't sound off with a lot of claims before he looks at your teeth. He washes his hands with soap and water before he touches your mouth. He puts an individual cup where you can reach it. He sterilizes his instruments. He is clean about his person and about his equipment, and he protects you by wearing a clean work coat and using clean towels. You expect as much from a barber; be fussy about your dentist.

Don't go into a dentist's office and start telling him how to do things. When he gets to work, give him a chance. You probably have a specialty, too, whether it's diamond setting, carving figurines out of wood, cooking a steak over an open fire or tossing up a green salad. You don't want some one sprinkling advice on your special performance. Don't walk in and say "Here, pull it out!" Give the man time to check up on the condition of your teeth. Toothache is not always caused by decay. Hurting teeth may often be saved and placed in healthy condition, and on the contrary, teeth that do not hurt may be hopelessly diseased and a menace to health and life.

A good dentist makes full use of modern aids. You are seeking preventive dentistry. Preventive dentistry includes frequent cleaning of the teeth, the filling of small cavities and early recognition and treatment of infection of the gums. But it also includes exploring possibilities of future trouble.

Formerly, teeth were removed only if they were sore. By that time they were usually loose. Today, x-rays and other helps in diagnosis reveal diseases in teeth which do not ache and which are firm in the mouth. Routine examination of a person's mouth should include x-ray pictures which show each tooth from at least two different angles. If the dentist suspects that decay may be attacking the surfaces in between the teeth, x-ray will help him find out. X-ray pictures are shadow pictures. The shadows do not always show all the conditions present. The dentist doesn't take an x-ray picture, retire to the developing tray and come up with a diagnosis. The shadows have to be interpreted. Some dentists are better at interpreting than others. This means that they pick up clues faster. If a complicated condition is suspected, it may be necessary to take x-ray pictures of one tooth from several angles. Diseases of the soft tissues do not show up clearly in x-rays, but your dentist is trained to recognize danger signs.

Even the x-ray cannot tell the whole story. The examination and the case history given by the patient are important, too. Don't withhold helpful information. Don't sit back in your chair and defy the man who is working to help you to find something. Sometimes after a mouth injury, x-ray shadows are dark and may be mistaken for signs of infection. If the baby recently swung at you with his bottle or if you bumped your chin on the curb when you stepped from the new

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car without running boards, tell the dentist.

If you are wearing dentures on one of your decks, don't laugh if the dentist advises x-rays of your entire mouth. It is just as important to have x-rays of the areas where teeth are not as where they are present. You have arthritis? Aches? Pains? Kidney trouble? These are some of the reasons why it is well to learn whether extraction of teeth has left a hidden threat to your good health. Untreated infection, whether your teeth are in or out, may continue to spread with no outward signs. The x-ray may light up such hidden menaces. Impairment of general health may be prevented as well as deformities of the mouth and face.

If teeth are impacted—if they have not come through the gums but are imbedded deep in the bone—the x-ray will help decide whether removal is indicated. Even when they are not infected, by exerting pressures against nerves impacted teeth sometimes cause neuralgia, severe headaches and occasionally insanity. Infecion is likely to occur when teeth are partially impacted. Removal of an impacted tooth is a complicated surgical operation requiring skill and experience.

If a tooth has to come out, your dentist is the one to advise you. Operations for the removal of teeth are not all alike. It is a simple matter to remove certain teeth, but when there are enlarged, curved roots surrounded by hardened bone the operation becomes difficult. To carry out such operations requires special training. Don't make the mistake of thinking you can select the anesthetic. The choice of any means of controlling pain should be left to the man who is to perform the operation. His knowledge and experience qualifies him to determine the type of operation and all related matters. Under certain conditions use of a local anesthetic might have serious consequences, for example. Again, some operations cannot be performed with as much care under a general anesthetic.

If you want to appear well, chew your food and speak normally, replace the teeth you lose. Otherwise, adjacent teeth may shift about, and spaces may occur between other nearby teeth. With this shifting, the supporting jawbone and gum structure may be injured. Gaping spaces alter the natural facial expression, too. The whole outline of your face may be remolded—and unhappily.

But false teeth are so dead white! You can have them jungle red if you want them. Dozens of artisans have full time jobs building teeth on instructions given them by dentists. Business competition helps here, too. They have spent years trying to outdo their rivals. Ask your dentist to show you a few things about a replacement job. Take plenty of time and have it done right. Don't expect to have a tooth pulled one day and another in its place the next. Sometimes that very thing can be done, but many times it is advisable to have the gum or the jawbone rested, healed and treated before teeth can be installed safely. Your dentist will know best. Use of artificial teeth or dentures is today quite usual. Many young people have dentures which defy detection even on close inspection.

Teeth are tools, and smart people know you need full personal equipment whether you are plain John Citizen, a soldier in the Army or a young man or woman in industry.



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Hand Hazards!

(Continued from page 425)

sticks it into the grinder with her bare hands, and before she knows it the tip of a finger has been taken off. In the meat market, the much more skillful and careful butcher would not think of using his hands to push meat into a grinder. He uses a stick of wood.

Another housewife may drop a glass tumbler on the floor, sweep up the fragments and dump them into the wastepaper basket. Later on she loses a letter or a grocery list and forgetting about the broken glass starts fishing around in the basket. Suddenly there is a flash of pain—a fragment of broken glass has given her a severe wound! When she goes to the doctor he warns her that glass in wastepaper baskets is one of the common causes of hand injuries.

One of the more ghastly sights a doctor encounters in his practice is that of a woman's hand which has been slit between two fingers by a sharp knife. And one of the customary stories he hears from such a victim is that she keeps her carving and paring knives in the same drawer with other kitchen utensils. A sharp carving knife became wedged with sharp edge upward between two other articles in the drawer. She fished around in the drawer after dark for something she had mislaid, and her hand struck the sharp, upturned blade. The most obvious precaution a housewife can take against such an accident is to keep sharp cutting knives separate from other implements, perhaps hung on a rack over the kitchen sink.

Seemingly tame and harmless is the housewife's practice of peeling fruit or potatoes without protecting the end of her thumb. While she is busy canning or preparing a meal she does not have the time to notice the tiny cuts made by the paring knife. She may get a dozen or more little breaks in her skin that provide wide-open portals of entry for dangerous bacteria! Most housewives escape the serious consequences of this practice, but doctors all too often are confronted with the problem of healing badly swollen thumbs and hands infected by the invading bacteria. A simple precaution would be to paste a little adhesive tape on the end of the thumb before using the paring knife.

Doors are often disastrous to hands. People have too little respect for the tremendous force exerted at the pivot edge of a door. A housewife may polish a door with a cloth while her hand rests near a hinge. She pushes the door shut and her finger is crushed. A surgeon who has developed a specialty of treating injured and infected hands tells a story of his neighbor who caught several fingers between two of the horizontal sections of a garage door of the type that operates vertically. With his fingers caught he could not move the door up or down. All he could do was scream for help.

Vacation time is an open season for serious hand injuries and infections. Men and women pioneering in the great outdoors find new types of jobs to which they are not accustomed. They use their hands for hammers, screwdrivers and pliers, ripping off finger nails, breaking bones or getting jagged splinters embedded in their skin. Blisters on tender hands may go unwashed and uncared for until some serious infection starts.

Cleaning fish sounds like a safe enough pastime for a vacationer, but many a vacation has been ruined by fish bones that knife their way deeply into the flesh. Because of the serious consequences of tularemia or rabbit fever and the great amount of publicity it has had, warnings regarding it would seem needless. But hunters still handle wild rabbits and other wild animals with their bare hands, either through ignorance or with superb confidence that the particular creatures *they* have caught or killed are not infected! The animals may not be infected and the hunters' hands may be free of cracks or cuts through which the disease may enter. But there is still a chance which does not have to be taken if perfectly intact rubber gloves are worn, and the gloves are cleaned thoroughly with soap and water before they are removed. Tularemia not only causes painful sores on the hands, but the infection travels into the lungs with serious complications.

In winter, frostbite may prove to be a grave danger to hands if it is not treated properly. Most people know that to plunge frostbitten hands into water that is too warm may cause serious damage. Excessive warmth decompresses the blood vessels too rapidly and may seriously damage the blood vessel walls. Too rapid defrosting may cause serious illness that requires weeks for recovery. People with advanced cases of hardening of the arteries should also take precautions against putting their hands in hot water, because the walls of the arteries may not be able to withstand rapid expansion.

Those who read this article no doubt have a peaceful turn of mind and would be horrified at any suggestion that they might be involved in a fist fight! Doctors, nevertheless, not infrequently have to deal with bad hand injuries and infections resulting from attempts to knock out the other fellow's front teeth! Policemen, in the course of maintaining law and order, are frequently victims of such encounters. When the fist is clenched and the back of the hand is taut, a collision with a couple of well embedded incisors may cut a deep gash in the tendons and cause several fibers to snap. The mouth may contain varieties of dangerous streptococci—or perhaps even syphilis germs—which find a fertile breeding ground in the hand. It is not rare for doctors to see hands badly bitten by human teeth, as well as those of animals, with consequences that are bizarre and painful.

Trivial hand injuries promptly and properly cared for by a physician should usually end in fairly prompt recovery. Therefore, it is most disconcerting to a doctor for people to wait too long before seeking medical or surgical care or to take care of themselves in cases that may later become serious. Never-

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theless, medical men estimate that more than 95 per cent of the hand infections they see are those which have become serious because of undue delay. A delay of a few hours sometimes means the difference between a trivial wound and a serious infection or the loss of a hand or arm or possibly a life! Delay may require the doctor or surgeon to use all his ingenuity to save a hand or finger. The loss of even a thumb may mean as much as 75 per cent disability!

Some people have lesions on their hands for weeks, months and even years—sores that persistently refuse to heal. These may start from a small scratch or cut. The victims suffer in patient resignation without taking the trouble of consulting a doctor, who might find an immediate solution to the difficulty. It is obvious that most disabilities of the hands may be easily prevented through adequate protection and prompt medical and surgical attention by persons qualified to give it.

IMMERSION FOOT AND SHELTER FOOT

Two disorders, immersion foot and shelter foot, which are closely related to frostbite and trench foot have been produced by the present war, R. Greene reports in a recent issue of the English medical journal, *Lancet*. He says that shelter foot often was seen among shelter dwellers in London in 1940 and 1941 who had sat up all night without compensating rest in a horizontal position during the day. Immersion foot was encountered in persons who, after a shipwreck, spent a long time in water logged boats. In shelter foot the swelling is painless at first, he explains, and after while the swelling extends up the leg. The wooden bars of the deck chairs used by most of the victims exerted a prolonged pressure on certain blood vessels, causing a stagnation of the blood in the veins and increased permeability of the minute blood vessels known as the capillaries. He says that immersion foot is almost identical with trench foot and that its causes are the same; cold, heat after cold, dampness, stagnation of the blood in the veins, wind, lack of sufficient oxygen, nutritional deficiency and injury all may play a part.



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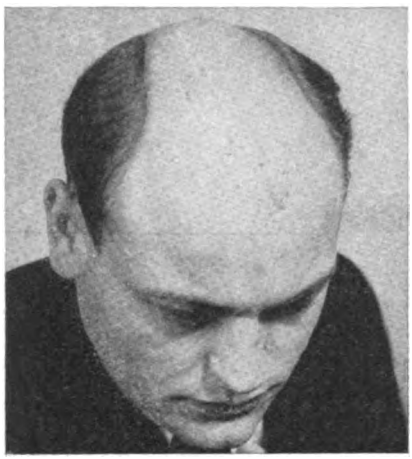
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QUESTIONS AND *Answers*

School Without Lunch

To the Editor:—The question of a single-session day or a double-session day has arisen in the schools of this community. Since the schools are not able to provide hot lunches for all pupils, since a majority of the pupils eat breakfast about 7 a. m., and since the daily schedule will require keeping the same pupils until 2 p. m., some take the position that this is too long a time for the children to go without food. Can you place me in touch with some one who can give me his professional opinion or cite some studies made on this subject?

L. F. C., South Carolina.

Answer.—After consultation with the staff of the Council on Foods and Nutrition of the American Medical Association and with pediatricians, we give the following reply to your question as to whether the interval from 7 a. m. to 2 p. m. is too long for children to go without food:

The interval between meals is to some extent a habit as far as adults are concerned. This is not so with children. They require in proportion to their size much larger quantities of food than adults. They use up a great deal more energy. At the same time, their stomachs are small, and they cannot eat large quantities of food. The emptying time of the stomach is two to three hours depending in part on individual variations and in part on the amount of fat in the diet; diets high in fat require a somewhat longer time for digesting in the stomach. It is apparent that an interval of more than seven hours between breakfast and lunch would be the occasion for sensations of hunger in most children, amounting to discomfort in some and possibly accompanied by faintness in others. If children get hungry they will find some means of eating—probably candy and similar things which can be carried in their pockets.

Since hot lunches can be served with the cooperation of women's groups in the community at small expense and without elaborate facilities, we believe it absolutely essential that if prolonged sessions are necessary, suitable provision be made for hot lunches.

It seems to us, however, that not only is the question of food to be considered, but the question of fatigue. Young children especially should not have a continuous school session without interruption or rest. They require intervals of relaxation and change of occupation.

Unless provision can be made for a suitable interruption for lunch and for feeding children a hot lunch or at least a hot dish, we could not look with favor on any proposal for a school schedule which would keep children without food from approximately 7 a. m. or even 8:30 a. m. to 2 p. m. This applies especially to younger children.

It has also been shown that industrial workers who have an early breakfast and lunch at about noon show better production records if there is an interval during the morning at which a light lunch, such as fruit, milk or a sandwich, can be consumed.

Still another consideration in your proposed long session is that children leaving school at 2 p. m. and proceeding home may be fed as late as 3 p. m., at a time when the rest of the family is not lunching. They are very likely to get a makeshift and inferior lunch at this off-schedule hour, or if they get a good lunch, their appetite for a normal dinner or supper may be impaired.

While you have not asked for a discussion of the educational factor, with which you are undoubtedly more familiar than we are, we believe that no educational advantage will be derived from prolonged sessions, since not even an adult can

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concentrate continuously, and children very definitely cannot.

From all points of view, the proposed lengthy continuous morning session has little to recommend it and many disadvantages.

Memory in Old Age

To the Editor:—HYGEIA is the most valuable magazine I subscribe to. I read it from cover to cover and if I could remember one half of what I read, I would be well informed. However, I am losing my memory. Is there anything I can do about it? I was 73 years old last August. I am pretty well physically, and can do a good day of hard work, but I am unable to call names readily and often I can't recall names. A few hours after they are recalled, I have a struggle to recall them again. Is there anything I can do about it? I will appreciate your advice.

R. F., Oregon.

Answer.—It is perfectly natural that a man 73 years old should experience some decrease in his memory retention and some increase in the difficulty of voluntary recollection. The main thing to do about it is to take it with good grace and with a realization that it is an inevitable consequence of growing older. In itself it is not serious; forgetfulness at 73 is not pathological. To be distressed about it is.

Dreams

To the Editor:—We are studying physiology and would like to know the answer to this question: "Is one's brain working when one is dreaming?" Will you please write and tell us, as we are all anxious to know.

M. G. S., Wisconsin.

Answer.—The general answer to this question is "Yes." We cannot however fully understand dreams until we know more about consciousness and sleep. Our feeling of consciousness depends on the activity of nerve cells in the brain. This we know because if they are deprived of their blood supply or injured in many ways we lose consciousness. But the nerve cells of the brain, like all other cells of the body, must have periods of rest. Such a period of relative inactivity we call sleep. In sleep the brain cells are of course alive, and all



LOUISE: Tell me, Mary, do you know anything about those thingumajigs that many women use now instead of sanitary pads?

MARY: *I certainly do. I use Tampax myself and if you don't I'll give you credit for less intelligence than I thought you had.*

LOUISE: Well, of all things, Mary! You surprise me! I had regarded you as conservative about new ideas.

MARY: *Right you are Louise, but this new form of sanitary protection, Tampax, is a real boon to us women and I'd be stupid not to use it.*

LOUISE: Tell me, Mary, is it true Tampax doesn't show, that you are not conscious of wearing it and that it eliminates other nuisances that go with the wearing of external sanitary pads?

MARY: *It is all true, emphatically. It really seems too good to be true, but I now realize life can be worthwhile even at "those times" of the month!*

LOUISE: What started you on Tampax, Mary?

MARY: *I have a friend, Jeannette, a registered nurse whose word carries great weight with me. She said she uses Tampax and so do many other nurses . . . She emphasized what a lot it means to women from both the psychological and the physical standpoints . . . and now most of the girls in my office swear by Tampax!*

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their metabolic activities are going on at a low level. Their activity may be considerably increased before wakefulness appears, and we may even remember their activity, in which case we say we have had a dream. To prevent such activity we usually try to cut off all stimulation by going to sleep when it is dark and by choosing a quiet place. But even then stimuli reach us both from the surface of our body and from our internal organs. The nerve impulses produced reach the brain, and the course they follow there may give us conscious sensations. Often they travel pathways used previously, as when the dream repeats an old experience. On awakening we may have a memory of this activity during our sleep. It is a dream.

Children's Vocabuiaries

To the Editor:—What is the average number of words in the vocabulary of a child 3 to 4 years old? Also the number of words the average adult knows. Would you say that a child 3½ years old who knows and uses 600 words is above average?

E. M., Minnesota.

Answer.—The size of a child's vocabulary may be estimated on the basis of all the words used by the child within a given period of time, or it may be simply the average number of different words used during several periods of observation. The situation in which vocabulary is measured may range from spontaneous responses in a free play situation to responses to a selected list of questions or to a standardized test. There are many problems involved in determining what constitute different words; that is, whether or not plurals and inflections of verbs and adjectives should be considered separate words.

The best study is probably that of M. E. Smith, who obtained the following results:

Age	Number of Words
2 years	272
2½ years	446
3 years	896
3½ years	1,222
4 years	1,540

The range, however, is large in a group of children of average intelligence, and no particular significance is to be attached to rather large deviations from these mean values.

Terman, on the basis of results from the Stanford-Binet vocabulary test, gives around 12,000 words as the average adult vocabulary. Other studies place this figure considerably higher. Some studies of high school seniors indicate a vocabulary of between 15,000 and 18,000 words. The best general reference is probably Dorothea McCarthy's book, "Language Development."

Mental Deterioration in Old Age

To the Editor:—Do scientific facts show that there is a connection between one's mental activities in late middle life and the approach of mental senility late in life? In other words, would facts substantiate the idea that keeping one's mind alert as long as possible and trying to "keep abreast of the times" in every way would postpone a tendency to lose the memory and break mentally?

My father's mentality began to fail when he was in his late seventies and grew worse, of course, until his death at the age of 85. On the other hand, my mother, who is now approaching her eighty-ninth birthday, is mentally alert and active in many lines of work.

Could my father have kept mentally fit a longer time by an effort to do so after he retired and was inclined to stay at home and not take an active part in affairs? Of course, I realize that keeping one's mind active helps to keep one alert and young, but can the actual physical aspect be affected by effort? The doctors explain to us that the mental condition of senility is caused by the thickening of the arteries and blood vessels in the brain, and my question is whether or not this may be postponed by mental activities.

T. W., Iowa.

Answer.—This question is most difficult to deal with scientifically. A study of the development of mental problems associated with old age would necessarily need to extend over many years in order to arrive at valid conclusions. It would necessitate having one group that kept itself as alert as possible and another group that let itself go in order to compare results, and it

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would have to depend to a large extent on indirect information and reports from the persons themselves as to their attitudes. Furthermore, the quality of alertness would have to be measured in some way which is not at present available. Without this, the answer must be impressionistic and not scientific. There would seem at present to be no justification for the assumption that mental deterioration of old age could be prevented in this way. Many persons look forward with dread to old age because some one in the family has shown this type of deterioration. Such anxiety would seem from present information to be quite unjustified.

Dictating Machines

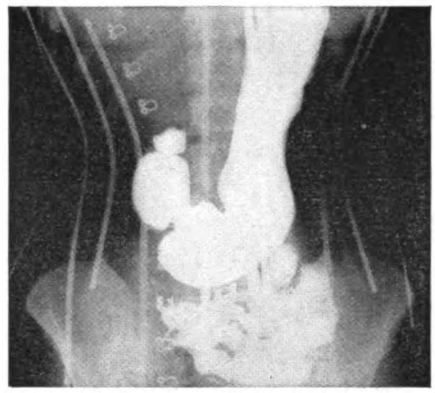
To the Editor:—I have a secretarial position and we now have a dictating machine in our office on trial. I should greatly appreciate it if you will advise me whether or not there is any danger whatever of one's hearing becoming affected by its use.

I tried one out some years ago and did have headaches at the end of the day and it seemed to make me nervous, so I gave up my position on account of it after several weeks.

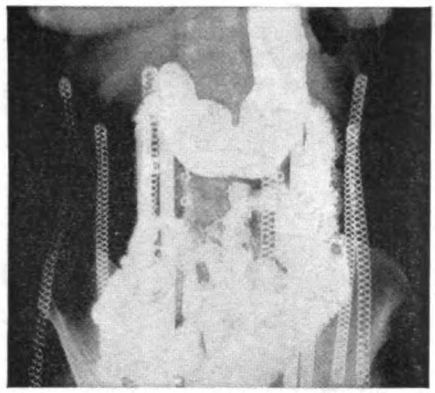
E. W., New Jersey.

Answer.—There is certainly no justification for believing that one's hearing would be affected by the use of such an apparatus. As for the headaches, possibly they could be avoided by a different adjustment of the earphones. It is unfortunate that the use of the apparatus makes you "nervous," and it is difficult to suggest any way that this effect can be eliminated since the chief reason for it is to be found in the person. Many people find the dictating machines satisfactory indeed and even prefer them, while others have reactions similar to yours.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.



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Production's three great weapons . . . Skill, Strength and Speed . . . all can be defeated by faulty eyesight.

Eyes are the first tools in every trade, the prime need of every war worker in blue denim or white collar. Your job, whether planning, reading blueprints, operating a machine or wielding a hammer . . . demands precision eyesight as true as a micrometer.

If headaches, nervousness or unexplainable stomach-upsets occur . . . *it may be your eyes!* See your Family Physician without delay. He will, if he deems it necessary, advise you to consult an Eye Physician (Ophthalmologist). If Glasses are prescribed, he will recommend that they be ground and fitted by a Guild Optician.

This perfect co-ordination of service assures you expert medical care . . . and the accurate Glasses your Eyes deserve.

Ask any Guild Optician for names of Eye Physicians in Your Locality.

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See an Eye Physician . . . Have your Prescription for Glasses filled by a Guild Optician.

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Brassieres by Maiden Form mould and support superbly because they are created by a sculptor-designer. Fashioned by skilled workers from quality materials. they hold their fine shapeliness through months of hard wear. So, when buying foundations, be sure to look for the name Maiden Form, as your assurance of *perfect* figure-control.



Shown are only two of many styles. See how *different* they are — because each was created for a different bosom-type! Send for *free* Style Booklet X: Maiden Form Brassiere Co., Inc., New York.

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LOOK FOR THIS TRADE-MARK ON
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BOOKLETS ON CHILD CARE

KEEPING YOUR BABY WELL—General advice on infant care and feeding. 24 pages. Single copy, 10 cents. 10 copies, 75 cents.

BAD HABITS IN GOOD BABIES—By Herman M. Jahr. Covers crying, thumb sucking, head rolling, feeding difficulties, bowel and bladder control, shyness, stubbornness, and self-expression. 16 pages. 15 cents.

WHAT DOES YOUR BABY PUT IN HIS MOUTH?—By Chevalier Jackson and Chevalier L. Jackson. Tells how to prevent accidents from choking and what to do if they happen. 24 pages. 10 cents.

THE TRUTH ABOUT CANDY—By Morris Fishbein. When and how to use candy. 4 pages. 5 cents.

PROTECTING THE HEALTH OF THE CHILD—By Elizabeth Cotton. Discusses the responsibility of the parent and of the school. 8 pages. 10 cents.

WHAT TO DO ABOUT THUMB SUCKING—By William I. Fishbein. 6 pages. 10 cents.

THE FAMILY HELPS THE SPASTIC CHILD—By Belle McKinnon. 16 pages. 15 cents.

AMERICAN MEDICAL ASS'N., 535 N. Dearborn, Chicago

Wartime First Aid

(Continued from page 440)

4. Swelling and discoloration—frequently not present for several hours.

5. Sense of grating with motion.

6. In compound fractures, bone may or may not protrude through the skin wound.

The first rule in handling fractures is expressed by orthopedic surgeons in the picturesque phrase "Splint 'em where they lie." Moving a person with a fracture before the bone is properly splinted may increase shock and result in death, or it may turn a simple fracture into a compound one.

Traction splints are the most effective protection for a broken arm or leg. These may be the specially made devices or may be improvised from boards and cravat bandages. A simple splint may be improvised from a thin board, a telephone book, a newspaper, a piece of linoleum or some other material that is rigid when folded or rolled, applied with plenty of padding between the material and the part. The first aid course provides several hours of instruction and demands a great deal of practice in the application of splints.

Fracture of the spine, such as a broken neck or broken back, is extremely dangerous. Improper care may cause death or permanent paralysis.

A victim with a broken neck must not be allowed to move his head. Keep him lying in the position in which he was found, cover him with blankets or wraps and get a doctor. If it is imperative to move a person with a broken neck—if for instance he is near a wall that is about to crumble—he should be placed on something rigid like a door, shutter or wide board and moved with extreme care by at least three persons. The instructors will show you exactly how it should be done.

When the back is broken the same extreme precautions must be observed. Any move that doubles the injured man forward may cause death or paralysis for life. There is a special technic for moving him if he must be moved. It is possible to use a blanket if no rigid support is available. In case of doubt, handle a suspected fracture as if it were actually a fracture.

Contrary to all expectations, the use of poison gases has so far been reported only a few times in this war. It will not do, however, to assume that gas will not yet be used to spread confusion and suffering among both military and civilian populations.

These poisonous chemicals may be released as gases, smokes or liquids, which cause their havoc by being inhaled or by coming in contact with the skin, eyes or nose of the victim.

Some gases are dangerous for only a short time, as the vapors are soon dissipated in air. Others cling to clothing, plants, implements and other objects, contaminating them for long periods. They all have characteristic odors which the first aid student must learn.

Classified according to their effects, the principal gases are tear gases, sneeze gases, choking or lung-damaging gases, systemic poisons and blister gases.

Tear gases are valuable to an attacking force because they may disable groups of defending forces long enough to allow some other more deadly form of attack to be launched. They may throw industrial workers into confusion long enough to slow up arms production.

The tear gases may have the pleasant smell of apple blossoms or the disagreeable one of sour fruit. They make the eyes burn and flood with tears. Generally the eyes recover without treatment, but warm soda water will relieve them if the burning pain is severe.

Sneeze gases smell a little like coal smoke and their effects are severe but temporary. They cause mental depression. The victims need reassurance that the aching pain, sneezing and coughing will soon pass off. The first aid treatment consists of flushing the nose and throat with a weak solution of baking soda or having the victim

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breathe fumes of bleaching powder in a wide-mouthed jar.

The choking or lung-damaging gases may smell like new cut hay or moldy hay, with either a pungent and disagreeable odor or a sweetish one. The effects of this kind of gas may be delayed for as much as twenty-four hours, but they are serious. If there is any suspicion, therefore, that a person has been exposed to this type of gas, he should be made to rest even if he has no symptoms. He may collapse without warning. The first aid worker is warned not to give artificial respiration in this type of poisoning.

Gases that cause a general poisoning of the system have various smells, including some resembling "bitter almond, rotten eggs, garlic." Their immediate effects include slight headache, loss of consciousness, convulsions. Breathing may stop. To relieve these symptoms remove the victim to fresh air, give artificial respiration if needed and treat for shock.

Blister gases cause acute inflammation of the eyes, itching, burning and blistering of the skin, severe pain in the chest and coughing. These are the gases that are persistent in addition to being dangerous and powerful. Danger does not cease with a brief exposure. Other casualties must not be placed with these, and the rescue workers must exercise extreme care not to become casualties themselves. First aid treatment must be immediate and is more complicated than for any of the other types. Contaminated clothing must be removed. The eyes can be irrigated with a solution of baking soda. The skin may be daubed lightly (never rubbed) with cloths moistened in benzene, kerosene, alcohol and ether or with straight gasoline (not ethyl) or carbon tetrachloride (pyrene). These substances must be washed off quickly with running water and soap lest they cause further irritation. Before skin becomes inflamed chlorinated lime (bleaching powder) made into a cream paste with water will neutralize mustard gas, but must be washed off in a few minutes. Bleaching powder must not be used after redness appears. For lewisite, hydrogen peroxide or permanganate of potash are effective agents.

(Continued on page 461)



War Paint

In the midst of the blitz in England a lipstick became a symbol of democracy, bravely worn in defiance of that "wicked man's" attempt to shatter morale. Early in the history of the U. S. S. R. women protested against a ban on cosmetics, and it was lifted. These things are easy to understand when one reflects that cosmetics are an intimate part of a woman's life. They are essential to her well-being, her sense of personal fitness. When a woman knows she looks pretty she can face almost any situation with equanimity and courage. She needs her "war paint"; it bolsters her morale.

During the telling months ahead our industry may be deprived of certain raw materials. Packages and containers may have to be changed. Any great emergency is a test of resourcefulness. We believe that our industry will not be found lacking in that sterling American quality. Our research facilities are directed towards finding alternative raw materials that will be at least as satisfactory as those they replace. Come what may, we'll do our best to continue to supply American women with those aids to good grooming, those props to personality, that in their modest way contribute so much to national morale.

Luzier's Inc., Makers of Fine Cosmetics & Perfumes

KANSAS CITY, MO.

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The President asks You to IMMUNIZE your Children

ROPER* survey reveals WIDESPREAD FAILURE of American mothers to safeguard their children against Smallpox and Diphtheria

TODAY, in this war crisis, immunization is more important than ever before—so vital that the President of the United States in a recent Proclamation asked that . . ."all children over 9 months of age be immunized against SMALLPOX and DIPHTHERIA."

Have you had your children immunized against these diseases yet? If you haven't, *you should do so immediately.*

☆

In a recent, nationwide Roper survey, 50% of all mothers with children under 5 years report they have never had a single child vaccinated against SMALLPOX!

Moreover, 34% of these mothers say not a single one of their children has been inoculated against DIPHTHERIA!

Unfortunately many mothers mistakenly believe these diseases are virtually extinct

The facts show *more cases of smallpox are reported by the United States than any other country, except India!* And yet protection against smallpox is open to all who go to a physician for vaccination—a safe, simple procedure which takes only a few minutes.

Diphtheria has been decreasing—*but in the past 10 years at least 392,000 people in the United States were stricken with diphtheria . . . nearly one of every 10 died!*

The Roper survey shows mothers believe in immunization. But, unhappily, the majority do not appreciate the importance of having their children *immunized during infancy* and *reimmunized at proper intervals* to keep this immunity effective. All too many mothers say they would not have their children inoculated until an epidemic arose—or until their children were exposed to the disease.

To postpone calling your physician until there is an epidemic or they've been exposed is extremely dangerous. Remember, your unprotected child may be one of the first unfortunate thousands stricken before it is recognized that an epidemic prevails!

☆

How recently have you given your physician a chance to advise you about immunization?

Many mothers report they will have their children immunized when advised to do so by their physician. In this war crisis with its influx of refugees . . . mass movements of the population . . . crowded defense areas —there is no more important a time to consult your physician than *right now!*

*Elmo Roper, national authority on public opinion sampling, conducts the *Fortune* survey. In his presidential surveys he forecast the election of 1936 within 1% and the election of 1940 within ½ of 1%.

ARE YOU SURE YOUR CHILD IS PROTECTED AGAINST SMALLPOX AND DIPHTHERIA?

The following statements are broken down according to child age groups. Unless you can say "Yes" to those applying to *your* children, you should *immediately* take your children to your physician.

FOR INFANTS . . .

I had my child first vaccinated against smallpox between 3 and 12 months of age—or at least before the age of 3 years. Yes ☐ No ☐

I had my child given an initial inoculation against diphtheria between 9 and 18 months. Yes ☐ No ☐

FOR CHILDREN STARTING SCHOOL . . .

I had my child revaccinated against smallpox before going to school or at 6 years of age. Yes ☐ No ☐

At 6 years I had my child given a Schick Test to indicate susceptibility to diphtheria. Yes ☐ No ☐

FOR CHILDREN 12 AND OVER . . .

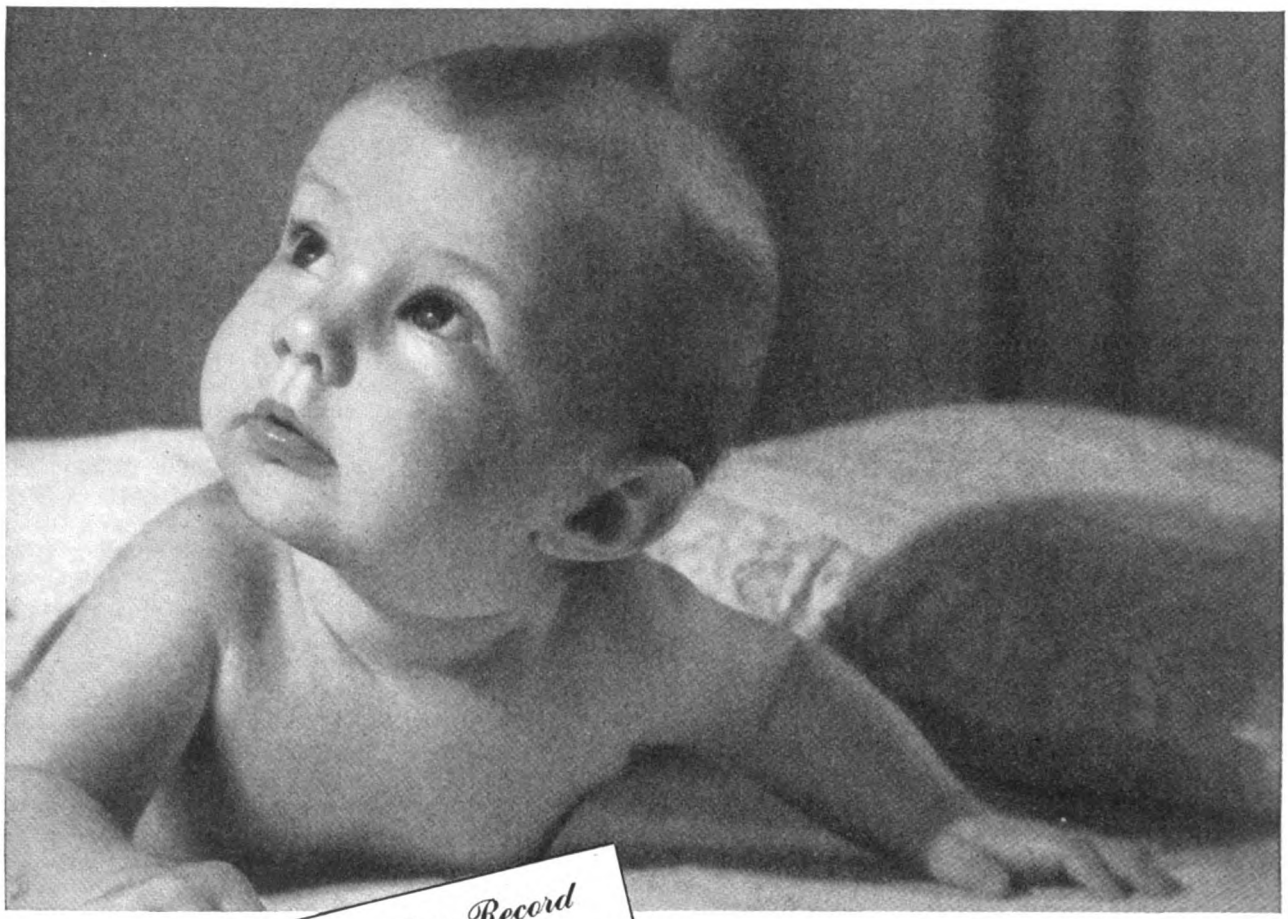
I again had my child revaccinated against smallpox at the age of 12 years. Yes ☐ No ☐

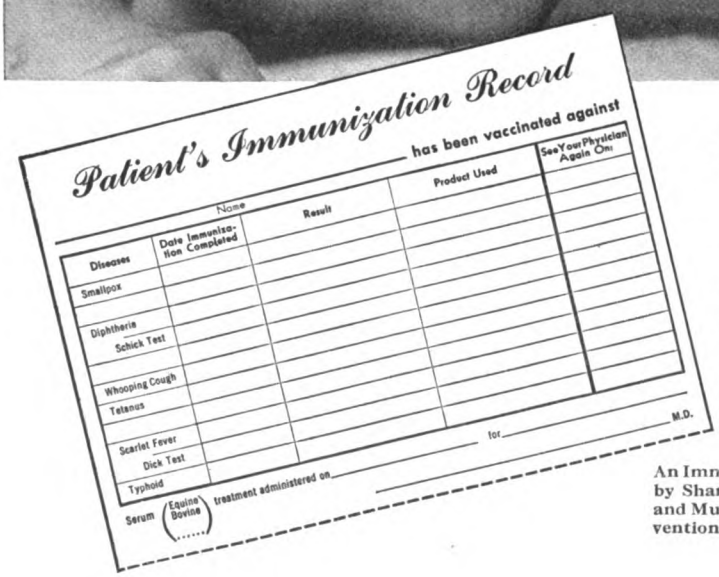
At 12 years I had my child given a second Schick Test to indicate susceptibility to diphtheria. Yes ☐ No ☐

When either of these Schick Tests showed susceptibility, I had my child reinoculated against diphtheria. Yes ☐ No ☐

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against SMALLPOX and DIPHTHERIA





Many physicians are making an Immunization Record *available to their patients*

An Immunization Record Card, when properly filled out by your physician, will materially aid you who want to give your children the benefits of complete immunization protection. A card for each member of the family will tell what diseases each has been immunized against and *when* and *what* reimmunization will be necessary.

See your physician for these cards *today!*

An Immunization Record Card is supplied to the medical profession by Sharp & Dohme, Philadelphia, Pa., makers of Pharmaceuticals and Mulford Biologicals, as part of their endeavor to aid in the prevention of communicable diseases.

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Thumb-sucking... Nail-biting can be discouraged

Thumb sucking and nail biting are unhealthful habits of children. Don't resort to bribes and promises, use THUM. Directions on bottle. Remove from fingers with nail polish remover.

USE THUM TRADE MARK



EASY TO USE
APPLY LIKE NAIL POLISH
SOLD AT
ALL DRUGSTORES
50¢

THUM contains capsicum 2.34% in a base of acetone, nail polish and isopropyl.

IF YOUR CHILD OUTGROWS SHOES RAPIDLY... Read This!

Shoes of conventional construction usually crease at the back after wear, pushing the foot forward until the *toe-room provided for growth is wasted.*

Trimfoot Pre-School Shoes, with patented "Cuddle-Back" heel construction are designed to prevent this creasing and to preserve a smooth, snug fit at the heel. Little feet are allowed to utilize *all* the space provided for growth.

For a better and longer lasting fit, see Trimfoot Pre-School Shoes at your shoe or department store .... $2.35 and $2.85

FREE! Send for folder "Care of Growing Feet." Dept. BD, Trimfoot Co., Farmington, Mo.





TRIMFOOT PRE-SCHOOL SHOES

HANDICAPPED

IV. CAN YOUR CHILD READ WELL?

WHAT does the poor reader do? He may read too fast; he may read word by word, pointing as he reads; he may repeat words, trying to find the right pronunciation; he may read too slowly, hesitating on every other word; he may fail to make proper groupings; or he may omit letters as he pronounces the words. In addition to actual difficulties with the reading of the material, the child may have developed some personality problems. He may have formed an intense dislike for school as a result of his poor reading ability. He may be negativistic, stubborn or nervous. He may cry easily, or have temper tantrums.

From 10 to 20 per cent of the school population has been found to be seriously retarded in reading ability. As with speech, more boys than girls have difficulty with reading. Moreover, it is found that the language abilities, which include reading, speech, spelling and writing, go together. When one is poor the others are likely to be deficient, and when one is good the others are likely to be acceptable.

Reading, writing, spelling and speech have to be learned. The child does not talk, read, write or spell just because his parents did. Moreover, a certain area of the brain controls these abilities; consequently, if one is out of order, the others may be also. Because of physical and nervous maturation, the child is ready to walk at a certain time, usually at 12 to 15 months of age. He is ready to learn speech at from 12 to 36 months. Not until the child has become fully matured mentally and physically can he learn reading. Several authorities have agreed that the child is really not mature enough to learn reading satisfactorily until he is 6½ to 7½ years old. Urging the child to read before he is ready may cause unnecessary harm.

Since so many children are found with reading handicaps, schools are beginning to provide special facilities for remedial reading. However, most crowded school programs do not allow for enough individual attention for the child with severe reading retardation. Thus in many instances a psychologic clinic or private clinician is the best solution. Often children have been allowed to pass reading courses and have been promoted even to high school and college without achieving adequate reading ability to do good school work in all subjects. Such a handicap causes educational failures and psychologic maladjustments.

How does the child react when he finds that he cannot read as well as others of his age? He may take several different attitudes. He may accept his deficiency and not try to read. He may withdraw from activities of the class, making no attempt at all to get his school work; or he may become aggressive, expressing his reading inability by fighting, bullying or yelling. On the other hand, the less antagonistic child may compensate for his reading deficiency by excelling in some other subject, such as shopwork, arithmetic or drawing. The healthiest attitude for the child to take, however, is to attack the problem of reading. With help from a well trained teacher he can learn how to read satisfactorily.

Reading disabilities are caused by many factors; no defect depends entirely on one condition alone. Moreover, the person who has the defect is a more important consideration in its treatment than is the condition itself. How does the patient react to specific conditions which seem to have produced the defect?

Before knowing how to proceed, the person who is to help the child with his reading problem must

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CHILDREN

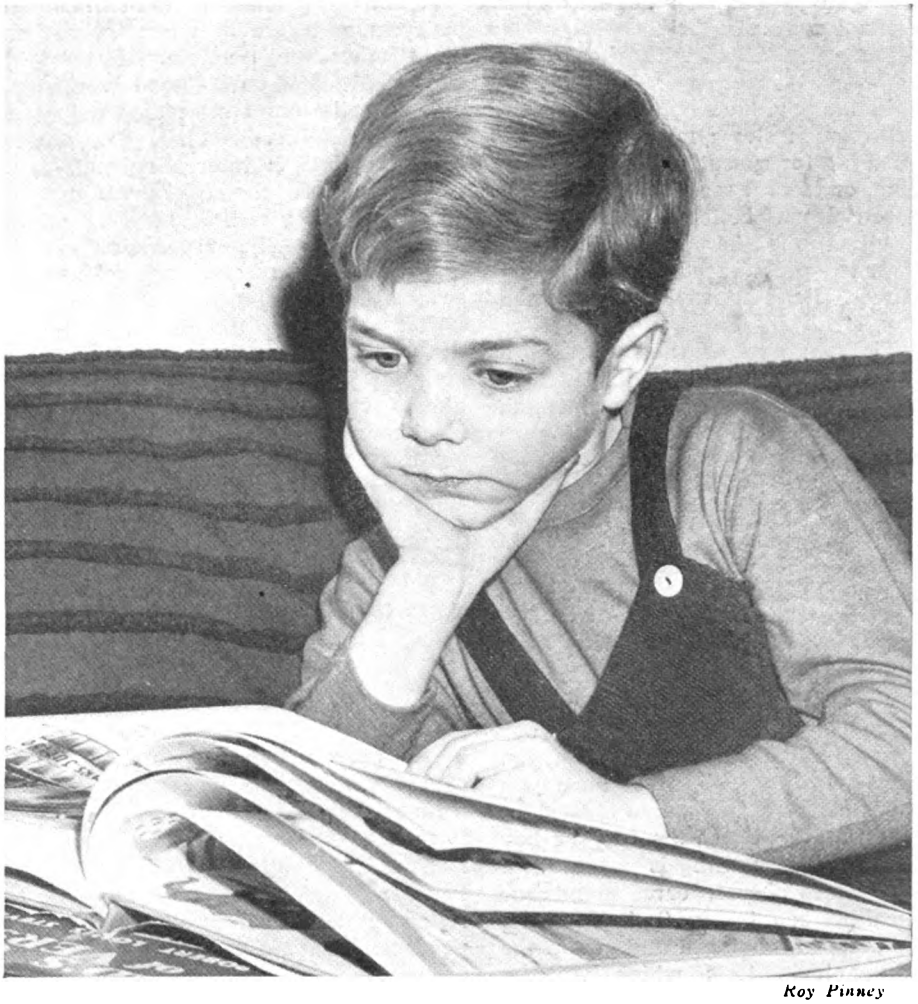
By RUTH E. BECKEY

know something about the causes of the difficulty. The reading habits of the child must be observed. In an analysis of causal factors involved in reading disability cases, many psychologic tests have been devised for making the diagnosis. Any well established college psychology clinic can aid parents in finding the proper procedure to use in helping their child. The psychologist can give intelligence tests to ascertain whether Jimmy is mentally inferior or simply inadept at language activities. Achievement tests also can be given to find at what level Jimmy is now reading. He may be trying to read material on a level too high for him. Although he is 11 years old, his reading age may be only 8 years; in this event the teacher and parent should find material that will be easier for him and let him proceed slowly with his work. Otherwise, he will become discouraged.

The psychologist can also give tests for eye, ear and motor coordination. About 20 per cent of the poor readers are found to need glasses. The audiometer is used to determine the hearing difficulties of the poor reader. Approximately 40 per cent of the poor readers have partial deafness, poor auditory discrimination or deafness at certain frequencies. If the child is not alert to sounds, he will not associate sounds with the letters of the words he is reading, and consequently his reading and spelling both may be poor.

The clinical psychologist may also find that the child has poor motor coordination. If your child falls easily or is extremely awkward he may be poorly coordinated. Such poor coordination may cause the eyes to be ineffective in following printed words. The child may even have difficulty in pointing to words with his fingers.

Other tests may be given to determine if the child has sufficient brain dominance to control the reading activities. Like speech, reading is controlled by one side of the brain. If tests reveal that the child is right-eyed and right-handed, then the left hemisphere of his brain is supposed to control his language activities. However, a change of handedness may have caused some hemispheric confusion. The left-handed writer often writes a mirror writing, and the left-eyed reader may be found to be reading upside down and backwards. One little girl in the clinic at the Hill-Young School of Speech Correction even drew pictures which were upside down. Such people see words and pictures in this way. It has been found that about 40 per cent of the poor readers are left-eyed; possibly they have difficulty in adjusting the dominant left eye



Roy Pinney

Urging the child to read before he is ready—usually during the seventh or eighth year—may cause unnecessary harm. Complete understanding of the cause of reading difficulty is essential before remedial steps may be undertaken with success.

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to the proper direction of reading material, which is arranged for the normal reader.

Besides giving the child tests to ascertain some of the factors which may be causing the difficulty, the diagnostician must take a complete case history of the child. If the clinical psychologist takes the history, he should confer with the parents, with the family physician and with the child's school teachers. By observation, the parent may determine if the child is weak or easily tired by his work. Insufficient sleep may handicap the child in school work. The physician can help the parent to find out what effect the child's physical condition may have on his reading progress.

Environmental conditions surrounding the child may also be instrumental in retarding his reading development. Because of poor economic conditions he may feel insecurity in his home, or he may feel emotional insecurity as a result of quarrelling parents. These insecurities add to the child's problems and may have an effect on his school work.

A consultation with the child's reading teacher may help to determine why he is not doing so well. Too much stress may be given to reading for speed, or to silent reading, or to oral reading. Some children learn better by the silent method, but others need to hear the words pronounced aloud many times. Reading needs to be learned by sight, by ear and by feeling. It is believed by some that modern teachers of reading have been teaching too much by the visual method, ignoring the importance of phonics training. Many children in school systems today do not even know what sounds the different letters make. Consequently, new words often have no meaning whatsoever from the standpint of sound. It may be that your child needs to learn how to sound the letters—his hearing may be more acute than his eyes.

Supposing you want to help your child to read better, what can you do? In the first place, have you consulted your physician to find out the physical condition of your boy or girl? If nothing is wrong with the child's eyes, ears, glands or health, then try to find a reliable clinical psychologist and obtain the psychologic tests which will be helpful in finding out the causes of the child's difficulty. Furthermore, ask the psychologist to outline a program of procedure which you may use at home, in case no arrangements can be made whereby you may send the child to the psychology clinic for individual care.

In planning the remedial program for the child with reading disability, certain questions must be considered first. First, does the child seem to learn how to read more easily by the visual method of quick recognition of words and letters? Second, does the child seem to learn more readily by the phonetic method, in which letters are "sounded out"? Third, does the child seem to learn more rapidly through the kinesthetic method, in which he traces words and later copies them? A combination of the visual, phonetic and kinesthetic methods may be used to enable the child to progress most rapidly in the acquisition of his reading skills.

Specifically, what can you as the child's parent do to improve his reading?

1. You may observe the child's progress and give him encouragement whenever possible. Praise causes the child to do good work.

2. Give the child individual help with his reading.

3. Have lots of interesting materials suitable for the child's reading age (level at which he can read most satisfactorily, regardless of his chronologic age or school grade).

4. Try to utilize the child's abilities and interests when you choose materials and methods. He may like to write the words on a small blackboard, he may like to typewrite the words, or he may like to play games with words and letters.

5. Plan reading periods for the child systematically at regular times when the child will be the least tired.

6. Play games with him. (a) You might make picture cards by pasting magazine pictures on cardboard. On other small cards print words which match the pictures. The child attempts to match the pictures to the words. (b) Some letters are so much alike that the young reader has difficulty distinguishing among them. Make several letters on small cards and have a box for each sound. As you sound "p," for instance, the child looks for the letter "p" and puts it in the proper box. (c) In still another game, every letter has a name. Regarding "k," for instance, you say, "What is its name?" The child may answer, "It is 'k.'" You may continue in this manner: "What does the letter say?" and "How do you make the letter?" This game enables the child to combine all three principles of seeing, hearing and feeling.

The parent may help the child in many ways to develop skills in his reading; however, the parent should also be interested in preventing the need for special remedial training in reading. In order for your child to be a normal reader with no difficulties, he must have normal intelligence, good eyes, acute auditory discrimination, good health, good enunciation and articulation, good environmental and psychologic conditions, a wide background of information and experience, good educational opportunities and a "reading readiness." Children usually do not attain enough educational or physical maturity to learn reading before the age of 6 or 7 years.

REDUCING DEATH RATE FROM RUPTURED APPENDIX

The administration by vein of lyophilized convalescent peritonitis plasma (the fluid portion of the blood, prepared in a special way, of some one who has recovered from peritonitis) is advised by J. O. Bower, L. A. Terzian, J. C. Burns, H. B. Trachtenberg and A. E. Pearce, Philadelphia, as a means of reducing the death rate from appendical peritonitis (inflammation of the membrane lining of the abdominal cavity due to rupture of the appendix). In their report in a recent issue of *The Journal of the American Medical Association* they say that the plan proved workable in Pennsylvania. They found that induced peritonitis in dogs produces tissue and body fluid changes similar to those observed in cases of appendical peritonitis in man, thus making possible the evaluation of agents used to combat it.

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Wartime First Aid

(Continued from page 455)

War conditions may bring injury from heat and cold, for war goes on in all seasons. Air raid victims and civilian defense workers alike may be exposed to extremes of temperature. The first aid worker, then, must be able to recognize heat stroke and to distinguish it from heat exhaustion, which requires exactly the opposite treatment. Heat cramps, caused by depletion of salt in the system through excessive perspiration, may develop in persons exposed to intense heat as fire fighters may be. Frostbite may be encountered. First aid instruction for frostbite has a special warning: Do not massage a frostbitten part. Let the thawing process be drawn out through several hours.

Carbon monoxide, the deadly colorless, odorless, tasteless gas that makes running a motor in a closed garage so perilous, is a frequent danger in war. Damage to gas mains, fixtures or furnaces may allow "CO" to escape into a closed space; collapse or blocking of a chimney or flue may divert the poisonous gas from a furnace into a house; incomplete explosion of a bomb may release a large amount of it. A person affected or overcome by carbon monoxide must be removed to fresh air quickly, should have inhalations of oxygen if it is obtainable and, if breathing has stopped or is impeded, must have artificial respiration at once.

The first aid course includes careful directions for the application of bandages, transportation of the injured and artificial respiration. To become expert in these vital methods will require many hours of training and practice. Authorities insist that practice should continue after the class is over. It is hoped that groups will assemble to practice on one another.

Industrial plants, business establishments and other agencies will do well to organize training programs. The local chapters of the Red Cross are prepared to help with organization and to furnish instructors. If the nation is prepared—down to each family circle—the horrors of war can be lessened in some degree. It may be said of us as it was recently said of British patients in a bombed hospital, "The morale was stupefying."

Behind the Scenes with

DOCTORS AT WORK

Besides actors it takes direction, music, announcing, script and planning to bring you a radio program. Here are the people who are responsible for *Doctors at Work.*

Dr. W. W. Bauer, Director of the Bureau of Health Education of the American Medical Association, is the originator and general supervisor of the program. **William J. Murphy,** Director of Continuity for NBC's central division, writes the original and entertaining scripts; other radio features by Mr. Murphy include "Flying Time" and "Cameos of New Orleans." **John Holtman,** announcer and narrator, has played on the stage and in radio as an actor and has announced for NBC for the past five years. **Martin Magner,** Production Director, has played and directed on the stage and with opera. He has directed not only in the American radio and opera but in many well-known European houses. **Joseph Gallicchio,** orchestra conductor, is well known to radio listeners and in symphony orchestra circles. Joe was a pioneer musical broadcaster with WMAQ before NBC was organized. **Virginia Payne,** who plays **Mrs. Riggs,** Tom's mother, has had extensive experience, not only in radio but on the stage. Apparently she believes in realism in acting; when Mrs. Riggs in the script had a broken leg, Virginia obligingly broke her own. **Arthur Kohl** does many parts for *Doctors at Work,* blending his versatile talents in character and comedy with equal facility. "Comedy," he says, "is my forte, but few directors ever think I am very funny." The fact is, Arthur *is* funny. **Ruth Perrott,** who does the inimitable **Emmy,** is an experienced actress on stage and radio and has had several one-act plays produced, two of which won prizes. **Jerry Spellman,** who does the small boy parts, has appeared in Tom Mix and Ma Perkins radio programs, as well as in *Doctors at Work.* **Geraldine Kay** is a former New York actress, now the wife of an NBC director.



William J. Murphy



Dr. W. W. Bauer



Left: Joseph Gallicchio, John Holtman, Martin Magner. Below: Virginia Payne, Ruth Perrott, Jerry Spellman, Arthur Kohl, Geraldine Kay



SATURDAYS

5:00 P.M. Eastern War Time

4:00 P.M. Central War Time

3:00 P.M. Mountain War Time

2:00 P.M. Pacific War Time

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Physical Training for Army Flyers

(Continued from page 418)

instruction divided into four periods of ten weeks each. The first period will be spent in one of the seven replacement centers where he will learn the rudiments of aviation and undergo intensive military instruction. In company with some 3,500 other cadets he will attend aviation classes and physical training classes. It is mandatory at this stage that he spend a minimum of three to four hours a week on conditioning and hardening exercises, using calisthenics or setting-up exercises as the basis for the conditioning work. He is allowed to spend the other two or three hours of his minimum compulsory physical training time on gymnastics or sports such as handball, restricted boxing and wrestling, tennis, table tennis and other sports in which he competes against another man. Although he is also allowed to spend some time on mass sports such as basketball, softball, touch football, speedball and similar competitive games, emphasis is not on these sports.

Supervision of athletics is strict at all schools, and boxing is restricted to the training aspects, such as bag-punching, rope-skipping and shadow boxing. The reason for this extreme care is that any injury, particularly to the nose or eyes, will ruin an aviator's career. One good punch on the nose can cause Uncle Sam a loss of around $15,000, which is a rough estimate of the cost of training a military aviator. Good nasal condition is extremely important now that so much flying is done at high altitudes. If the sinuses are damaged, changes of pressure will often develop in them during rapid changes of altitude, causing extreme discomfort to the pilot and preventing accurate flying.

The emphasis on sports as part of the cadet's aviation program is natural. Not only do sports help keep a cadet in physical trim and relaxed mentally, but ability or lack of ability in sports is often an indication of whether he will become a good pilot after his course of flying training is over.

Sir Henry Head in 1920 observed that men who were good at bat and ball games made good pilots, while men who were weak at such games but good at track did not. Sir Henry wrote: "Man not only uses this power of projecting himself to the end of some mechanical appliance in his work, but games were invented to exercise this faculty. Flying a machine heavier than air is nothing more than an extended application of this power, demanding adapted movements of every part of the body and limbs. No new elements come into the mechanical problems of flying that are not evident in riding a motorcycle, game shooting, cricket, or golf."

What Sir Henry no doubt meant was that all around athletes usually make excellent pilots. If that is correct Uncle Sam is getting the best pilots in the world, for the trainees in the Air Force are not only becoming experts at aviation, but the steady diet of supervised sports is rekindling their interest in these and making them experts at sports as well.

The trainees at the various schools take to their training, whether it be at aviation theory, aviation practice or sports, with a zeal that resembles the knights of old. They realize that air power is now admitted to be the most important factor in the winning of any military engagement, and they appreciate the grave part they have to play in the conflict involving the armed forces of this country.

They remember that England as a nation might have been destroyed in those fateful days of September 1940 were it not for that gallant body of men, the Royal Air Force, "the few to whom so many owe so much," who met and defeated the vaunted German Luftwaffe in its all out attack on the British Isles. They believe that the miraculous rescue of thousands of English soldiers from Dunkirk would never have been possible were it not for the "ceiling" of British fighting planes which protected the beaches and held the German planes at bay while the tired men were being removed by boats.

They know that much is expected of them after their training is over. They want their fellow Americans to know they will be 100 per cent trained and physically fit as they complete their training and enter active service.

How to Enjoy Poor Health

(Continued from page 427)

his currently refreshed calm with his prior weary and nervous tension. Being a normal human being, he will now make some good resolutions. He will cut down on the smoking, for one thing. He will get more sleep. He will take more exercise. He will slow down his whole mad pace. And next summer he will see about buying a little place in the country where he can really relax.

This is the normal course of the normal mind during a three day recuperation. Members of the family who watch these strange thoughts taking shape need not grow alarmed. Probably nothing at all will come of it.

The alert patient will discover after two or three days in bed that the service which he has come to expect as the sick man's due is beginning to relax a little, and that the solicitude for his health has now grown more casual. He will wisely recognize these signs and start, a little sadly, to stir himself again.

He will learn, to his surprise, as he ventures downstairs for the first time, that he is actually in a rather weakened condition. He will feel sorry for himself. There will be a momentary temptation to retreat to the bedcovers again. Then necessity, or resolution, or whatever it is that keeps man and woman going, reasserts itself.

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EVER since 1869—when a young man founded the House of Heinz on the principle of providing America with highest-quality foods at moderate prices—the keystone label has stood for uniformity and fine flavor in 57 Varieties of good things to eat. And Heinz Baby Foods—15 Strained Foods for infants and 12 Junior Foods for toddlers—uphold this tradition. That's why they have won the complete confidence of America's mothers! Order a supply of ready-to-serve Heinz Baby Foods. You'll save yourself time, work and worry!

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57 THESE TWO SEALS MEAN PROTECTION FOR BABY

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FEEDING PROBLEMS

Feeding problems are often a symptom of deep rooted maladjustment requiring months of painstaking effort to correct or overcome. **By GEORGE M. LOTT**



Wrong technic there, young lady! Looks like force-feeding, and you may be initiating a "contest of wills" which will develop into a serious feeding problem—and perhaps into behavior difficulty affecting the child's whole personality!

ANY ONE seeking a simple rule of thumb to follow in the solution of feeding problems is doomed to disappointment. Only an understanding of the particular forces in operation can point the way to effective corrective measures.

There are many different ways in which eating problems develop. External causes include such things as exaggerated coaxing, attempts to speed up the eating process, and allowing the whole matter to become a contest of wills. Some parents drift into the use of disciplinary measures. Sometimes, the forces contributing to the problem are really at work in the personality of the mother or nurse—the result of various anxieties which the child's behavior may have stirred up in the parent. For instance, this or another child may have been ill and almost died. When for any reason the child does not eat, the mother may feel the anxieties which she had during the former illness. A conscious realization of this may not be present. There are still deeper forces at work in the mother who cannot control herself or manage wisely. These forces are usually of early origin and deserve special discussion.

CAUSES WITHIN THE CHILD

Many feeding problems begin with the onset of illness or with teething and emotionally upsetting experiences. It is important to know that normally appetite fails during the period when a child is coming down with an acute illness. Pediatricians have known for a long time that a perceptible drop in weight is the first sign of an

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acute infection in the offing. The child becomes a little listless, the appetite begins to fail and last of all come the symptoms of fever and prostration. Perhaps the most frequent onset of a struggle about eating between the mother and child is at this time when the child is coming down with an illness. The stomach is unable to digest food properly, so that forced feeding does actual harm and tends to precipitate the illness which might otherwise be warded off. The eruption of each new tooth may introduce a period when eating is painful. Emotional upsets come on insidiously and are prone to cause a return of earlier feeding problems. The birth of another child may cause a great deal of jealousy and feelings of deprivation. Thus when a sister was born, Burt, age 3, started to refuse all foods but milk, apparently in the attempt to put himself in the same favored situation as the baby. Domestic discord and separation of the parents may revive infantile behavior in the child. The same can be said about the change from one foster home to another. Many of these emotional factors have a bearing on feeding difficulties.

MATERNAL ANXIETIES

Abnormal tension and anxiety in many mothers trick them into unwise management of feeding problems. In such cases, it becomes apparent that the mother is the patient and needs assistance. Mothers who bring their children to the doctor frequently are well read in mental hygiene literature. They are aware of how they should manage eating problems with calmness and without special coaxing. It soon becomes apparent the question is not, "What should I do, Doctor?" but, "How can I get sufficient control to do what I know I should do?" Such mothers are the helpless victims of their own compelling anxieties, which frequently are exaggerated beyond reason. The source of these anxieties is really not the child's behavior. They come from within the mother, stemming from her own personality problems. Any eating hesitation on the part of the child or other upsetting experience may set off these anxieties, which are then displaced and focused on the eating problem. The mother may have been forcefed herself and may thus have acquired an overemphasis on the importance of food. When children are little they may not understand what is said to them, but they perceive clearly the feelings of their adult superiors. Their curiosity is stimulated and they may even adopt the attitudes of their nurses and caretakers. It is not unreasonable to suppose, therefore, that food may assume tremendous importance and that this influence may carry over into adult life.

However, there are other, deeper processes which may be at the bottom of the difficulty. One powerful cause of such maternal overprotection and worry is a deep-seated partial rejection of the infant. A child is indeed a burden, requires much care and may not have been planned for at the time of conception. The less mature the mother, the less readily does she fully accept the responsibility of child rearing. The marriage may have been unhappy. The mother may be extremely prudish and may thus tend to reject the baby, representing as it does the product of sexual relations. One or both parents may be juvenile enough to act as though they regarded the child as a competitor for the attention of the other. The important element is that the average woman feels badly about having such unacceptable attitudes. She may not admit them to herself but may sense the associated guilt and anxiety. Many such mothers spend much of their time overdoing their maternal activities in the effort to prove to themselves that they are good mothers. They become overprotective, overanxious and sometimes overly indulgent, and usually they do not know why. The relatively immature, self-centered person may have unsatisfied basic needs for a dependent and protective relationship. These needs may have been frustrated in childhood and never adequately satisfied in marriage. The onset of the feeding problem may destroy whatever positive meaning the infant had for the mother. The eating problem makes demands on her energies and increases her feeling of failure as a mother. The net result is more stress on eating, and this usually makes the problem worse and the child more dependent. Pressure from friends and relatives increases the anxiety. The mother is no longer able to refrain from coaxing and spoon feeding. She may feel



"I wouldn't trust anything but LUX," says triplets' mother

MRS. HENRY J. BLANCHETTE, mother of these cunning triplets, is very wise about their care. All their wee garments are *safely* washed with Lux.

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compelled to force-feed. Retaliative vomiting often appears; the child in turn tends to make excessive and unreasonable demands, possibly in an attempt to regain the sense of being loved and wanted. A vicious circle results which may lead to a breakdown or its equivalent. Separation of the mother and child by attendance at camp usually results in temporary improvement. Part of the mother's tension may arise from her own similar training in infancy. The impact of the mother and child on each other may bring about various degrees of this pattern, which seems to be repeated from generation to generation. Superficial observation would indicate an hereditary tendency. However, the actual clinical findings point to "contagion by contact" in the same way that infectious physical diseases are passed around.

PREVENTION

The prevention of feeding problems is the best form of treatment. When a vicious cycle is set up it is difficult to unravel. When the child is born, instinct makes it nurse to obtain food. Interference with nursing causes frustration and anger. A certain amount of sucking is necessary, and nature wisely makes it a pleasurable activity. One of the early problems associated with feeding occurs when the milk comes too fast from the breast or bottle. The stomach is filled before the sucking need is satisfied. Dr. David M. Levy of New York has found that some thumb sucking is produced by enlarging the hole in the nipple, and cured by making it smaller. Proper regulation of the rate of flow of the milk is therefore necessary to avoid such complications as thumb sucking. The importance of avoiding urging, coaxing and forced feeding has already been made apparent. Any measure which emotionally charges the feeding process is to be avoided. Feeding may become the subject of a contest of wills between the parent and the child. In this struggle, the main issue of nourishment may be lost sight of and the clash of wills take the center of the stage. A little intelligent awareness of childish motives may be all that is needed to prevent such a situation.

A pleasant atmosphere at the dinner table and attractively served food will do much to forestall food fads and the like. One good policy is the early, polite, calm insistence on no dessert unless some of most articles on the menu are eaten. A good parental example is most important. When father or mother or grandmother says, "These potatoes are not fit to eat," the children are likely to take the same attitude. There are many tricks in the management of food problems. A canny Scot once said "Love your children, set them a good example, and leave them alone." In the management and prevention of eating disturbances this is good advice to follow.

CORRECTION OR TREATMENT

A medical examination to rule out causative physical conditions is the first step in correction. Youngsters with foci of infection such as diseased tonsils or adenoids and a host of other mild ills may not have a good appetite. When medical treatment does not suffice and a feeding difficulty is established, wisdom, time and patience are essential to attain a remedy. Each child's peculiarities must be studied. There is no magic pill which will mysteriously "cure" the difficulty. A consultation with the family doctor may point out a method of correction to be followed. In long standing cases harmful eating habits may require prolonged, intensive treatment by a qualified psychiatrist. The more involved and fixed the problems, the less likely is success to be attained. An ample treatise on the correction of feeding disturbances would be tedious. More helpful is a general understanding of the normal developmental processes and the avoidance of errors warned against in the discussion of prevention. Practical, matter of fact, unemotional management is essential. All coaxing and forcing should be discontinued. A rule of "nothing between meals" makes an ally of the natural force of hunger. Artificial incentives and rewards put too much emphasis on food and usually do not work well. Punishment likewise is usually ineffective. Even the question of no dessert must be handled carefully. Dessert is an integral part of a planned meal. Even a taste of most articles of food on the menu is sufficient to entitle youngsters to the delicacy or sweet. It is probably better that dessert should not be allowed to become a reward or its withholdance a punishment. A good rule is to put only a small quantity of each food on the plate, with the hope that the child will ask for more. This simple device may change the whole complexion of mealtime. Dawdling at meals is a source of frequent vexation to parents. One can simply remove the food calmly and unemotionally at the end of fifteen or twenty minutes with the comment that it is time to do something else. Sufficient hunger may accumulate so that there will be no difficulty at the next meal. Children use picking at their food and slowness in eating as a means to obtain attention more appropriately given at another time.

Every one in contact with the child should follow the same program. Even if the mother and father eat politely, all their good efforts may be nullified by some one else at the table commenting about his food dislikes or special aversions. We should never lose sight of the normal tendency to imitate. Nursery school teachers too often find parents' food dislikes reflected in children's tastes and attitudes. For example, Mabel, age 10, did not eat well. No physical disability was found. All the usual precautions and methods had been tried without effect. The parents had even set up a small table so that the children could eat by themselves, and yet Mabel's appetite was dangerously poor. Finally, the doctor suggested that he be invited to dinner so that he could observe the child. He sat at the table in a position where he could see what went on in the breakfast nook where the children ate. Imagine his surprise to see an elderly, fussy nurse and housekeeper urging and scolding Mabel and the little ones to eat everything on the plate. This serves only to illustrate that all the children's contacts are important. Many motives and forces may be hidden and require acumen and understanding to fathom. Expert diagnosis and advisory treatment are frequently available at the local Child Guidance Clinic, a service which can usually be obtained through the family doctor.

A child with feeding problems is an unhappy child. When properly managed, the milder difficulties will pass away. Any form of coercion is not only unnecessary but harmful. In view of all these considerations, it is clear that many food problems can be understood only in their relation to the child's whole pattern of life adjustment.

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The MENACE



"Leave maternity to the mothers and encourage fathers to be paternal!" urges this anonymous plea for a normal division of parental duties

WE HAVE BEEN MARRIED for fourteen years. During that time we have lived in four different communities. In each one there was a maternal father who menaced the peace and happiness of our friends by planting in the minds of otherwise contented wives and mothers the feeling that their Tom or Bill or Hugh was not properly interested in and attentive to the new, squirming baby in the basket.

The maternal father arrives home promptly after work. If he commutes he has his hat on and is sprinting for the train while his fellow workers are straightening their desks or their accounts. He shoves through the crowd waiting for the train in order to get a seat or standing room near the door, for he can be depended on at whatever cost to himself or others not to lose one precious moment with his infant. On arriving home, he speedily sheds hat and coat, scrubs his hands with approved child study technic, then, clucking gently, lifts the baby from the basket and takes over the cares of the mother until bedtime for the small creature approaches, and it is tenderly laid away for the night. He bathes and diapers, and holds the bottle. With his mouth full of pins he coos in ecstasy and calls on the world to

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of the MATERNAL FATHER

marvel at his baby's growth. In the meantime the adoring mother sinks into a comfortable chair to relax, or tiptoes out of the room—leaving father and child together in gurgling bliss.

All this sounds very beautiful, just as the articles in the child study magazines and the lectures to the mother-to-be and the just-become-a-mother sections of the child study group would have it. The devoted family group growing up together—the father pinning on diapers and holding the bottle—form the never to be broken bond which in the eyes of experts can only be achieved through the physical care of the young child. A frequently overlooked flaw in this picture of parental relationships is the sometimes destructive effect which this idyllic picture seems to have on more usual—indeed we suspect more normal—family organization. We have no quarrel with the maternal father, or for that matter with the woman who refuses to accept maternity. The father who turns down the opportunity to hold his wiggling young one in the tub is missing a circus in his own home. We do not think much of his eye for fun. But we protest that neither should be glorified as representing a standard by which others should be judged.

The extreme need of many women today to urge and encourage the father to assume a more maternal role seems to be compensatory and not based on the role of the male in the development of the race. The failure they seem to feel when their men do not prove to be as maternal as they are themselves seems a needless grief. It appears to us that it is a symptom of the period which has naturally followed the emancipation of women, a period of flux in which there has been a loss of balance between the sexes which has not yet been completely stabilized. Might it be possible that as a result of their emancipation there has arisen in the minds of many women an inability to accept sexual differences either biologically or temperamentally, a desire to lessen the gaps of the past, so that they necessarily tend to interpret the role of man as nearly as possible as similar to that of woman? If this were so, a satisfactory paternal role, to many women, would have to conform as nearly as possible to her own maternal role.

Emancipation and participation in affairs outside the home cannot change the fact that the basic biologic role of the female of the species has been that of bearing, nurturing and suckling the young. It is true that the development of nursing bottles and the seemingly decreasing ability and desire of many modern mothers to nurse their young has removed the necessity for a mother to remain near her child during the early months of its life. It is certainly possible for the modern mother to leave her child to the care of a grandmother, a nurse or a maternal father from birth with reasonable safety. However the fact remains that feeding a newborn child is not as natural a function for the father as for the mother. Historically, the father has gone to the hunt or has worked to provide care and protection for his family, while the mother has cared for the children. Physiologically, the male organism has been better adapted to the more active life outside the home. By and large, in the world as we know it, the men we know would become tense and irritable under the daily needs and demands of the care of a house and children. It would seem to be easier for the mothers to go out into the world and take over the masculine jobs than for the average male to remain in the home in the role of homemaker. This being so, it would seem that we may accept as a natural arrangement for our culture that the women should care for the children and the male earn the wherewithal to support the family.

If it is the general pattern for the man to be away from the home all day in the office or the shop or wherever his work may take him, it will be the unusual male who on reaching home hungry and tired at the end of his day's work will have either the inclination or the vitality to plunge into the role of diaper changer and baby feeder. One father of our acquaintance, whose wife was concerned because he did not play with his son on his return home each day, said, "Ruth is upsetting herself because I do not get down on the floor and play with Jim when I get home in the evening. She thinks it means that I do not love Jim because at that time of day I prefer my pipe and paper. I have been working all day with people. I am tired and need to relax. To play with a child, however greatly I love him, is not relaxing to me. Why can't she see how happily we play together on Sundays or when I am home for a holiday? She frets unnecessarily."

Few fathers seem to be outwardly interested in the tiny baby. As one father expressed it, "The little thing is cute, but at present she sleeps all the time. She is so small to hold, and you can't do anything with her but hold her. When she is big enough to do something I shall be able to play with her and enjoy her, but now I feel awkward holding the little thing and trying to make foolish noises to please my wife." One mother we know wept because her husband would come into the house to greet her and pass the

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baby in his buggy on the porch. Within a year the same father had become an enthusiastic parent. It seems too bad that these mothers could not accept their husbands as normal men and realize the differences between the attitude of men and women toward tiny babies. How much more satisfactory their lives would be if they did not demand adoration of the child in the cradle, such as the maternal father in the block lavishes on his child, but could believe that the day will come when the child responds to the paternal father and the father to the child.

It appears to us that the role of the father can be rich indeed without being maternal. It is our observation that children apparently thrive most when they have both a masculine and feminine pattern in their parents. Both girls and boys seem to need a maternal, affectionate, supporting mother, and we have been impressed with the success of families in which the mother is complemented by a masculine, somewhat stricter though tolerant father, understanding but expecting more mature, and from his sons more masculine, conduct. We present this as a good pattern, although not as the only one which is successful. We do doubt the wisdom or necessity for two mothers in a family!

Why not encourage fathers to be themselves and to follow a more paternal pattern? Encourage them to romp and play and work with their children in their own way, developing paternal bonds and deepness of affection which may be just as lasting as that which the maternal father develops by pinning on diapers or spooning out mush. To us, it seems in many ways more wholesome. Perhaps it is wise to differentiate between the things which the child does with its father and with its mother. We would not go so far as to advocate that men should be men and women women, for there are values to be gained in borrowing from each other's traits. But certainly life is based fundamentally on the biologic function and development of male and female. It is to be doubted whether much is to be gained in an attempt to maternalize the fathers of the race. Might it not be better to encourage paternal fathers and leave maternity to the mothers?

The Human Eye

(Continued from page 422)

It has recently been shown by experimentation that if certain essential vitamins are withheld from the food of a mother pig at a certain period of gestation, the result will be a litter of pigs born without eyes. It has also been shown that the injection of certain organic substances, called *antigens,* into the circulation of a pregnant rabbit will result in arresting the development of eyes in the unborn rabbits. Moreover, this arrest in development may be made to correspond to the time when special structures of the eye are due to take on increased activity. For example, at a certain prenatal period the rabbit's crystalline lens is due to take on a very active growth, and if at this time the cells in the lens should suffer from altered nourishment or toxic injury, then the lens would fail to develop and the little rabbits would be born without their lenses—blind. In this way it is possible to produce many kinds of deficiencies in eye development—even the entire absence of the eyeballs.

We often see a similar situation in the human eye when a mother has suffered some nutritional disturbance of the germ cells of the eye at a critical period of its prenatal growth. Thus we can understand the large number of eyes found to be imperfectly formed at birth, as is shown in congenital cataract and other forms of arrested development.

An appreciation of the extension of these principles helps us to understand the occurrence of a malignant form of cancer known as glioma of the retina, which is frequently found inside the eyeballs of children. In this condition the germ cells, which are intended to go forward, fail to carry out the

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normal changes, and when this occurs these cells simply adopt their original trend of indefinite and indeterminate multiplication. In other words, the germ cells run wild, and being unrestrained by the normal demand for differentiation they increase with amazing rapidity, invading the neighboring structures of the eye and brain. This form of cancerous growth always leads to the death of the child unless it is promptly and radically removed by surgical intervention.

ANATOMY OF THE HUMAN EYE

The adult human eye is approximately one inch in diameter and is nearly spherical in shape. Each eyeball is situated in the center of a cavity—called the *orbit* (or *orbital cavity*)—which is shaped like a pyramid or funnel, with its base directed toward the front and the point, or apex, of the pyramid directed backward toward the brain. The orbit can be compared to a little room with walls of ivory-like bone enclosing the cavity on every side except the front, which is left open so that the eye can look out as through an open window.

Back of the eyeball is a mass of fat, held in position by fibrous bands (*fascia*) interlacing in every direction. The eyeball rests in this cup-shaped pillow of fatty tissue and is thereby protected against the hazard of being knocked against the hard walls of bone surrounding the cavity. Lining this cushion of fat is a tough, but thin, fibrous membrane which is very smooth. It is called the capsule of Tenon, for the French physician who first described it. It is lubricated with a clear fluid in order to facilitate the rotation of the eyeball in every direction. Through this orbital fat run the blood vessels, nerves and muscles that lead to the eyeball. They all proceed from the small area around the peak of the pyramid-shaped cavity.

Between the orbital wall and the mass of fat is the *lachrymal gland*, which produces the tears that are discharged on the outer surface of the eyeball, supplying a continuous but gentle flow of weak salt solution over all the outside coverings of the globe. This gives a mild antiseptic action, together with adequate lubrication.

Covering the eyeball are various coats of tissue—called *tunics*—intended for different purposes. The *conjunctival tunic* is a delicate mucous membrane which lines the lids and covers the front part of the eyeball, furnishing lubrication. The second type, or *fibrous tunic*, consists of the *sclera* and *cornea*, which together constitute the framework of the eyeball. The cornea, which is a smooth, transparent portion of the eyeball, is located in front and occupies one sixth of the total area of the globe, while the sclera, or back part, is opaque and tough and comprises the remaining five sixths of the surface. The third group, or *vascular tunic*, is composed of the *choroid*, *iris* and *ciliary body*. The choroid is a thin membrane, containing a brown coloring matter, which lines the inner surface of the sclera. Its most important function is to absorb the light and carry blood to the interior of the eyeball. The iris stretches like a curtain across the front section of the eye and regulates the light passing through the pupil, which is the central opening through the iris. The iris is supplied with two muscles, one for contracting the pupil and the other for dilating it. The contracting muscle is supplied by branches of the third nerve from the brain, and the dilating muscle is supplied by branches of the sympathetic nerves. In addition to the iris, and associated with it, there is another muscle, the *ciliary muscle*, which is the focusing muscle of the eye, and this also is supplied by branches of the third nerve from the brain. The contracting muscle of the iris and the ciliary muscle work together and, both being supplied by the third nerve from the brain, produce at the same time two results—a contraction of the pupil and a focusing of the eye for near points. The choroid united with the iris and ciliary body constitute what is called the *uveal tract* from their resemblance to a grape hanging on its stem. If we remove the cornea and the sclera and leave the other internal structures of the eye hanging by the optic nerve, we have a dark-colored globular mass which much resembles a grape—hence its name, derived from the Latin word *uva*, meaning *a grape*. This whole area composed of the iris, choroid

(Continued on page 479)



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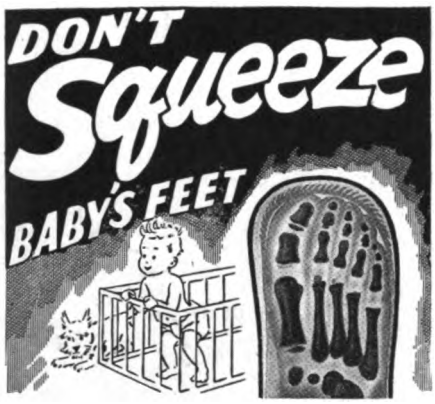
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Health Aspects

EVEN TODAY, the school program and its schedules are the result largely of an inheritance of colonial and rural conditions surviving from the time when boys and girls went to school to get information in the three R's, while all other information and all vocational and physical training were received in the home, on the farm or in the shop. While there has been some definite effort to break away from this artificial setup in some of our cities and in a few of the larger towns, the condition still exists, unfortunately, in large parts of this country.

A child cannot profit from school unless he is present in school to receive the benefits of its program. Absence from school, therefore, is a serious handicap to the child; this is evidenced by statistical information indicating that the most prominent cause of school retardation is absence. The community loses also, because this absence and the resulting retardation increase the cost of public school education. A poorly arranged program, an unduly prolonged school year or too lengthy daily sessions increase the irritation and fatigue of school life. Fatigue is an extremely important factor in undernutrition, and it tends also to increase susceptibility to infection, which results ultimately in increased absence and retardation.

Any properly planned program of activities or schedules will include consideration of age, sex, grade, type of school, health and the environmental conditions such as economic status, type of community, intelligence and education of parents. It should consider, too, the life aims of the pupils themselves and the plans of parents for the training of their children.

The sequence of subjects in the schedule, the length of class periods, the interposition of recreational periods, the length of the school day and the length of the school year all are affected by these conditions. The basic consideration in efforts to bring about a reorganization of schedules that will result in a shorter day or in a shorter school year is "How is the time saved to be used?" However, we have progressed a long way from the situation which made it possible for the School Committee of the City of Boston in 1789 to decree:

"That the children of both sexes be admitted into the reading and writing Schools at the age of seven years; that they be allowed to continue in the reading and writing schools until the age of fourteen, the boys attending the year round, the girls from the 20th of April to the 20th of October following. Summer time hours: 7-11 a. m.—1:30-5:00 p. m. [7½ hours]; Winter time hours: 8-11 a. m.—1:30-4:30 p. m. [6 hours]. No school on Thursday or Saturday p. m."

It would be interesting to know the thought (if any) in the minds of the School Committee when it decided that boys must go to school twelve months in the year and girls only six. Why this distinction? Did the girls need less education, or were the boys more stupid?

It was not until the 1880's that the schools in Boston and vicinity abandoned two half holidays a week and school sessions on Saturday morning for the present schedule.

The tendency toward multiple divisions of the school year, so that instead of a child being in one room and one grade for a whole school year of ten months, he now has a school year divided into two and sometimes four periods with opportunity for progression several times during the school year instead of only one, increases the promotion

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# of School Schedules

By CHARLES H. KEENE

rate and improves the mental attitudes of pupils, teachers and parents. The single term year had several drawbacks. A failure compelled a child to repeat the work of a whole year. It also tended to prevent the rapid advancement and education of the bright pupil, since skipping a whole year was difficult and risky.

What should be our attitude toward the two or more months between the close of school in June and the opening of school in September? This long vacation is a survival of rural agricultural conditions where there was no school for several months in the warmer part of the year because the labor of the child was valuable on the farm, and schools, especially for older children, were carried on mostly during the winter months. Compulsory extension of the length of the school year by legislation has been bitterly opposed by the rural populations.

What about the time wasted out of our present schedules? Some secondary schools have a daily auditorium program from thirty-five to fifty minutes each. Much of this time is not profitably used. It is impossible, without an enormous amount of expenditure of time on the part of pupils and teachers, to prepare worthwhile daily programs, and it is too expensive to hire, daily, worthwhile outside talent. A large part of this auditorium time might better be used for physical activities to build health and stamina.

In planning the length of the school day and the schedule for the day, at least four important factors must be considered: the actual time in the school day, the number of periods and the method of dividing the day, the content of the periods set up, and the opportunity offered during that time—and this is particularly essential in the lower grades—for play and other physical activities. We might add to these the health elements involved in the period beginning the morning session.

Kugelmass in his text, "Growing Superior Children," sets up the following needs regarding the length of night sleep: 4 to 6 years of age, thirteen hours, bedtime 7:30 p. m.; 6 to 8 years, twelve hours, bedtime 8:00 p. m.; 8 to 12 years, eleven hours, bedtime 8:30 p. m.; 12 to 14 years, ten hours, bedtime 9:00 p. m., and 14 to 16 years, nine hours, bedtime 10:00 p. m.

The school day should be so arranged as to permit the proper amount of sleep between one hour after dark in the evening and at least one hour preceding the opening of school in the morning. While it is impossible in the northern United States during the late spring and early fall months to adhere rigidly to this standard, no artificial hurdle should be established that makes this more difficult and school schedules should be arranged as far as possible to allow adequate sleep and to provide at least an hour for the young child to get up, wash, dress, eat breakfast in orderly leisure and get to school.

The length of the class period, the placing of recreational and physical activities between class periods and the sequence of topics listed through the day are extremely important health factors in the hygienic arrangement of the schedule. In grades and in schools where there is little or no departmentalization, our leading experts for a generation or more have advocated a procedure approximately as follows:

1. Opening exercises, followed by cleanliness and health habit inspection, should begin every school day.
2. Things which, in themselves act least as a motive for accomplishment should come when the mind is freshest, probably immediately

Health Activities in School

Taking into consideration the physical, physiologic, and psychologic characteristics of the age of the child, the number of minutes per week allotted to the various activities of school should approximate the following. The time shown for recreational periods, physical education, health instruction and noon intermission should, in each case, be considered the minimum need.

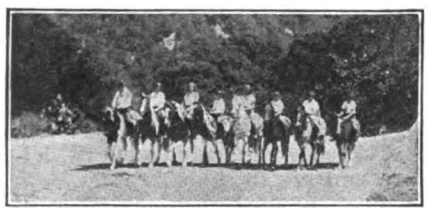
Grade	I	II	III	IV	V	VI	VII	VIII	IX	X
Length of school day	1350	1350	1500	1500	1650	1650	1800	1800	1800	1800
Recess	150	150	150	150	150	75	75	75	75	
Physical education	180	180	180	180	180	180	180	180	180	180
Hygiene and physiology (health teaching)	60	60	60	60	60	60	60	60	60	45
Noon intermission **	375	375	375	375	375	375	375	375	375	150*

* Luncheon.

** Not included in the specified length of the school day.

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following the opening exercises. Abstract concepts of number, such as the usual arithmetic, fall into this class.

3. Subjects having human interest should follow. These are such subjects as geography, history, and civics (if properly taught).

4. The recess period should be placed at approximately the middle of the session. It should be at least fifteen minutes in length.

5. Memory work, such as spelling and formal grammar, should follow a relaxation period such as the morning recess or the noon intermission.

6. The period following the noon intermission is a highly efficient one if pupils have been properly fed and if the intermission is long enough for the child to get home, eat properly and get back to school without rush and hurry. (This takes at least one and one-fourth hours.) Here should come subjects requiring concentration of little less severity than abstract number work. These may be English composition, history and geography.

7. An afternoon as well as a morning recess is essential in all grades below the sixth.

8. Subjects containing large social elements should end the classroom program for the day. These may be art appreciation, music, current events, health discussions, dramatizations, educational motion pictures and excursions.

9. The various activities of physical education should be so spaced as to provide the maximum effect for relief of fatigue and for body building. Relaxation periods of from two to five minutes each should be placed between each two study or recitation periods. Windows should be opened, and vigorous physical activities given.

10. Recesses, weather permitting, should always be outdoors. The activities at this time should be so organized that every child has the desire and opportunity for safe, vigorous play suited to his age and strength.

11. Hot school lunches should be provided for all pupils, if they are unable easily to get home during the noon intermission. All children below the seventh grade should have opportunity for a lunch of milk or hot chocolate at morning recess. Whenever the financial condition of parents requires it, this midmorning lunch should be provided at public expense.

12. The length of the school day should be graded to suit the age and the mental and physical resistance of the child. The question for boards of education to decide is not "can the child get a certain amount of information in a given time?" but "is the length of the time decided on within the limits of the child's fatigue resistance?"

Where departmentalization has been introduced such a hygienic arrangement becomes impossible, since if one teacher is to teach arithmetic only, some pupils must have arithmetic during the last period, when properly they should have a much lighter and more recreational subject. The present tendency, fortunately, is away from departmentalization in grades below the seventh. In this particular, Kugelmass says:

"Children are wronged by enforced molding to the norms of mass measurement. Standardizing plastic youth into average patterns is detrimental physically to growing children, troublesome psychologically to perturbed parents, and false biologically to the national ideal. Children are individual, not average, in their mentality, in their bodybuild, in their organs and tissues."

While we have had kindergartens in some of our schools for many years, even yet in a high proportion of the schools no such facility for developing the child and accustoming him to the routine and restriction of the school exists. While the instruction and the activities of the kindergarten have definite health and psychologic values, this gradual breaking-in process also is important. It is doubtful, however, if more than one school year should be spent by any child in kindergarten. Some feel that one semester probably is all that is essential. Any assignment of longer than one year tends to lead to repetitive procedures and boredom, and distaste for school on the part of these young children may result. Not all kindergartens are so conducted as to be beneficial.

At what age should a child be admitted to the routine of the school schedule? In nearly all our communities the basis of admission is wholly unscientific. Children should be admitted to school only on physical, physiologic, and psychologic

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standards, the determination of the status of the child being based on thorough individual examinations. At present, all he needs to be admitted to school is proof that he was born five or six years previously. This again is a heritage, coming down to us from the time when no means were available for accurately ascertaining qualifications.

What are some of the opportunities that should appear in the school schedules as a measure of fostering and improving physical and mental health? In addition to the facilities and time allotment for games, dancing, sports and various types of physical education activities, there should appear also, and these have great value even at an early age, debates and discussions on health topics; contests having in them health procedures as the basis of judgment; such things as health week, health exhibits, health posters and health projects relating school and community; contests and auditorium periods centered about health ideas or about the education and functioning of communities in play, recreation, physical education and health instruction program, and on the coordination of these efforts; and surveys of health and recreation conditions in school and community.

It is important, too, that the schedule set up should be flexible enough so that there will be opportunity for the classroom teacher or a special teacher to be present at the time of the physical and health examination of his or her pupils, and so that the teacher, in the lower grades at least, may have time set aside for the daily health inspection. The schedule should provide, too, opportunity for routine weighing and measuring of children. While we no longer believe fixedly in the idea that a child of certain age and height must weigh a certain amount, repeated weighing and measuring indicate rates of growth and therefore health status. Adequate periods must be set aside in consolidated and secondary schools for rest periods, not only for recreation and physical activities, but for the quiet rest period which is essential to the restoration of health and mental ease to some pupils. The physical education program must be adjusted to the age and needs of the children participating in it. The physical environment must be sanitary and healthful, and the teacher giving instruction should be emotionally balanced and mentally and physically sound.

Every teacher should ask herself the question: "How can my teaching improve the life of my pupils? What can I do to help my pupils find solution to the problems of life they face in this community? What are the problems that boys and girls in this community have to face?" The answer to the last question is the starting point in the program of teacher education, pupil development, and community improvement. The first of the seven persistent problems set up by the Committee on Community Organization for Health Education of the American Public Health Association is maintaining mental, emotional, and physical health.

The schedule is the detailed application of the curricula in the school program. In building the program, or a curriculum, several applications are recognized: the child experience application emphasizing the importance of experience; the creative values application, which might be called experiences which the child himself has designed; the advanced or frontier application which obviously results in sharp divergence from present practices and the neglect of certain older practices which ordinarily we find in a school program. An effort must also be made to develop and secure social and moral outlets that will be beneficial to the child and to the society in which he may be placed. It is necessary to emphasize the necessity of having definite service in curriculum and schedule building from a specialist in mental hygiene.

A SYNONYM FOR NICOTINIC ACID

A synonym for nicotinic acid, the antipellagra factor in vitamin B_2, has been selected by a committee named for that purpose by the Food and Nutrition Board of the National Research Council, it is reported in *The Journal of the American Medical Association*. "Niacin" has been selected for nicotinic acid and "niacin amide" for nicotinic acid amide. The Council on Foods and Nutrition of the American Medical Association announces it has approved these synonyms for preparations that come within its scope.

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BOOKS ON HEALTH

Dancing as Art and Exercise

Invitation to Dance, by Walter Terry. Cloth. Price, $2.00. Pp. 180. New York: A. S. Barnes and Company, 1942.

Walk Your Way to Better Dancing, by Lawrence Hostetler. Cloth. Price, $2.00. Pp. 263. New York: A. S. Barnes and Company, 1942.

Walter Terry, dance critic of the New York *Herald Tribune* and author of "Invitation to Dance," has had the personal experience of having studied all types of dancing with many of America's leading teachers. He writes not only from actual experience but from the view point of a dance critic. He relates in an entertaining style the growth of dancing in America and its influence on the theater and college. In fact he considers it a form of recreation for all. He makes a plea for an American Ballet for Americans. Dancers the world over dance for exactly the same reasons and have had the same reasons since the dawn of history. He divides the reasons into four parts: physical exuberance, mimetic communication, sex impulse and religious ritual. In stating these sources he tries to show that dancing is not a fad, but that the urge to dance is as enduring and unchanging as the physical, mental and emotional and spiritual attributes of the human being.

Every other nation has a dance art that emerged from its folk forms. Our American dance art could never emerge from a single dance idiom because so many races are represented in the makeup of America. Mr. Terry feels that for our own pride we must bequeath to the world an American dance art as well as American music, painting and literature.

He follows dancing through the years by giving each American dance artist credit for her or his contribution to the American dance, starting with Isadora Duncan, Ruth St. Denis (whom he calls the mother of American dance), Martha Graham, Doris Humphrey, Charles Weidman, Agnes De Mille, Winslow Fitz-simmons and many others. He has great hopes for these American moderns in dance.

Mr. Terry finds the type of stage dancing—tap, ballroom, acrobatic, etc.—seen in our night clubs and better restaurants on the upgrade. He feels this is due to the fact that the public is becoming more educated in the appreciation of good dancing. He finds Hollywood entirely lacking in the art of photographing dancing.

He also finds dance courses in the elementary schools and colleges varied and inadequate. The teachers lack good training. He gives Phoebe Barr, with whom he studied at the University of North Carolina, much credit for fine work and understanding of dancing as it should be taught in the colleges to appeal to young men and women. Her success at the University of North Carolina made the board of trustees sit up and take notice; they decided to give credit for the course. So far, few educators have recognized the educative force of the dance and therefore do not allow money to be spent on the dance department. "Surely the oldest art in the world must be given a place in our scheme for education." Mr. Terry is a true lover of dancing as evidenced by the last paragraph, in which he says: "Dancing makes living easier, for dancing is fun and it is fun to watch dancing. If you like life, you'll like to dance."

There is a spontaneity and enthusiasm about Terry's writing and a fine understanding of the subject which makes the book enjoyable even to a person not especially interested in dancing.

Mr. Hostetler has devised a simple system of teaching the different ballroom dances used today, based on his wide experience of teaching large numbers of pupils in various universities and schools. Each type of dance is given a "vocabulary" of about five or six steps or figures. His five main points for instruction include:

1. Body control (exercises for muscles and joints to "put the body in tune").
2. Dance-walk (walking based on good body mechanics).
3. Moving with partner (doing the dance-walk forward and back with partner).
4. Leading and following (depends on the mastery of 1, 2 and 3).
5. Steps and combinations in all rhythms.

Modern ballroom dancing has its own definite technic. It is more than simply moving around the floor with a partner. Many persons dance without ever having had lessons, but their dancing appears to the experienced eye just as bad as "playing by ear" sounds to a fine musician. Good style in ballroom dancing can be accomplished only by lessons and practice. This type of dancing comes under the same class of exercises as walking and must be done in good posture to be of any benefit whatsoever. "To walk well is to dance well."

MERRIEL ABBOTT.

Conquest of Bacteria: From Salvarsan to Sulfapyridine

By F. Sherwood Taylor. Foreword by Henry Sigerist. Cloth. Price, $2.00. Pp. 175. New York: Alliance Book Corporation, 1942.

Because of the current interest being shown in the sulfonamide drugs, commonly referred to as "sulfa drugs," any book which deals with chemotherapy will evoke a response from interested readers. The present book is not dissimilar to others which have been written for lay readers on the subject of the control of infections in that it presents its contents in an interesting style. However, it is unfortunate that some of the errors in typesetting escaped the attention of the proofreaders before the book went to press. Such errors are always a source of annoyance to the reader.

"Conquest of Bacteria" is provocative, but it does not present the latest information on chemotherapy. For example, the author offers fairly attractive pictures of sulf-

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anilamide and sulfapyridine but merely mentions sulfathiazole. The newer agents as sulfadiazine and sulfaguanidine are missing entirely from the pages. This is unfortunate as the reader may be left with the impression that sulfanilamide and sulfapyridine are the most, or the only, effective agents in the treatment of bacterial infections. Further, in one instance the author implies that these drugs may be given only by mouth. This, of course, is not true as there are now available soluble preparations which can be administered by injection. Perhaps the majority of readers will not object to the author resorting to redundancy to achieve greater dramatic effects, but they probably will resent any statements which are misleading in their implications, such as: "Sulfur-containing foods such as eggs and onions have to be avoided" (this pertains to the cyanosis observed in the use of sulfonamides); "It is thought that no one has ever been killed by a single dose of quinine, however enormous."

In a chapter entitled "The Need for Research," the author takes to task the present systems of teaching and research at hospitals and universities and implies that other duties interfere with research. Further he states: "Universities have chemical departments where such research could be carried on, but in the majority of cases there is no cooperation between the chemical workers and biologists, let alone medical men. It is very rare for the university research worker to take up the study of drugs as he has no certain means of securing the cooperation of pathologists and practicing medicine men." The author should familiarize himself with current activities at American educational and hospital centers.

AUSTIN E. SMITH, M.D.

Your Personality—Introvert or Extravert?

By Virginia Chase. Cloth. Price, $2.50. New York: The Macmillan Company, 1941.

Introvert and extravert are expressions no longer frequently used by psychiatrists or psychologists, but ten years ago they were very much in vogue to express the difference between the person who broods, thinks about his problems, or has a fantastic inner life—the introvert, and the person who pre-

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sents a maximum contrast to him—the extravert, who bubbles over, senses every mood of the person he is talking to and lives most of his life in close contact with his external environment. During the vogue of extraversion and introversion, as psychologically typed, much stress was placed on builds, which were alleged to portray these types. A tall, slender person was more often found to be an introvert, while the jolly, Santa Claus-like fellow was an extravert. The present book omits the current interests in the psychologic concepts lying behind these personality descriptions, although the psychologic pairing and the physical analogs which are emphasized might be considered generally to hold true. The psychologist is more interested today in trying to determine the reasons which cause people to be seclusive or to make contacts with others, and scientific psychology has made great progress in going beyond the superficial details so that they no longer are in themselves significant. Another objection to the present work lies in the fact that bodily types frequently do not have the corresponding personalities and the vast majority of well adjusted people have both introversive and extraversive tendencies, which change from time to time with age and changing emotional and environmental conditions. While the book is interestingly written and does present the contrast between the extremes, the blending of the two types and their consequent diagnostic absence are not adequately discussed or apparently understood by the author. She does cite a number of cases which illustrate points of division between the two types, but there is little in the book which would advance one far in the idea expressed on the outside cover, namely, "This book is intended to help you understand your neighbor and yourself." Certainly the various discussions on the introvert do not help in one's daily contact with such persons, for contacts with deep-seated introverts must be delicately handled, and even the skilled psychiatrist has trouble breaking down the mental wall surrounding them. On the other hand, the extravert in the typical condition which this author presents does not require much understanding for an adjustment; he adjusts well spontaneously. A number of rules are given and a number of statements made on how the types judge and misjudge each other. There is a chapter on everyday dealings with the two types, and a chapter on the relationships of these types in marriage. This reviewer has made a study of social-psychologic marriage problems for a long time without being able to find a rule to determine whether introverts or extraverts make better mates and is inclined to believe that when two persons are about to get married, they will still do so on the basis of their emotions.

LOWELL S. SELLING, M.D.

Marriage for Moderns

By Henry A. Bowman. Cloth. Price, $3.75. Pp. 493. New York: Whittlesey House, 1942.

This is the most extensive treatise of advice for those recently married or about to be married that has yet been made available. The preface says that the authors do not purport to answer every question, yet there are few questions which could possibly occur to intelligent people in search of information which are not considered in this book. Marriage is considered from every possible point of view, including sociologic, physical, psychologic and biologic aspects. Thus there are chapters which consider the decision to be married, the choice of a mate, the technic of courtship, engagement, wedding and honeymoon, matters of personality adjustments, reproduction, sterility and divorce. There is an excellent glossary of technical terms, a good bibliography and an index. The book is one to be recommended to all who are interested.

M. F.

NOTICE

Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through HYGEIA or the American Medical Association, unless published by this organization. The following list contains the complete addresses where the publishers mentioned in these reviews may be reached:

Alliance Book Corporation, 212 Fifth Avenue, New York City.

A. S. Barnes & Company, 67 West 44th Street, New York City.

The Macmillan Company, 60 Fifth Avenue, New York City.

Whittlesey House, McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York City.

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The Human Eye

(Continued from page 471)

and ciliary body constitutes the uveal tract. The principal nourishment of the eye hinges on this grapelike group of structures.

The *nerve tunic* comprises the retina, which rests on the choroid. The retina is the innermost lining or coat of the globe. It is in reality an expansion of the optic nerve, which comes from the brain and enters the eyeball from the rear. The optic nerve is essentially a portion of the brain pushed through an opening in the bony framework of the skull. After the optic nerve enters the eyeball it spreads out like an umbrella, lining the inner surface of the eyeball. The function of the optic nerve, an extension of the retina, is to carry impressions of images to the brain exactly as an electric wire carries its messages to and from the power house.

In addition to the tunics just described, the eyeball contains also four refracting media, structures through which the light must pass to undergo refraction, or the bending of light waves: (1) the *cornea,* already mentioned, which serves the double purpose of acting as a supporting membrane and also as a refracting medium; (2) the *aqueous humor,* a fluid which fills the anterior chamber of the globe with salt water, furnishes nourishment and lubrication and helps to give form to the eyeball; (3) the *crystalline lens* (so called because it is normally clear like a crystal), which is a double convex lens situated back of the pupil, a round opening through the center of the iris; (4) the *vitreous,* a transparent, jelly-like substance situated back of the lens and occupying four fifths of the globe, which gives form to the eyeballs and transmits light. These structures vary in density, and on this fact depends their ability to produce the bending of the rays of light in such a way as to bring these rays to a focus on the retina.

Thus it is that the act of vision is begun in the eye and completed in the brain. Both are necessary to vision, and any break in the chain would mar the picture or completely nullify the visual effort.

Attached to the outside of each eyeball there are six muscles (*superior rectus, inferior rectus, external rectus, internal rectus, superior oblique, inferior oblique*) for regulating its movements which enable the eyeball to assume thousands of positions each day. All these muscles are supplied with fibers from the third, fourth and sixth cranial nerves; hence the brain controls, through its nerves, all the movements of the eyeballs. Outside each eyeball is a small tear gland which produces tears to keep the eyes washed, moist and lubricated.

The eyebrows and eyelids are additional accessory parts of the eye. The eyebrows, situated on the ridge of the orbit, are covered with thick skin and fringed with small short hairs. Like an awning, they protect the eyes from light too brilliant, from intense heat or cold and often from the severe shock of injuries caused by balls, rocks, or other objects. The eyelids are movable shades which are drawn over the eyes in sleep, which shield them from foreign bodies when awake and which spread the lubricating fluids continuously over the eyeballs, thus showing the beneficent foresight of nature.

"BLOODY FLUX"

Sulfaguanidine, one of the sulfanilamide drugs, has proved to be quickly effective and safe for the treatment in the home, office and hospital of patients suffering from a form of diarrhea known as "bloody flux," G. M. Lyan, T. G. Folsom, W. J. Parsons and Irma Sprouse, Huntington, W. Va., report in a recent issue of the *West Virginia Medical Journal.* Their report is based on experience with 259 patients. They say that sulfaguanidine is preferred to sulfathiazole because of its freedom from toxic effects and that its greater safety is not to be overlooked.

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Medical News

OF THE MONTH

A. M. A. Participation in the War Effort

"Every officer, council, bureau and department of the American Medical Association, indeed the entire personnel of the headquarters office, are participating in the war effort of the nation," the Board of Trustees of the Association declares in the annual report, published in a recent issue of *The Journal* of the Association and to be presented to the House of Delegates at the Association's annual session in Atlantic City in June.

The annual report of the Secretary of the Association shows that the official membership list as of April 1, 1942, included the names of 120,701 physicians as compared with 118,441 on the corresponding date in 1941. The official Fellowship roster carried 73,747 names on April 1, 1942, as compared with 72,504 on the same date in 1941.

Motherhood During Bombing of Pearl Harbor

The courage of pregnant women during the bombing of Pearl Harbor on Dec. 7, 1941, shows that the quality of American womanhood is such as to be able to face a real crisis with remarkable fortitude, the same that was displayed by the pioneer women of this country, O. Lee Schattenburg, Honolulu, declared in a recent issue of *The Journal of the American Medical Association*, in an article describing the experiences of managing a community-wide obstetric program in Hawaii before, during and after a sudden major disaster.

Of particular significance was the following statement by Dr. Schattenburg: "The question arose what to do with the early pregnant woman whose husband had suddenly been killed. There were numerous instances of women who had been severely shocked by the sudden loss of the husband in the unexpected catastrophe, added to which was the discovery of an early pregnancy. It was gratifying to note the renewed courage of each of these women when she was advised to carry through with her pregnancy for two logical reasons: (1) she would be able to have a living memory of her husband who had died so gallantly and (2) she would be able to make a real contribution to the national program by bearing a child. I saw no hint of refusal to carry through after these facts had been carefully explained."

Venereal Disease and Prostitution

Any local, municipal system that encourages the giving of certificates to prostitutes that they are free from the venereal diseases "trifles not only with the health of its civilian population but also with that of the Army and Navy," *The Journal of the American Medical Association* warns in an editorial on "The Venereal Disease Problem in War." According to available scientific evidence, such certification is worthless.

Consumers Should Demand Enriched Bread

Consumers who buy white bread should demand enriched bread, *The Journal of the American Medical Association* declared in an editorial in a recent issue.

"For some two years," the editorial says, "medical and nutritional scientists have discussed the nutritional significance of bread, lawyers have argued about regulations pertaining to flour and bread, advertising copywriters have written about the new enriched bread. Consumers apparently have continued to pay scant attention to the important changes that have been made recently in this basic food. The average American consumes each day about 6¼ ounces of white flour in various forms; to a large extent flour is used as white bread and other bakery products. This amount of flour will provide about one fourth of the average daily caloric requirement. The amount of white pan bakers' bread consumed daily is sufficient to provide each man, woman and child in the country with 70 Gm. of bread each day, or approximately two and one-third slices weighing 30 Gm. each. Nearly all this bread is consumed without special regard to its nutritional value. . . ."

Resuscitation

In advanced asphyxia, after breathing has stopped, rhythmic inflation and suction of oxygen or oxygen-carbon dioxide (by means of an apparatus) at safe pressures is definitely superior to manual artificial respiration or rhythmic inflation (with an apparatus which blows air into the lungs without withdrawing it), George L. Birnbaum and Samuel A. Thompson, New York, declare in *The Journal of the American Medical Association* in the first of a series of papers on their investigations of various methods of resuscitation.

Parrot Fever from Pigeons

The case of a policeman with psittacosis (parrot fever), whose only known contact with birds was with common pigeons, was recently reported in *The Journal of the American Medical Association* by Henry Alicandri, Brooklyn. He points out that the disease, which is highly communicable, has been transmitted to man by parrots, parakeets, love birds and rarer birds of the parrot family and that this isolated case warrants closer investigations of pigeons as a possible source of infection.

Boils and Diabetes

The prevailing impression among both physicians and laymen that boils and carbuncles are commonly associated with diabetes and that the diabetic are predisposed or more likely to suffer from these pyogenic (pus producing) skin infections than are the nondiabetic is not supported by clinical investigation, John R. Williams, Rochester, N. Y., reported recently.

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