

it came time to harvest, the price of rubber was practically nothing, so the company came to the farmers and asked us to carry on. . . . A few of us carried on and played ball, until three or four years later when the price of rubber was between 10 to 11 cents per pound. Then we harvested.

The first check I got was for \$4,000, which exactly paid off a mortgage on my ranch, and frankly saved the day for me. In spite of doing many things wrong in cultivating and harvesting, I still made more money than I could have made on any other crop and they can have my farm anytime they want. I know this is the opinion of most any farmer in the Salinas Valley.

The cause of the British Restriction break, cheap native labor, has been an ever-present threat to rubber market stability, and has been the chief deterrent to guayule development and expansion in the United States.

When the first Dutch harvests in the East Indies were marketed in 1926, prices were high, and the natives found themselves rich as Caliphs. They bought phonographs, bicycles, flashlights, and so on. For awhile they lived in an Oriental paradise. When the bottom fell out of the rubber market, they sold their gadgets and returned to the jungle to live serenely on bananas and breadfruit.

American guayule growers, although they saw the approaching shadow of war, did not dare attempt further peacetime expansion on their own. They knew that a severe rubber slump in Java would not be a catastrophe to native growers who would only have to give up their radios (a popular instrument served by many native stations), and return to the old home jungle.

When an industry hits rough weather in the United States, though, there is no opulent jungle to support workers until the storm blows over. If heavy industrial and farming investments became dependent on guayule rubber growing in this country, a drop in the market price below production costs would be disastrous. So the Salinas rubber growers have awaited some plan to insure market stability—or the all-out defense need, now upon us, that would support expansion.

Guayule vs. Synthetic Rubber

SOME CRITICS DOUBT THAT GUAYULE PRODUCTION COSTS CAN compete with imported rubber, but as long as the world market price remains above 15 cents per pound, guayule can be produced profitably. Recently, President William O'Neill of the General Tire and Rubber Company made public a statement confirming this:

"The government can grow and process in two years enough guayule rubber to meet domestic and defense needs far more cheaply than it can build synthetic rubber plants to produce a similar tonnage," he said.

Present small scale production costs for guayule rubber are from 15 cents to 19 cents per pound, and imported rubber cost 22 cents a pound in October of this year. Large scale production of guayule, Mr. O'Neill says, should lower the cost of guayule rubber to about 10 cents a pound.

Two powerful groups have actively opposed the development of guayule rubber. First, those with investments in rubber tree plantations in the Orient, many of whom are Americans; and second, the petroleum interests who want support for the development of synthetic rubber, most of which is made from petroleum.

The government has already put millions of dollars into subsidizing synthetic rubber development, and will spend many more. In mid-January the Federal Loan Administrator announced that the nation would spend \$400,000,000 to

increase the production of synthetic rubber to 400,000 tons annually by the middle of 1943.

Synthetic rubber, however, is not real rubber and cannot replace para or guayule in many uses. Synthetic rubber has some advantages, such as resistance to heat, sunlight, and oily substances, which make it a valuable contribution to manufacturing efficiency. But old Mother Nature still has a few secret ingredients in natural rubber that makes it more elastic and wear-resistant.

Synthetic rubber is much more costly to produce than guayule; it has sold at from 65 cents to \$1 per pound. The capital investment for expansion of synthetic rubber production is also more costly than that required for guayule. The United States Tariff Commission's report states that the total cost of constructing plants for the production of synthetic rubber would range from \$75,000,000 to \$100,000,000 for every 100,000 long tons of yearly synthetic rubber capacity. For guayule, however, the capital investment for agricultural equipment, nurseries, buildings, maintenance shops, rubber extraction mills, and dewatering factories probably would amount to about \$20,000,000 for every 100,000 long tons of yearly production capacity—one fourth to one fifth that of synthetic rubber.

A New National Asset

IN ADDITION, GUAYULE GROWING WOULD GIVE AMERICAN farmers a valuable new crop, and initial production facilities would not require, as in the case of synthetic rubber, large quantities of steel, chemicals, and chemical equipment, now sorely needed for defense production.

The Department of Agriculture favors support of the attempted revival of rubber tree growing in Latin American countries, and millions of dollars from both the United States government and private funds have been poured into this enterprise. But the leaf disease that nearly wiped out Brazil's trees several years ago has seriously hindered present ventures. Botanists are trying to develop resistant strains, and otherwise to control the destructive disease, but little practical success has been achieved so far.

Inadequate reports on guayule's price and promise have been turned in to department officials. Guayule supporters (farmers, scientists who developed the shrub, and public-spirited citizens with no personal financial interest in the project) have been blocked at every attempt to get a complete and unbiased hearing. Another damper to government interest in home-grown rubber has been the administration's policy of discouraging any American enterprise that conflicts with exports important to other friendly nations.

The army and navy, vitally concerned with our rubber supply, have sent their own investigators to survey guayule possibilities. Their very favorable reports and recommendations for support were sent to Washington.

Several years ago Thomas A. Edison zealously sought a substitute source of natural rubber that could be grown in this country. He realized that the United States should plan for a day when she must be independent of foreign sources for so vital a commodity as rubber. He spent many years and much money growing and testing everything from daisies to dandelions, but never found any plant that had more than one half of one percent rubber.

Today, guayule with 22 percent rubber is past the experimental stage. And today, as never before, the United States needs a nearby supply of rubber to assure national security.

Nurses Wanted: A Career Boom

by EDITH M. STERN

What kind of job is it that the government is asking thousands of young women with education to equip themselves for? A dead end job, once the war emergency has passed? Or an expanding profession with a future?

THE FEDERAL GOVERNMENT WANTS 50,000 YOUNG WOMEN between eighteen and thirty-five—highschool education required, college preferred—to enroll immediately in nursing schools. There is a shortage of graduate nurses.

To meet the emergency requirements of the armed forces and the civilian population, every graduate nurse available for wartime duty must be relieved by newcomers to the profession.

It is a profession with a future. Girls who now embark on a nursing career will have more than the satisfaction of serving their country in an emergency. They will also have a post-war career with a future. Demand has exceeded supply in more than a hundred varieties and levels of nursing jobs, from bedside care to deanship of a university school of nursing; from direct service as a rural county nurse to supervision of a state public health nursing service; from being an airplane hostess to directing 3,000 nurses in municipal hospitals. "Even in the depth of the great depression, nursing jobs went begging for the kind of nurses the field required," says Anna L. Tittman, R.N., director of the Nurse Placement Service, Chicago. For graduate nurses who are also college women, job opportunities have been dizzying. Western Reserve and Yale University Schools of Nursing could place three or four times as many of their graduates as are available. An 1871 Godey's Lady's Book prophecy that one day nursing would be a field for "educated ladies" has been fulfilled.

It is shocking to discover that many college girls interested in nursing are discouraged by their parents. Nursing is looked down upon by some middle class mothers as not quite a nice sort of job, and nursing is thought of as being on the career level of glorified domestic service. This wrong impression on the part of parents has kept many talented young women out of a profession that for a generation has been raising its standards so that it really is a scientific profession, not just a job. Of course, nurses have some unpleasant duties to perform. So have doctors and dentists. Members of the medical profession have never been looked down upon because of such tasks. They represent science. Today, nursing is on a scientific plane undreamed of in a day and age when country girls with little education could easily become nurses. It takes more than a grade school education to prepare for nursing in an era of new medical techniques, blood banks, fever therapy, and modern nutrition.

Parents of college girls who wish to become nurses should visit a good school of nursing, see for themselves the carefully planned curriculum, the fine student body, the well prepared faculty, and learn of the revolution which modern science has brought to the careers of all who take care of the sick. Modern physicians, with their precise scientific approach to their own professions, must

count upon modern nurses. This means that more college graduates must aspire to the nursing profession.

The Public Health Nurse Teaches by Doing

EVEN AT THE BOTTOM OF THE LADDER A NURSE'S DUTIES nowadays are not wholly concerned with the ill. She is also a teacher, a missionary for fitness of mind and body. Surely that is as fine a profession as any American mother could wish for her daughter.

The contemporary visiting nurse does far more than care for the sick poor or give treatments by the hour for a fee. When I went with one on her rounds I saw her being family counselor, adviser on nutrition, sanitation, and child psychology. In a modern apartment Helen, eleven and precocious, had been ordered to bed for two weeks because of a continual temperature which the doctor said might indicate tuberculosis. The nurse gave the child a bed bath; told her mother, a cooperative, intelligent woman, what simple sickroom equipment to get; showed her how to keep a temperature chart. What was Helen eating? An informal discourse on principles of nutrition followed. . . . Helen bounced restlessly. Was she like this all the time? . . . "Yes," the mother answered. "She runs me ragged." The nurse capitalized on the child's adoring appreciation of the bed bath treat to explain to her, smiling, that her mother had other duties and that she must be considerate of her; later, she suggested some simple, inexpensive bed occupations for the child. "Be careful she doesn't become spoiled," she warned.

Five floors up in a tenement, Mrs. O'Brien, aged twenty-six, had had her sixth child. Five youngsters crowded the stuffy rooms. While the nurse attended to the mother, bathed the baby and spotted a sore in its mouth which she said must be watched, she chatted about general family matters. So they wouldn't eat liver! . . . would Mrs. O'Brien like a little book telling different ways to prepare it and other inexpensive meats? . . . And six-year-old Mary wasn't eating well? Maybe the O'Briens fussed with her too much . . . leave her alone through a few meals and see what happens. . . . Jimmie oughtn't go to kindergarten with that bad cold, and keep him away from the baby. . . . What did the children think about the new baby, anyway? Were they asking questions? Now would be a good time to enlighten them simply. . . . Deftly the nurse showed Mrs. O'Brien's sister, in temporary charge, how to make bags of old newspaper for the disposal of waste matter; explained that the window should not be flung wide open before the baby's bath. When we were about ready to leave, the young father, released for a few hours from his truck, came in. He beamed upon the baby. "Quite a responsibility," the nurse commented, as she packed her bag. He grinned. "Oh, I

dunno. Keep their bellies full, give 'em a penny once in a while, and that's about all there is to it," he said. "Oh, there's more to it than that," the nurse answered, and I felt a to-be-continued in her tone. "Well, goodbye—I'll see you all tomorrow."

Such apparently casual instruction in familial responsibility, child welfare and home economics, given as an obligato to ministrations, is, actually, thoroughly schooled and planned; all in the day's training and work of every public health nurse, whether she be paid by private or public funds. The cleavage between bedside care and preventive health measures is fast disappearing. Two decades ago, some health officers boasted, "Our nurses do no nursing." On the other hand ministering angels put hands on fevered brows, but did little teaching. The modern public health nurse becomes an effective teacher through doing; doing, in an emergency, is her springboard for teaching. Her main role is being popular interpreter of the findings of science, the link between the laboratory and the community. "Educated ladies" must be informed and articulate as well as deft.

Sometimes, of course, a public health nurse has her hands too full to give much individual bedside care, and must exercise all her ingenuity to transmit her health message. This is the case at present, for example, where U. S. Public Health Service nurses have gone to work with local health agencies in suddenly overpopulated defense areas. Their jobs often have the challenge of pioneering. In one district, composed largely of islands, the nurses' work consists chiefly in arranging regular meetings for mothers' clubs and midwifery classes. In another, from an office where orange crates serve as filing cases, the nurse instructs a group of 75 pregnant Mexican women through an interpreter; and, so far, although handicapped by an unsatisfactory water supply, has helped stave off any epidemics. Another federal nurse serves in the first organized county health unit in the state: none of the population has ever before heard of a public health officer, and the nearest doctor—except for one M.D. who is also the town mayor, druggist, and ambulance driver—is twenty-two miles away. Quite the opposite is a colleague's problem of organization: she was stationed in a county containing two rival cities, each with its own well-organized type of health work. Her "nursing" duty is to combine their facilities for their own and the county's defense health needs.

The Industrial Nurse's Day Has No Monotony

COINCIDENT WITH THE CALL FOR PUBLIC HEALTH NURSES in war production areas is the demand for industrial nurses employed by individual plants. On December 6, 1941, a single nurse placement agency had twenty times more requests for industrial nurses than it could fill. This nursing field had been expanding long before the defense boom, as industry discovered that it was cheaper to pay for health services to employees than to have them lose time through poor health. An industrial nurse's typical day includes almost everything except monotony. A worker comes in, back from sick leave for influenza; she talks with him, estimates his fitness to return to work. . . . A forewoman sends down a girl complaining of headache; the nurse consults her records; are headaches habitual with the young woman? . . . Men in the chemical division come in to have dressings on scratches changed.

. . . Her office unpopulated for a few minutes, the nurse wanders through the plant to check on its health-house-keeping. How is the ventilation? Are men in grinding departments wearing their goggles? Are too many colds about? . . . At lunch time she hovers in the cafeteria, tactfully suggesting luncheon choices. . . . Later, she may hold a class in first aid, or show a group of young men how to lift to avoid hernias. . . . She encourages dental care; prescribes precautions for pregnant women who remain at their machines; maternally advises imprudent girls to wear rubbers or warmer clothing. A good industrial nurse day by day gains the workers' confidence, straightens out off-hour difficulties. One company nurse, discovering that a factory girl's anemia came from malnutrition, managed to revolutionize the dietary habits of her whole family of eight. When to another a worker confided: "I wasn't really sick, all those days I was out. But my wife gets doubled up with arthritis, and I got to help with the kids," the nurse told him how to secure the services of a WPA housekeeper. Now he stays on the job.

Similarly, the long arms of nurses employed by large offices, banks, department stores, and schools, touching first their immediate charges, reach out among families and indeed entire communities to put them in contact with agencies that help them solve their health problems. There was a nurse in a rural school where many of the pupils had trachoma, an infectious eye disease. The parents had been unwilling to let children go to a distant hospital for treatment; but through their personal confidence in the nurse, one after another consented to the journey. Within a few years, the county's incidence of trachoma dropped from 30 to less than one percent.

The Special Nurse Is in Demand

IF THE CHALLENGE AND GRATIFICATION OF SOME NURSING JOBS lie in variety and scope, in others it springs from specialization. Medical specialties like obstetrics and pediatrics have their nurse as well as physician specialists. Nurses, with Children's Bureau cooperation, are getting postgraduate training at places like Tuskegee, Ala., in order to help lower our appalling rural maternal and infant mortality rates. Orthopedic nursing has been extended since 1937; one exciting aspect of its work is preventive. The orthopedic nurse can detect a youngster's slight abnormality of gait which may indicate congenital hip dislocation, see that it is treated in time to prevent lifelong lameness; knows how to strap a newborn baby's clubfoot, under a doctor's direction, to obviate several, possibly unsuccessful, operations later. Psychiatric nursing is in its infancy, but mental hospitals are more and more coming to recognize the need for staff nurses trained in the peculiar problems of the mentally ill, able to relate psychiatric to organic care. A longer established specialty is surgical nursing, with duties grading from scrub or suture nurse to operating room superior. Hers, as much as the surgeon's, is the responsibility for a smoothly proceeding and successful operation: it is she who must know the technique of each surgeon, assign each assisting nurse her duties, see that equipment is kept up and in order. The post is ideal for nurses with a precise and systematic cast of mind.

Many "specialists" are to be found among "private duty" nurses. They constitute a reservoir of nurses who prefer to practice as individuals and not as part of a staff,

and to give care to individual patients. The experts among them are always in demand. The less expert are subject to all the fluctuations of economic cycles.

Nursing in Institutions

ABOUT 49 PERCENT OF ALL NURSES, TODAY, WORK IN INSTITUTIONS: the proportion of private duty nurses dropped from well over half in 1936 to one third in 1941. One spurt was given to hospital employment by the eight-hour day which automatically increased the need for staff nurses by half. Another came from the growing number of people using hospitals, thanks to the three-cent-a-day hospitalization plan. Increase in rural hospitals—many of them community health centers—growing use of graduate nurses in tuberculosis sanatoria and in homes for the aged and for children, have also contributed to institutional demand exceeding qualified nurse supply.

As against the rewards of intensive care of a single patient, institutional nursing offers the satisfactions of the greatest service to the greatest number. It affords, too, opportunities for executing large scale projects. When vitamin therapy for pellagra was inaugurated in a southern hospital, a physician, a dietitian, and a nurse were integral parts of an experimental triumvirate. The doctor prescribed; the dietitian supervised preparation of the food; equally important, the nurse persuaded the patients to eat it. Materially, hospital jobs in contrast to private practice assure regular employment, vacations and sick leave with pay, and opportunities for advancement. In the hospital department of a large eastern city, for example, among every ten staff nurses earning \$900-\$1,600 a year with maintenance, one may become head nurse; one of every two head nurses becomes supervisor; one of every two supervisors, assistant superintendent of nurses; one of every three assistant superintendents, superintendent, at \$3,000 a year with maintenance. Finally, one of these superintendents of nurses is slated to become director of the organization, at \$5,000 a year. With some variations, similar opportunities and pay obtain for the country at large.

A Profession with Many Niches

MOST NEEDED OF ALL ARE NURSES QUALIFIED AS INSTRUCTORS and administrators in schools of nursing whose standards, despite the urgent need for their graduates, have been steadily rising. No longer are such schools merely a device for supplying hospitals with cheap help. Students today study for a profession, and do little glorified chamber work like making empty beds, carrying trays, and arranging flowers.

No longer is one student assigned to taking all the temperatures, another to giving all the sponge baths; class room and clinical work are interrelated, and nurses-in-training gain experience with patients, not procedures. No longer can "these gentle helpers," as an 1878 nursing textbook stated, be "guided by simple knowledge and simple rules." Present nursing techniques, like diet therapy, fever therapy for mental patients, after-care in heart surgery, and administration of intravenous injections require a background of biology, chemistry, and anatomy. Present nursing functions, especially in public health work, are based on knowledge of family and community relations gained through psychology and

sociology. Openings for nurses to teach natural and social sciences at the college level are numerous.

There are desk jobs available for nurses, too: serving with a state board of examiners to maintain nursing standards; acting as officer of a nurses' organization; being a nurses' vocational guide. And occasional odd jobs, like being hostess in a private home for mild mental patients; boarding children; being a boat, plane, or train nurse.

"Any good nurse," says Katharine Faville, R.N., director of the Henry Street Visiting Nurse Service in New York, and chairman of the National Committee on Recruitment of Student Nurses, "can practically name her own job." Salaries rate favorably with those in other professions for women that require comparable training. Many teaching, supervisory, and administrative positions in the institutional, nursing education, and public health fields pay from \$2,500-\$6,000 annually. A few pay more. College-trained nurses, during the first year of employment, have a median salary higher than any other group of college women. The profession has opportunities for travel: Children's Bureau consultants are on the road more than half the time; other government nurses serve in Alaska, Iceland, Hawaii, the Canal Zone, the Philippines, and Puerto Rico. For those who prefer to stay put, it offers stability: some Henry Street nurses who began with Lillian Wald in the 1900's still go their rounds in New York. A nurse has her choice of serving in a modern hospital with all the reinforcements of equipment and staff or of pioneering, possibly without a doctor, on an Indian reservation. For every temperament—academic, executive, pedagogical, adventurous, home loving—the profession has niches, many of them at the top.

But It's Not Just a Job

THERE IS, AMONG QUALIFICATIONS FOR NURSING, ONLY ONE essential common denominator. A nurse must, first and foremost, be a nurse; a teacher, administrator or organizer secondarily. I talked with two nurses, each in a key position: one, director of a governmental nursing service; the other, head of a nationally famous visiting nurse organization. Each spoke glowingly of her satisfaction in building up a staff, in stimulating the creation of far-flung nursing services; and each added, almost wistfully, "Though of course I miss the contact with patients." Earlier in the century, England tried sending out college women without nursing training to teach public health. The attempt was a failure. One young girl, frankly expressing her interest in organizational work, her disinterest in bedside care, was turned down by one good nursing school after another. Finally one consented to enroll her—within three months she was dropped as unsatisfactory for the profession of nursing.

Only young women with a sincere interest in caring for the sick should answer their government's call to enroll in a training school for nurses, and step on the first rung of the profession's ladder. After that, with a world of worn, battered, undernourished peoples; with a South America rapidly awakening to the need for governmental health services and modern nursing schools; with positions waiting in the United States and one fifth of our counties still having no department of public health, they can climb as high, and in whatever direction, they please.