HEALTH AND HYGIENE

MARCH 1937

FIFTEEN CENTS

A HEALTHY SEX LIFE

GROVE'S BROMO-QUININE

POOR FOOD and DRUG LAWS

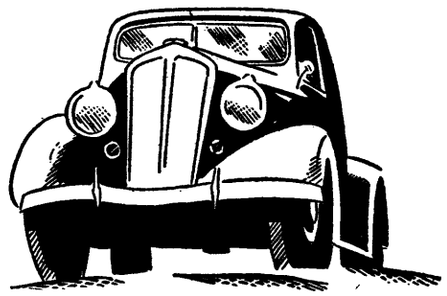
BY WILL MASLOW

STORY OF INDUSTRIAL DISEASE

BY DR. HENRY E. SIGERIST
JOHNS HOPKINS UNIVERSITY

One-hundred Doctors write for this magazine!

Ratings of 1937 Automobiles



DIVIDED into three price classifications under $1,000, over twenty-five leading models of 1937 automobiles are rated in the current March issue of *Consumers Union Reports*—some as "Best Buys," some as "Not Acceptable," and others as "Also Acceptable" in the estimated order of their merit. Based on such factors as economy, comparative safety of operation, general performance and other engineering features, these ratings were made by competent automotive engineers after thorough examinations and actual performance tests. Such features as hypoid gears, automatic choke, frame durability, driver-visibility, and others are discussed at length. Tables on comparative gas consumption are also given. This report—which should be read by everyone contemplating the purchase of a new car—will be followed in an early issue by ratings of cars in higher-priced groups. Previous issues of the REPORTS (still available) have analyzed and rated tires, gasolines, motor oils, and anti-freeze solutions.

Some of the Cars Rated in This Issue

Willys	Ford	Chrysler
Chevrolet	Buick	Dodge
Plymouth	Studebaker	DeSoto
Oldsmobile	Pontiac	Graham

OTHER REPORTS IN THIS ISSUE

RADIO SETS, FLOUR, SHEETS, CAN OPENERS, BAKED BEANS, CANNED ASPARAGUS AND CHERRIES

For $3 — A Group of Experienced Technicians Goes to Work for You

HOW can you, a consumer, know what you're getting when you go to market? The government knows what it's getting—because it conducts technical tests of the merchandise it buys. The manufacturer knows what he's getting—because he does the same with his raw materials. It hasn't been so easy for the consumer. Lacking the technical knowledge and the facilities required for testing products, he also lacks the funds to test even a fraction of the products he uses. **Now, however, the consumer can have merchandise tested for him—honestly, dependably, without bias, and at a very nominal cost**—by a nation-wide, technical organization set up and controlled by **consumers** interested in getting the most for their money.

The name of this organization is Consumers Union of United States, Inc. Formed on a strictly non-profit, membership basis under the laws of New York State, the purpose of this organization is to serve its members in the capacity of a consumers, testing laboratory by providing them with accurate and unbiased technical information about their everyday purchases. Close to 30,000 consumers throughout the United States are now members of Consumers Union.

To them every month goes **Consumers Union Reports**, a compact magazine, provocatively illustrated, written in straightforward language, and describing and rating tested products **by brand names** as "Best Buys," "Also Acceptable," or "Not Acceptable." Competent, **unbiased** technicians, either on the staff of Consumers Union or employed as consultants, working in university and other laboratories, make the analyses and determine the ratings by means of laboratory and other standard tests, the results of which are painstakingly checked and verified. Products reported on include most of the merchandise you have occasion to buy from day to day: shoes, toothpaste, radios, foods, drugs, cosmetics, vacuum cleaners, soaps, liquors, clothing, tires, oils, and many things besides. Notes are also included in the **Reports** on the labor conditions under which many of the products are manufactured, these notes, however, being entirely independent of the technical recommendations.

Consumers Union has no connection with any commercial interest. Its income is derived solely from membership fees and contributions and is used solely in the interests of its members. Many prominent scientists, educators, journalists, and labor leaders, including Heywood Broun, Francis Gorman, and Dr. Alvin Johnson, are among the sponsors and directors of Consumers Union. The membership fee (which confers voting irghts) is $3 a year. It includes twelve issues of the monthly **Reports** and a yearly Buying Guide (the 1937 edition of this Guide, running to nearly 200 pages, is now in preparation). An abridged edition of the **Reports**, covering only the less expensive products, is also available at $1 a year.

To become a member of Consumers Union, mail the application form below. Your membership will begin either with the current March issue or with any previous issue you may indicate. Listings of the principal subjects covered in past issues are given in the coupon below. (Note: **Consumers Union Reports** are not sold on newsstands and are available only through membership, subscription, or at the office of Consumers Union, 55 Vandam Street, New ork.)

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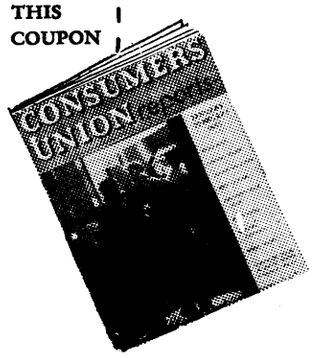

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Purely Personal

MORE AND MORE AMERICAN doctors are coming forward in aid of Spanish democracy in its struggle against fascism. The unit of the Medical Bureau of the American Friends of Spanish Democracy now in Spain is doing notable work, having set up a base hospital near the front. A second unit, consisting of a staff of doctors, nurses, and technicians, ten ambulance cars, an x-ray station, laboratory, surgical, and medical equipment is to sail shortly. To carry on its splendid work the Bureau needs funds and supplies. Contributions may be sent to the Medical Bureau A.F.S.D. at 20 Vesey Street, New York City. Doctors and pharmacists can help especially by donating medical supplies of all kinds. Further information by telephoning BArclay 7-3811.

THE RESPONSE TO OUR back-number offer far exceeded our expectations. Since the last issue went to press we have mailed out about 2,000 copies. We still have some left, though, and the special offer remains in effect as long as the supply lasts. For details see the last page of this issue.

JUDGING FROM the rapidity with which orders came in, a number of people must have felt the same way about it as Mrs. H. C. of Malden, Massachusetts, who wrote: "Enclosed find $1 for which please send me the eighteen numbers now available. I received my February copy five minutes ago."

Here's another example of quick work. A. H. of Detroit writes: "Enclosed find $8 for eight new subscriptions. These substriptions were obtained in about forty-five minutes."

Mrs. A. M., also of Detroit, sends us two new subscriptions and the following pat on the back: "I certainly get a lot of pleasure out of being able to find another subscriber, and one does not have to do much high pressure advertising at that, as the magazine sells itself."

OF COURSE, we don't want to give the idea that all the letters we re-

(*Turn to page 95*)

In This Issue

MARCH, 1937
VOLUME 5 NUMBER 3

Editors: CARL MALMBERG *and* JOHN STUART

HEALTH *and* **HYGIENE**

Magazine of the People's Health Education League

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Editorial:

War on Syphilis

The Press Is Aroused

AS a result of the recent National Conference on Venereal Disease Control and statements to the press by several prominent individuals, the prudish silence that has been maintained by newspapers and magazines regarding the subject of venereal infection has at last been broken. Editors no longer have to blue pencil the words *syphilis* and *gonorrhea*, and the public is consequently becoming more conscious of the facts concerning these diseases.

What are these facts? First, that the diseases are much more widespread than most people have imagined. Experts have estimated that from seven to ten out of every hundred persons are infected with syphilis. There are approximately seven million uncured victims of the disease in the United States, and each year half a million new sufferers are added to this astonishing number.

The second fact that stands out is the appalling indifference and apathy which has prevailed in the face of such a major problem. There are eighty-three accredited medical schools in the United States, but only ten of them have adequate departments for the study of the treatment of syphilis. Of the rest only twenty-five have even moderate facilities for study. The organized medical profession has again, in this instance, shown itself to be reluctant in coming forth in support of a real public health measure.

Syphilis and gonorrhea are two of the very few diseases for which both a preventive and a cure are known. With a proper application of our knowledge of the prevention and cure of these diseases, there is not the slightest doubt that they could be practically eradicated. Denmark has already pointed the way for us in this respect.

More Than Education Needed

BRINGING the fight into the open as the newspapers and magazines have recently done, will aid considerably in attacking the problem. However, publicity, frankness, and open-mindedness alone will not be sufficient. Already, those who fear the "hand of government" in medicine are raising the cry that the battle must be waged by local agencies. Actually, reliance upon local agencies in this fight will be equivalent to sabotage of any program that may be laid down.

What is needed is a large federal appropriation for the establishment of well-equipped venereal clinics throughout the country. In such clinics the doctors should be well paid and the service should be free to anyone who needs it. Many well-intentioned individuals have stated the necessity of providing "easy access to information concerning proper treatment." We do not wish to minimize the importance of enlightenment in this respect, but it is a fact that unless those who are diseased can have access *to the treatment itself*, little good can be done. And it is obvious that the economic condition of the vast majority of patients makes it impossible for them to pay for the very prolonged treatment that syphilis requires. Because of the cost of this prolonged treatment, very many syphilis patients stop visiting the doctor or clinic as soon as the primary and more obvious symptoms of the disease have disappeared. The disappearance of these symptoms, however, does not mean that the patient is cured or that he cannot spread the disease to others. Free treatment is the only way of assuring that medical attention is received until it is no longer needed.

Finally, before we can make real headway in the fight against venereal disease we will have to wipe out large-scale prostitution. This will be accomplished only when society can offer every woman an opportunity to make a living in a useful and profitable way.

SMALLPOX-STILL WITH US

The disease which once killed millions is now held in check by public health officials and vaccination. Ignorance and bigotry prevent universal vaccination, which would wipe it out entirely.

DANSVILLE, New York, January 16 (*AP*).—*Dr. Ernest L. Stebbins, district health officer, reported thirteen new cases of smallpox today in an extended outbreak of the disease that claimed its first victim, twenty-three-day-old William Jerome.*

The infant died yesterday, Dr. Stebbins said. Most of the new cases, he explained, were in homes already quarantined. More than 3,000 *persons have been vaccinated, he estimated.*

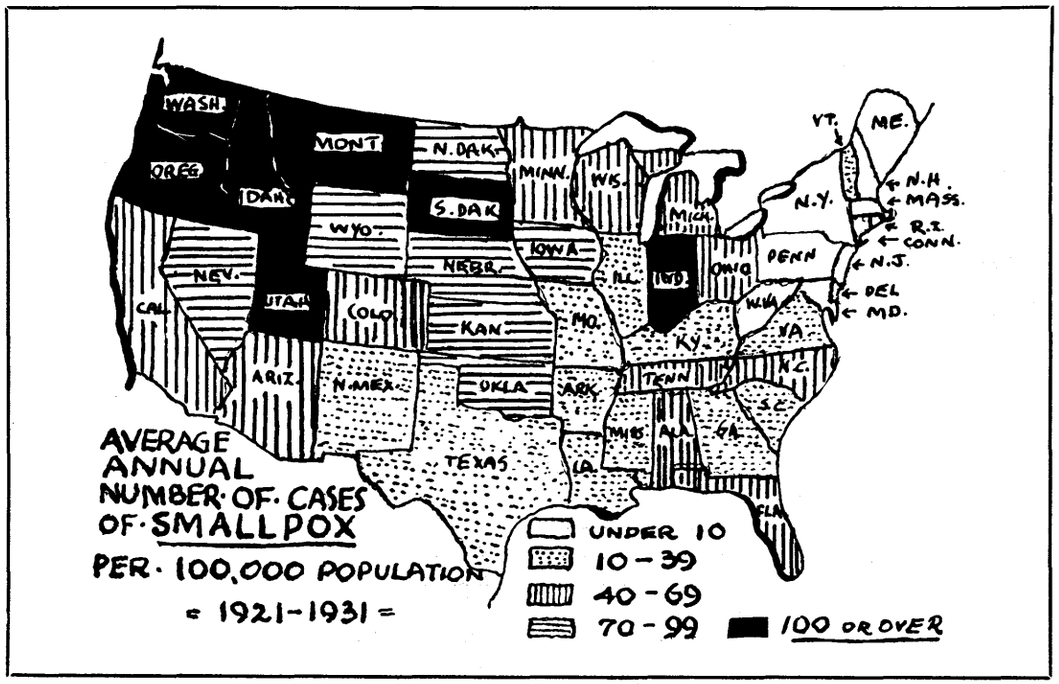
Buenos Aires, January 11 (*UP*).—*Mass vaccination of more than* 1,000,000 *persons in Argentina and Uraguay was reported today by health authorities.*

Facing the threat of a smallpox epidemic, the government decreed anyone wishing to do official business had to produce a vaccination certificate. Travelers also needed certificates to pass. Those who did not voluntarily seek vaccination were isolated.

Memphis, Tennessee, January 30 (*AP*)—*Red-eyed doctors and nurses worked on without sleep to prevent an epidemic among the homeless flood victims crowded into nearly every available building in the city. . . . There were at least 500 persons, chiefly from Arkansas, in hospital beds, suffering from influenza, pneumonia, smallpox, and typhoid.*

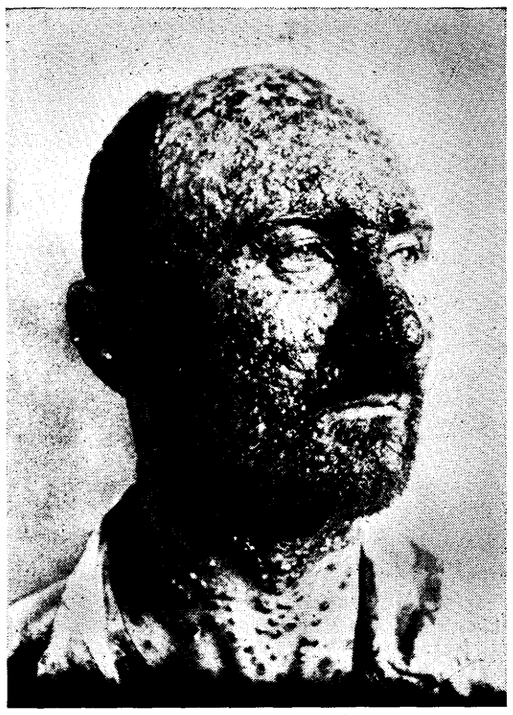
Smallpox again "makes" the news, not on the front pages with the Duke of Windsor's latest skiing trip or Princess Juliana's honeymoon, but far in the inside, tucked away in an

How successfully the states control smallpox (after Hedrich)



obscure corner. Yet, our happiness and even our lives depend on the efficiency with which our health agencies work and the degree of publicity which such epidemics receive. Many people dismiss smallpox as a disease with which our fathers fell sick and from which our forefathers died, without thinking that it is only the vigilance of health officers which spares us a similar fate.

Formerly, when smallpox broke out in a community, almost all of the inhabitants fell ill and many died. It is estimated that 60,000,000 died of smallpox in the eighteenth century. At that time isolation (keeping the people of one community from coming in contact with those of another) was easily accomplished. Today the automobile, steamship, train, and airplane are constantly keeping populations in motion, and isolation of an area is usually achieved only after some infected persons have already moved on. Other factors also influence the movement of large numbers of people; increasing industrial activity brings people to the city, while an industrial depression sends them to the country. The city is also a transfer point through which people are constantly passing. In Chicago, it is estimated such transients may number as many as 150,000, or over ten per cent of all the males of that city of working age.



Courtesy of Lea & Febiger

Vaccination would have protected this smallpox victim.

In January, 1924, two tramps and a boy became infected with smallpox in Winnipeg, Canada. They carried the disease to Duluth, Minnesota, Detroit, Michigan, and New Britain, Connecticut. As a result, over 7,400 people came down with smallpox and of these 1,270 died!

WHAT is this disease which we seek to conquer and which we regard with dread and horror? It is an acute, very contagious disease characterized by an extensive eruption on the skin and on all exposed membranes (eyes, mouth, nose, and so forth). First there are numerous small swelling which become blisters, then turn into pustules (blisters with pus), and finally dry and crust over. The disease becomes active within two weeks after it is "caught" by the patient. There are two kinds of smallpox, a virulent (very severe) type which kills within two days, and the milder type which may be fatal. Usually, the greater the skin eruption the more severe the disease. Those who recover may be left scarred and disfigured, blind, or disabled for life.

We do not know how smallpox is spread, but it is known that direct personal contact is usually responsible, and that the infection enters the body through the mouth and nose. The cause of the disease is a virus, a substance too small to be seen even under the most powerful microscope and minute enough to pass through the finest filters. The virus is present in the skin eruptions as well as the mucus of the nose and saliva of the mouth. As a result, drinking and eating utensils which have been handled by infected persons carry the virus and spread the disease.

How is the disease recognized? Probably most doctors in the United States have never seen a case of smallpox, and this fact complicates the problem. The recent use of a blood test basically similar to the Wassermann test for syphilis, promises to be of help, as does a test made with suspected material on the eyes of rabbits. An eruption, together with marked depression or prostration, should be regarded as suspicious, especially when the eruptions turn to blisters. The case may only be one of chickenpox, but smallpox should be ruled out only by a health officer, especially if the patient is an adult.

A contemporary cartoon satirizing Dr. Jenner and the practice of vaccination

Smallpox is best fought not when it appears, but before it appears. The prevention of disease (prophylaxis) is both better and cheaper in the long run. We are now guarded against smallpox by vaccination, while formerly it was necessary to have the disease, with its risks, in order to acquire immunity and protection. The story of vaccination is worth re-telling.

IT WAS long known to the farmers in England that anyone who had cowpox (a disease of cows closely related to smallpox) was protected against smallpox. When William Jenner was a medical student, he was greatly impressed when he heard a milkmaid say, "I cannot take smallpox because I had cowpox."

Although some farmers had given their children vaccine material from a cow with cowpox, it was Jenner who established the practice on a scientific basis. On May 14, 1796, he performed the first of the determining experiments. From the hand of Sarah Nelms, a dairy-maid, whose name deserves to be remembered, he took some vaccine material. She had scratched her hand with a thorn and infected herself with cowpox from one of her master's cows. Jenner then transferred the material he had taken from the milkmaid to an eight-year-old boy, James Phipps, who soon showed a typical cowpox eruption. On July 1, the boy was inoculated or infected with pus from a case of smallpox. Several months later, James Phipps was inoculated with smallpox again, but he remained free of the disease. The method of vaccination, as Jenner called it, from "vacca" the Latin word for cow, was successful.

Jenner offered a paper containing the story of vaccination to the Royal Society in London, but it was refused. In 1798, therefore, he published his work in a small book. The book is a model of scientific investigation and thought. The method became widely known and soon it was used in other countries. Dr. Benjamin Waterhouse of the Harvard Medical School obtained some vaccine material and on July 8, 1800, vaccinated his five-year-old son. He re-

peated Jenner's experiment by inoculating the child with smallpox pus, but the boy remained well. The number of people who submitted to be vaccinated grew rapidly, in spite of great opposition from religious and medical conservatives. Thomas Jefferson, one of America's greatest political philosophers and educators, did much to spread Jenner's good work. In 1806, he wrote to Jenner: "Future nations will know by history only that the loathsome smallpox has existed and by you has been extirpated." A good prophecy not yet completely realized! We may justly ask why.

People have been lulled into a false sense of security because the disease has been checked by the good work done years ago. Various religious groups have fought and are still fighting vaccination for reasons that only their own fanaticism can justify. Science has pointed out the way to rid the world of smallpox, but we are still constantly threatened by epidemics, not only of the mild but often of the deadly type.

Careful study shows that during epidemics, it is usually only the people who were never vaccinated or who were vaccinated only in childhood, who fall ill. Those who die have usually never been vaccinated. Knowing this, it is recommended that children be vaccinated within the first six months of life, again on entering school, and every few years thereafter throughout life. It is only the first vaccination that may cause discomfort; the others are hardly noticeable. Yet, in spite of the proven benefits of vaccination, only ten states in the United States require one vaccination and none requires more than one. In New York City all children must attend school and none is admitted without vaccination. Six states leave the problem to local option or choice, while the rest ignore the subject. The smallpox problem and the question of vaccination are national in scope, and cannot be satisfactorily dealt with by state or local laws.

THE vaccination is usually and best performed on the arm. The size of the scar that results depends upon the original size of the vaccination. The degree of protection resulting from a large vaccination is greater than that from a smaller one, but it is better to have small vaccinations frequently repeated, since a small scar will not be prominent. This is a factor which is often considered in the vaccination of women and children.

After the skin is carefully cleaned, a small bloodless scratch about an eighth of an inch long is made on that part of the arm on which the vaccine virus (obtained from calves) has been placed. Excess vaccine is then wiped away. No tight dressing is needed. At the end of three days a "papule" (small red swelling) appears where the scratch was made. On about the sixth day the papule becomes a "vesicle" or blister, and by the ninth day it is a "pustule," *i.e.*, a blister with pus surrounded by a red area. At this time the glands in the armpit swell and become tender. This is most marked about the twelfth day, after which the symptoms subside. By the twentieth day the scab or crust that has formed drops off, leaving a small red scar which later becomes white.

The vaccination, when repeated, is called a secondary vaccination and is quite different from the first or primary vaccination. If the person has lost the protection or immunity of the first vaccination, the new vaccination acts like the first one. Those who are still protected by the first vaccination do not react strongly to the second one. A papule may appear and last a week or two, but that is all. Thus, repeated vaccinations not only show the degree of protection or immunity existing at any time, but they also increase the protection already present.

The efficacy of large scale vaccination can be demonstrated by reference to the Soviet Union. Russia under the Czars was a plague spot for smallpox. Today in the Soviet Union, where vaccination is compulsory, widespread vaccination campaigns have reduced smallpox almost to the vanishing point.

Mexico is still a danger spot. Its death rate from smallpox is among the highest in the world, although there are laws requiring vaccination. The country is slowly emerging from the shadows of foreign exploitation and the ignorance nurtured by long domination of the church and the native land-owners. Each year more people are vaccinated as they learn that vaccination is a health and life-saving measure and not a device of the devil to carry them off to hell. Vaccination is required of all visitors before they can enter Mexico.

Our own country will never be freed from the danger of smallpox until vaccination is made compulsory for every child and re-vaccination is encouraged at frequent intervals throughout life.

A HAPPY SEX LIFE

How frequently should a married couple have sexual relations? The factors that must be considered in answering this question which has occupied many writers.

HOW often should married couples have sexual relations? Regulations or suggestions as to the proper frequency of sexual relations have been made since the beginning of human history. Each society establishes its own regulations, sometimes formalized into religious laws, sometimes imposed by custom. These regulations have varied widely. Zoroaster, the founder of the Persian religion, advised sexual relations once every nine days. Various early Hindu authorities suggested from three to six times a month. Some of these took the weather into consideration, suggesting indulgence once a month during the hottest time of the year and as often as six times a month during the coolest seasons. Solon, the sage of Athens during the sixth century before Christ, also advised three times a month.

The early Christian Fathers had an apparently simple solution of the problem of the frequency of sex relations. They thought the proper answer to the question was "never." St. Augustine tolerated marriage if it was deliberately undertaken for the express purpose of having children. He condemned any intercourse between husband and wife unless it was definitely undertaken for the purpose of conception.

Many of the Christian Fathers have left us graphic accounts of struggles with their "baser" natures and their heroic attempts to banish sex from their lives. Jerome wrote:

"Oh, how many times, when in the desert, in that vast solitude which, burnt up by the heat of the sun, offers but a horrible dwelling to monks, I imagined myself among the delights of Rome! I was alone, for my soul was full of bitterness. My limbs were covered by a wretched sack and my skin was as black as an Ethiopian's. Every day I wept and groaned and if I was unwillingly overcome by sleep, my lean body lay on bare earth. I say nothing of my food and drink, for in the desert even invalids have no drink but cold water, and cooked food is regarded as a luxury. While I, who out of fear of hell had condemned myself to this prison, companion of scorpions and wild beasts, often seemed in my imagination among bands of girls. My face was pale with fasting and my mind within my frigid body was burning with desire; the fires of lust would still flare up in a body that already seemed dead."

It can readily be seen that these efforts to eliminate sex from his life absorbed much of Jerome's time and energy and that as a result the subject of sex assumed a great deal of importance for him.

JEROME has been dead a long time, but the views of his day still exert a powerful influence on our lives. As Dr. Frankwood E. Williams said:

"Conflicts of the individual in regard to sex . . . grow largely out of the moral teachings built up and fostered by the church and by present society. These teachings are based upon such physiological and psychological knowledge as was available to early Christians, hundreds of years ago—which is to say upon no knowledge at all, because no accurate knowledge of the physiology and psychology of sex existed at that time.

"Such scientific knowledge as we have, on the physiology and psychology of sex, has been developed in comparatively recent times. It is as absurd to attempt to build moral principles out of the knowledge of physiology and psychology of sex in the early Christian era, as it would be to try to build an automobile out of their knowledge of physics. Nevertheless, this is the situation in which we are at the present time.

"Not only is this situation absurd. It is also vicious since the individual conflicts that arise from the false teachings distract the attention of the individual from social and economic conditions where such attention belongs—to himself where it does not belong to any such extent. Conflicts over these false issues rob the individual of his self-respect and self-confidence, and fill him with anxiety and worry quite unnecessarily. These unnecessary con-

flicts cause him to become nervously ill in many instances: and in most, if not in all instances, they lower his social and intellectual effectiveness because of his inability to apply himself to more important affairs."

It has been explained in a number of previous articles in HEALTH AND HYGIENE how these early views that sex is sinful or filthy affect not only those who believe them, but all of us. Even those who regard themselves as emancipated from such views have generally been trained as children to react to sex as something disgusting. This attitude, implanted firmly in childhood, remains with us as an unconscious part of our personality long after we have adopted other conscious views. Furthermore, many attitudes toward sex represent a reaction from the childhood training, and thus are indirectly influenced by it. People in rebellion against the "sinfulness" of sex, often try to make of it a trivial thing without emotional richness. Others whose protest takes a different direction surround sex with a halo of sanctity and sweetness and make of it something fit for angels rather than for human beings.

The Mohammedan view, as given in the Koran, advises sexual relations once a week. Martin Luther, who led the Reformation, was more generous and recommended twice a week. It is said concerning Luther that he once stated that a person who indulged in sexual intercourse more than twice a week was a sinner, and that one who indulged less was a fool.

The Jewish Talmud differentiates between the needs of the different occupations. Rabbis and scholars are told to limit themselves to once a week, while workers are advised that twice a week is proper. Strong and healthy young men who do not have to work hard are permitted relations once a day except during and immediately following their wives' menstruation.

It is interesting to observe that most of these rules consider only the needs of the man. On the other hand, the Queen of Aragon decided that the correct frequency of sexual relations for married couples was six times a day.

ALL of these rules are based on a very crude view of sex—a view which considers the subject as though it were exactly comparable to the question of frequency of eating or moving the bowels. Almost all such rules are concerned primarily with the man. To Mohammed's credit, however, it should be stated that his rule of once a week was meant chiefly for the wife. If a man had more than one wife, it was his duty to have sexual relations once a week with each of them. However, this rule limited poor people to relations once a week, while the wealthy who could afford a number of wives were permitted greater indulgence.

Any attempt to lay down precise rules concerning sexual activity ignores the great variability of human beings. The sexual needs of human beings differ greatly. What is not enough activity for one is far too much for another. It would be as foolish for everyone to try to follow a set prescription as it would be for all people to wear the same size clothing. Any advice about sexual relations which does not fully take into account the differences between human beings is not worth considering. Men especially come to grief by trying to follow an unrealistic standard to which they think they should adhere. In such instances, there are often other feelings which the man is trying to satisfy by a display of sexual prowess—feelings which should be gratified in other ways. Sometimes a man will try to overcome a feeling of inferiority by sexual excess. In such cases an unfair burden is placed on the sexual impulse.

On the other hand, a feeling of guilt about sex may tend to inhibit the sexual impulse and prevent a satisfactory estimate of one's sexual needs. In this connection one must consider the fairly common misconception that the loss of semen means a loss of strength. Semen is made by the testicles and is stored in the tubes called the seminal vesicles which lead to the penis. Semen stored in the vesicles can no longer be used by the body for any purpose except ejaculation and insemination or fertilization of the female egg. It cannot be absorbed by the body as a source of strength. If it is not lost in the course of sexual relations, it will be discharged by masturbation, nocturnal emissions, or by slow passage out of the body in the urine. This does not mean that a man cannot exhaust himself by sexual excess. Such excess, however, will never arise out of actual sexual need, but only when the sexual impulse is forced to carry the burden of other, unrelated desires.

IDEALLY, sexual relations are a part of a larger relationship between the husband and wife. It is impossible to isolate sex from the rest of life. Sexual adjustment influences the other adjustments between man and wife, but, in the

(*Continued on page 94*)

HOW THE KIDNEYS WORK

Through these important organs are filtered several of the waste products of the body. A clear and understandable description of a physiological function with which few are familiar.

THE human body is made up of various systems, each adapted to a certain purpose or function. It is perhaps easiest to explain the essential workings of the organs in terms of their function. Thus, the neuromuscular system is concerned with the adaptation of the body to the external environment. The digestive system is concerned with the absorption of the necessary foodstuffs for continued life, growth, and repair of the tissues. By means of the circulatory system the proper environment for each individual body cell is maintained, nourishment is brought to the cells, and waste products removed.

The blood stream absorbs oxygen from the air in the lungs. The oxygen, which is necessary if the cells are to burn the food absorbed by the digestive system, is taken into the blood, and carbon dioxide, the "smoke" of the body fire, is given off.

The intestinal tract excretes bile pigments, bile salts formed in the liver, and certain other substances. The skin, chiefly through the sweat glands, gives off water and salts. But these means alone are not sufficient to accommodate the excretion of all the waste products which do not evaporate at body temperature and cannot be removed by the lungs. For this, the kidneys are necessary.

The kidneys are essentially filters which hold back all the necessary constituents of the blood stream, and permit only those substances which are harmful or of no use, or those of which the body has too much, to pass out in a watery solution. Certain useless substances (chiefly urea, uric acid, and other nitrogen-containing products which result from the breakdown of proteins) are excreted regardless of whether the blood contains a great deal or only a small amount of them. Thus, in diabetes, sugar is excreted in the urine because the body is unable to burn sugar and too much of it accumulates in the blood. If the acid-alkali balance of the blood is impaired, it is automatically corrected by the kidneys. This fact shows up the fakery of faddist and patent drug advertising concerning "acidosis." The kidneys keep the blood at a constant slightly alkaline level; if the blood ever became really acid, as this advertising implies, death would promptly ensue.

The essential unit of the kidney is called a "nephron" (see diagram A). There are several million nephrons in each kidney, and each one consists of a glomerulus and a tubule. The glomerulus in turn consists of several very twisted tiny blood vessels (capillaries) which are covered with a layer of very thin kidney cells. Surrounding these twisted blood vessels is a space where the urine collects. The urine passes down the tubule, which also winds about a great deal. The tubule is lined with a single layer of somewhat thicker cells which are surrounded by many small capillaries.

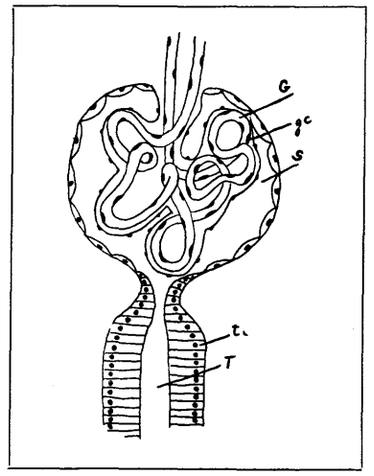


Diagram A—A kidney nephron. (G) glomerulus, (T) tubule, (S) space where urine collects, (gc) lining cells of glomerulus, (tc) lining cells of tubule.

WE do not yet know exactly how the nephron does its work. There are many theories concerning this, none of which is proven. But let us take the simplest theory and follow it through. Although incomplete in details, it will give us a simple and, on the whole, correct picture of how the kidneys work.

The blood enters the capillaries of the glomerulus. The pressure of the blood in the capillaries forces fluid out through the lining cells of the capillaries and into the tubule. All the substances of the blood which can pass out are forced through in definite quantities: mineral salts, sugar, and waste products such as urea. Only substances which canot pass through, such as the blood cells and the large protein

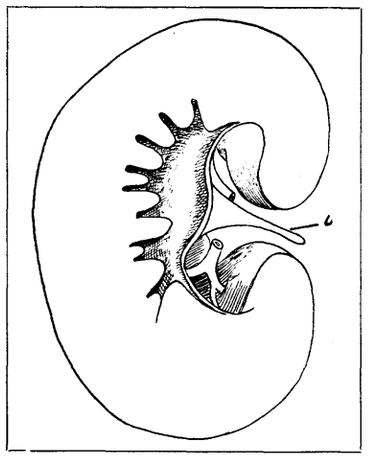


Diagram B—Cross section of a kidney. White space is section in which nephrons lie. Shaded part is the pelvis. (u) ureter.

molecules, are held back. As the urine passes down the tubule, the lining cells of the tubule reabsorb water and those substances which the body at the time may need, such as sugar and salts. The urine containing the waste products then passes out of the kidney into the kidney pelvis.

There are normally two kidneys, one on each side close to the spine in the lower part of the back. Attached to each is a small collecting basin, called the pelvis of the kidney, which drains into a long, narrow tube called the ureter (see diagram B). The two ureters empty into the bladder. The bladder is a muscular organ capable of considerable distension which is kept closed by a circular muscle (the sphincter) at its outlet. When the sphincter relaxes and the bladder muscle contracts, the urine is forced out through the urethra, or urinary canal.

The great majority of diseases of the lower urinary tract, i.e., the part from the pelvis of the kidney down, whether caused by malformations, infections, stones, tumors, or other causes, are best treated locally. The first principle in the treatment of these diseases is the establishment of free drainage of urine, for if the urine is dammed back its pressure sooner or later will destroy the kidney tissue. In addition, the stagnant urine is very likely to become infected.

WITH a few exceptions, notably abscess, tuberculosis, and tumors, diseases of the kidney itself call for general medical treatment rather than local treatment of the diseased part. They are not so much diseases of the kidney alone as of the body as a whole. The circulatory system, which is so intimately in contact with the kidney tissue, is always involved, and in many cases there is still a dispute as to whether the primary cause of the disease lies in the kidney or in the blood circulation.

In acute nephritis (kidney inflammation) there is inflammation of the glomerulus, with swelling and an increase in the number of both the kidney and blood vessel cells, which prevents blood from entering the glomerulus. There is also damage to the delicate membrane of the glomerulus which permits red blood cells and blood protein (albumin) to escape into the urine. At the same time, there is widespread injury to the tiny blood vessels all over the body, which permits the fluid that is unable to get out through the kidneys to collect in the tissue spaces and produce watery swelling, or edema. In the late stages of nephritis, the scarring which is a result of the inflammation throws so many glomeruli out of function that the remaining ones cannot take care of the body's demands. In certain intermediate stages of nephritis, so much albumin is lost in the urine that the body cannot keep up a normal supply. Massive edema results from this loss of albumin. The treatment consists in supplying a diet with very little salt, but with as much protein as possible to make up for what is lost in the urine. Thus, contrary to popular notions, this is one type of kidney disease in which the doctor orders large amounts of meat to be eaten.

(*Continued on page 96*)

Historical Backgroud of Industrial and Occupational Disease

By PROF. HENRY E. SIGERIST
Johns Hopkins University

An abridged version of the Wesley M. Carpenter lecture by the world's foremost authority on the history of medicine.

IT IS the destiny of man that he has to work to maintain his life. He has to produce and gather the food that his organism requires and has to produce goods to protect himself against the climate and to make his life easier and more enjoyable. The greatest advance in the history of human civilization was the step from the paleolithic to the neolithic age, from the food-gathering to the food-producing stage, when man had learned to cultivate plants, to domesticate animals, to perfect his tools. Man struggled with nature and he is conquering it gradually through his intelligence, inventiveness, and skill. The productive forces, animate and inanimate, active and passive, man and his raw material, the laborer and his tool, were the decisive factors in history.

Man has to work in order to live—and this is good. Work gives significance to our life. It ennobles it. It allows us to create material and spiritual values without which life would not be worth living. If society progressed, it was due to the cooperative efforts of all its members. Man has a duty to work but he should also have a right to work.

Work balances our life and is therefore an essential factor of health. Yet we all know that man in the pursuit of his work is exposed to all kinds of hazards which threaten his life. This has always been the case no matter what the work was. The stone age man gathering his food, hunting animals, was subject to accidents. Neolithic bones showing traces of fractures make this evident.

With developing civilization production increased. New occupations created new hazards. The working conditions of a definite period and country represent an important criterion of a given civilization. When we look at the history of civilization from this point of view, we certainly have no reason to be proud of our past.

We are inclined to value a civilization according to its artistic achievements. We admire the pyramids and the temples of ancient Egypt which have survived the centuries and millenniums but we forget that they were built with the blood and tears of thousands of human beings. Labor in ancient civilization was primarily slave labor. The pyramids were built by state slaves whose lives had no value whatever, whom every war would replace. We still can see the Egyptian workers laboring under the whip as represented on wall paintings and in reliefs. The lot of the city workers was hardly any better and we can still perceive their voice of rebellion. Egyptian literature has preserved, besides a huge mass of religious texts written in praise of the gods, a few scraps which tell us of the hard life of the people.

I have never seen a blacksmith acting as ambassador or a foundry worker sent on a mission, but what I have seen is the metal worker at his work: he is grilled at the mouth of the furnace. The mason, exposed to all weathers and all risks, builds without clothing. His arms are worn out with work, his food is mixed up with dirt and rubbish: he bites his nails, for he has no other food. The barber breaks his arm to fill his stomach. The weaver engaged in home work is worse off in the house than the women; doubled up with his knees drawn up to his stomach, he cannot breathe. The laundryman on the quays is the neighbor of crocodiles. The dyeworker stinks of fish spawn: his eyes are tired, his hand works unceasingly and as he spends his time in cutting up rags he has a horror of clothing.

WE admire the graceful Greek bronze statuettes that fill our museums but we do not think of the copper miners providing

material for these works of art, or the coal miners digging for coal to make the bronze, working ten hours in narrow galleries suffocated by heat and smoke. They were prisoners of war or convicts as a rule.

The ancient physicians, keen observers as they were, noticed the influence of certain occupations on the worker's health. A good deal of information is scattered all over the Greek and Roman literature. But nothing was done to protect the workers. They had to help themselves as the minium refiners described by Pliny did who put membranes as a mask before their faces. Medical care was given to those who served to entertain the people, the gladiators. Galen started his career by being physician to a gladiator's school in Pergamon.

The ancient physicians were not actually interested in the health of the manual laborers. They devoted their attention almost exclusively to the upper class. It would never have occurred to them to prescribe any definite hygiene to craftsmen or workers.

We must not forget, however, that ancient technology was mostly small scale technology. The artisans frequently worked in the open air, as they still do in the Orient, so that the hazards were infinitely less than in later centuries after technology had assumed larger proportions.

Ancient civilization created great cultural values but it was a culture that was shared by only a small upper class and endless human lives had to be sacrificed and a great deal of suffering had to be endured to allow this culture to flourish.

The Middle Ages scarcely made any contributions to the subject and it is not before the end of the fifteenth century that we begin to find a special literature devoted to occupational diseases.

WHY then? For various reasons. Medicine had progressed and the physicians were keenly interested in describing new diseases. But there are other, economic reasons. The volume of trade had increased considerably which created a great demand for metals, particularly gold and silver for currency as a medium of exchange. The voyages of discovery were undertaken not so much in the interest of science as primarily in search of precious metals. Besides, fire arms were used more and more frequently which created a strong demand for iron, copper, and lead. The shallow mineral deposits were exhausted and it was necessary to dig deeper which obviously created increased hazards. At the same time in many countries the farmers were evicted, were divorced from the means of production and became proletarians who had nothing to sell but their labor powers. Many of them went into industry.

In 1473 a German physician in Augsburg, Ulrich Ellenbog, wrote a little pamphlet of seven small printed pages: *On the poisonous wicked fumes and smokes*. Augsburg at that time was famous for its goldsmiths. Ellenbog, who apparently had such goldsmiths among his patients, noticed that some of their troubles were probably due to their working conditions. He wrote his pamphlet as a memorandum describing the dangers of fumes that developed from coal, nitric acid, lead, mercury and other metals. He advised the goldsmiths to work, whenever possible, in the open air, to cover their mouths when fumes developed, and, in the style of the time, recommended a number of drugs to be smelled as a measure of protection.

Ellenbog's was just a short memorandum. The first monograph devoted to occupational diseases is due to Paracelsus who, greatly interested in chemistry, visited many mines. He lived and worked with the miners and got first-hand evidence of the appalling conditions under which they were laboring and the very serious hazards to which they were exposed.

Paracelsus' monograph is a beginning. Every writer on mining after that time never failed to touch the diseases peculiar to this industry. A very good example of this type of literature is Agricola's work *On Metals*, published in 1556. In Book VI he says,

> It remains for me to speak of the ailments and accidents of miners, and of the methods by which they can guard against these, for we should always devote more care to maintaining our health, that we may freely perform our bodily functions, than to making profits. Of the illnesses, some affect the joints, some the eyes, and finally some are fatal to men.

He then goes on describing the various hazards that threaten the miners, the abundant water often collecting in shafts making them cold and, in this way, injuring the workers; the dust that "has corrosive qualities and eats away the lungs, and implants consumption in the body; hence in the mines of the Carpathian Mountains women are found who have married seven husbands, all of whom this terrible consumption has carried off by a premature death." Stagnant air produces a difficulty in

It is only comparatively recently that the health of working people has received any attention either by employers or the state. This old drawing shows the conditions of child labor in a 19th century English factory.

breathing. The remedy is to be found in the ventilating machines. Or, the air is infected with poison, causing swellings and paralysis. Accidents are described as being not rare, workmen slipping from ladders in the shafts, breaking their arms, legs or necks, or falling into the sumps and being drowned. Mountain slides occurred as was the case in Rammelsberg where in one day "400 women were robbed of their husbands." Venomous ants were found in several mines. And finally there was one hazard that we no longer know. "In some of our mines, though in very few, there are pernicious pests. These are demons of ferocious aspect . . . demons of this kind are expelled and put to flight by prayer and fasting."

THERE is no doubt that mining was the most dangerous of all occupations and therefore was given attention first. In the seventeenth century books began to be written on the diseases of other occupational groups. They concern less the working class than the upper class, the courtiers, the scholars, men of letters in general, but then also soldiers and sailors because the fighting strength of an army or navy was determined to quite an extent by the health conditions.

And then, in 1700, the Italian physician Bernardino Ramazzini published his famous book: *A treatise of the diseases of tradesmen, shewing the various influence of particular trades upon the state of health; with the best methods to avoid or correct it, and useful hints proper to be minded in regulating the cure of all diseases incident to tradesmen*—the first textbook on occupational diseases. I have just re-read it. It is a fine book, a real medical classic.

Ramazzini was a distinguished physician in Modena, professor at the University of this city and in 1700, the year his book was published, he was called to the University of Padua. Discussing the diseases of "Cleaners of Jakes" (privy cleaners), he tells us how he became interested in his subject.

> The Accident, from which I took occasion to write this Treatise of the Diseases of Tradesmen is as follows. In this City, which is very populous for its Bigness, and is built both close and high, it is usual to have their Houses of Office cleansed every third Year; and, while the Men employed in this Work were cleansing that at my House, I took notice of one of them, who worked with a

great deal of Anxiety and Eagerness, and, being moved with Compassion, I asked the poor Fellow, Why he did not work more calmly and avoid overtiring himself with too much Straining? Upon this the poor Wretch lifted up his Eyes from the dismal Vault, and replied, That none but those who have tried it could imagine the Trouble of staying above four Hours in that Place, it being equally troublesome as to be struck blind. After he came out of the Place, I took a narrow View of his Eyes, and found them very red and dim; upon which I asked him, If they had any usual Remedy for that Disorder? He replied, their only Way was to run immediately Home, and confine themselves for a Day to a dark Room, and wash their Eyes now and then with warm Water; by which Means they used to find their Pain somewhat assuaged . . . Immediately after he clapt his Hands over his Eyes, and run Home. After this I took notice of several Beggars in the City, who having been imployed in that Work, were either very weak-sighted, or absolutely blind.

Ramazzini gave the medical world a text book outlining a new subject. His distinction of two great groups of occupational diseases, one due to the material and one due to the labor involved, was very good indeed and was accepted by most physicians who in the following years wrote on the subject. Ramazzini's book was a mine of information often consulted during the eighteenth and early nineteenth centuries. As a matter of fact the eighteenth century had very little to add to what Ramazzini had said.

THE physicians knew how to prevent many such accidents and yet, hardly anything was done to protect the workers during the eighteenth century. They had to protect themselves as well as they could. At the same time, however, the industrialization of Europe progressed faster than ever before. The steam engine introduced in the textile and mining industry accelerated the development, created different working conditions, and, at the same time, new hazards. Mechanical forces of high potency were brought close to man, threatening his life. In the early nineteenth century, beginning in England, the industrial population increased tremendously and was living and working under appalling hygienic conditions. The death rate was high and the duration of life exceedingly short. Public opinion was aroused by the report of a committee of investigation in Manchester in 1795. The ruling class recognized that a sick proletariat was a menace to its own health. Another report on "The sanitary conditions of the laboring population," published in 1838, revealed that the condition had not improved but, on the contrary, had become even worse. A very fine little book published in 1832 by a physician in Leeds, C. Turner Thackrah, on *The effects of arts, trades, and professions, and of civic states and habits of living, on health and longevity*, revealed striking figures. In the industrial city of Leeds in 1821 there was one death per 55 inhabitants, while in a neighboring rural district there was one death per 74 inhabitants. "At least 450 persons therefore die annually in the borough of Leeds from the injurious effects of manufactories, the crowded state of population and the consequences of bad habits of life," was the conclusion of Thackrah who then proceeds,

> Everyday we see sacrificed to the artificial state of society one and sometimes two victims, whom the destinies of nature would have spared. The destruction of 450 persons year by year in the borough of Leeds cannot be considered by any benevolent mind as an insignificant affair. Still less can the impaired health, the lingering ailments, the premature decay, mental and corporeal, of nine-tenths of the survivors, be a subject of indifference . . . If we should suppose that 50,000 persons die annually in Great Britain from the effects of manufactures, civic states, and the intemperance connected with these states and occupations, our estimate I am convinced would be considerably below the truth. Can we view with apathy such a superfluous mortality, such a waste of human life?

Thackrah wrote his courageous book "to excite the public attention to the subject." He was well aware that the upper class did not like to have this subject discussed but he was convinced that conditions could be, and must be, improved.

> Most persons, who reflect on the subject, will be inclined to admit that our employments are in a considerable degree injurious to health, but they believe, or profess to believe, that the evils cannot be counteracted, and urge that an investigation of such evils can produce only pain and discontent. From a reference to fact and observation I reply, that in many of our occupations, the injurious agents might be immediately removed or diminished. Evils are suffered to exist, even where the means of correction are known and easily applied. . . . But even where no adequate remedy immediately presents itself, observation and discussion will rarely fail to find one.

THE work of the physicians was important but it was obvious that conditions could only be improved by way of legislation. The first Factory Act "The Health and Morals Apprentices' Act" was passed in 1802 and was followed in the ensuing years by other acts removing some of the worst abuses, particularly in the exploitation of women and children. In spite of them conditions were still bad enough.

In France it was the report of the Prefect of Police, Dubois, of 1807 that revealed the terrifying health conditions of the industrial population. The physicians were not idle in France either. The relationship between death-rate and wages was clearly seen by Villermé who, later, in 1840 published very interesting statistics. What should be done? Patissier suggested the following. First, dangerous trades should be entirely forbidden or, if this proves impossible, only criminals sentenced to death and pardoned to hard labor should be allowed to work in such trades. Second, research should be done so as to improve the working conditions by applying measures of industrial hygiene. Third, the states should have public baths easily available to the workers. Fourth, workers injured through their labor should be compensated and should have old-age insurance.

Germany was industrialized much later than England or France and it is characteristic that it was the report of a recruiting officer that drew the attention of the public to the health conditions in the working population. Travelling in the Rhine region he found the health conditions such that the army would soon be deprived of recruits. The North German Union in 1869 in its Industrial Code stated that "every manufacturer must at its own cost establish all necessary appliances for safeguarding its employees against dangers to health and life." Social insurance was inaugurated in Germany in 1883 and as it included accidents and diseases, provisions were made to give medical service to the working population.

IN THE United States the literature on occupational diseases began in 1837 with a dissertation *On the influence of trades, professions and occupations* written at the instigation of the New York Medical Society. Factory legislation followed from the middle of the century on and developed rather slowly.

It is not until the twentieth century that there was a real improvement in working conditions. The World War proved to be a strong stimulus. Workers were scarce. Their health, therefore, meant a great deal. Research was done, chairs for industrial hygiene were established in quite a few universities, industrial clinics were opened, the first in 1910 in New York and Milan, museums were established in various countries showing the sources of industrial hazards and the way to prevent them. The most important improvements were due to legislative acts, their principles being the same in all countries: medical inspection of industrial undertakings, compulsory reporting of industrial diseases and compensation of the diseased and disabled workers. In 1906, revising the Workman's Compensation Act of 1897, England included 31 industrial diseases. This act had a great influence upon the United States.

It is obvious that the Soviet Union would pay great attention to industrial diseases and accidents. Research institutes have been created all over the Union and the health of the working population is being improved not only through measures of industrial hygiene but also through the reduction of working hours, the organization of rest and recreation, and a system of socialized medicine that makes medical care available to all.

There can be no doubt that the working conditions have greatly improved in almost all civilized countries and yet, you know as well as I, that what has been achieved so far is just a beginning. In a highly industrialized society where the machine is no longer restricted to the workshop but has invaded the streets, the hazards will always be great. To reduce them to a minimum is only possible through the cooperative efforts of physician, engineer, statesman, and educator.

Workmen's Compensation — Where the Money Goes

Out of every dollar collected in premiums by the American companies who write workmen's compensation insurance, 42 cents goes to the insurance company, 38 cents is paid in cash to the injured workers, and 20 cents goes to doctors and hospitals. In European countries the per capita overhead cost of the more complete protection afforded by state administered health insurance is from 3½ to 15½ cents out of every dollar collected.

POOR FOOD AND DRUG LAWS

(Above) A few advertisements of fake remedies taken from a popular magazine.

A miserably inadequate law more than thirty years old is the only protection the public has today. An authority tells what a good law would be like.

By WILL MASLOW

IN June, 1933, there was introduced in the Senate a pure food and drug bill known as the Tugwell bill. Dr. Rexford Tugwell, then Under-Secretary of Agriculture, was soon denounced as a Bolshevik and his bill described as an effort to undermine the established institutions of this country. Senator Copeland, who introduced the measure, quickly announced that the bill was no brain child of his and abandoned it. There followed three years of bill drafting, congressional hearings, and behind-the-scenes lobbying out of which emerged "Senate 5," the so-called Copeland bill.

The food, drug, and cosmetic industries, with but little exception, lined up solidly behind the bill, every other sentence of which bore their imprint. The press, magazines, and radio were also satisfied that Senator Copeland's bill would not interfere with the constitutional right to hawk worthless nostrums over the air or through the printed page. Unfortunately for the interests concerned, the bill died in the turmoil of the closing days of the last session of Congress. Dr. Harvey Wiley's antiquated measure of 1906 is still the law of the land.

Senator Copeland and the pain and beauty boys, however, have not abandoned the fight. Secret conferences of the trade groups affected, initiated by the *Drug World* (published by that great friend of the consumer, William Randolph Hearst) have been reported in trade journals. Senator Copeland has already reintroduced his bill, which is still known as S5 and which is favored by every industry it seeks to regulate.

A drug and cosmetic law worthy of the name should, I submit, provide at least for the following:

1. Licensing of manufacturers.
2. Registration of proprietary products.
3. Informative labeling.
4. Prevention of false or misleading advertising.
5. Facility in enforcement and administration.
6. An adequate budget.
7. Health education, publicity and scientific research.*

Measured against this ideal the present Copeland bill is but a sop to the growing interest in consumer protection. It is vitally deficient in every respect. Let us consider in detail what sound consumer legislation should provide.

1. Licensing of Manufacturers

Before the State authorizes physicians or pharmacists to give medical advice or compound drugs, it insists on severe prerequisites of education, training, and governmental regulation. No such controls are required of medicine manufacturers. Anyone may buy chemicals, mix them in his bathtub, sell his nostrums by making reckless curative claims to persons suffering from incurable diseases, maim hundreds, and continue in business unmolested. When and if the state finally catches up with him, all he faces is a small fine or an innocuous "cease and desist" order.

Patent medicine makers are prescribing for disease; cosmetic manufacturers are dealing with potentially harmful ingredients. Both classes should be licensed, but a license should be granted only if the licensee has trained personnel and adequate equipment. The Copeland bill provides for no licensing of drug or cosmetic manufacturers.

2. Registration of Proprietary Products

Licensing of manufacturers is but one aspect of control. Coupled with it should be a requirement for registration. Drugs and cosmetics should not be permitted to be sold until they have been registered, analyzed, and approved by competent scientists in a Food and Drug Administration. Registration should be denied or cancelled when proprietary products are dangerous or worthless or falsely advertised. Registration, of course, is the logical

* Because the problem of food legislation is so different from that of drugs and cosmetics, the question of adequate food control will be treated in a later article.

legal device for simplifying the task of prohibiting the sale of harmful, useless, or falsely advertised products. It is by no means an untried or radical administrative device. New York State insists that animal feeds be registered, and Canada's registration law is a model statute.

The Copeland bill recognizes this principle by requiring artificial coal tar colors to be certified, but illogically exacts no registration for poisonous drugs. Without registration it is almost impossible to police a billion-dollar industry, trade catalogues of which contain at least 100,000 different items. Registration would prevent the sale of poisons; there would be no need to wait until damage had been done before the law could be stirred to action.

3. Informative Labeling

The labels of drugs and cosmetics should tell buyers exactly what they are buying and warn them against possible dangers. The Copeland bill takes only a faltering step in this direction. It requires proprietary medicines to disclose the names (but not the amounts) of the active ingredients, but it contains no such requirement for cosmetics despite the wide sale of "turtle oils" and "Egyptian formulae" in five dollar jars. Instead of empowering a Food and Drug Administration to prescribe the necessary warnings for dangerous drugs (as the early draft of the bill originally did, and as the companion bill in the House, H.R.300, now does) it merely requires "adequate" warnings, and then not for cosmetics. The difference between the two methods is the difference between success and failure in enforcement. Instead of a nationwide instantaneous administrative determination of what labels must or must not contain, the government will find it necessary to initiate hundreds of criminal prosecutions, and will be forced to summon experts before juries innocent of scientific knowledge. Furthermore, a successful conviction in one case will not serve as a precedent in another. And why are warnings not required for cosmetics? It is not because the dangers are less remote, as women who have been injured by mercury face lotions, sulphide depilatories, or poisonous hair dyes can testify.

The original Tugwell bill required that medicines which were not cures but only pain relievers must so state on their labels. Such information would save consumers millions of dollars annually, but it would put a terrific dent in the sale of headache remedies and cold preparations. This provision, however, is not in the Copeland bill.

4. Prevention of False Advertising

The Copeland bill forbids false or misleading advertisement, but a law is not enforced by merely placing it on the statute books. Nor is compliance enforced by the threat of injunction proceedings. The easiest way to prevent false advertising is to cancel the registration of a falsely advertised product. The readiness to use this administrative sanction would prevent more fraud than a thousand injunctions. Even in the absence of a requirement for registration, other administrative devices might have been utilized. One of the most vicious abuses in the patent medicine field is the sale of nostrums for such dangerous or incurable ailments as diabetes or cancer. In Canada, *any* advertisement dealing with the treatment of the thirty-four serious ailments listed in the Canadian statute is automatically branded as false and is therefore prohibited. The original Copeland bill contained a list of forty-two diseases in which advertisement was restricted. When the lobbyists had finished their mutilation, the list was cut to five and only claims for *curative* effects were outlawed. In other words, charlatans may still advertise palliatives for cancer or infantile paralysis. Panacea peddlers should be barred from rushing in where doctors fear to tread.

Another administrative device to prevent fraud is to empower the regulatory agency to prescribe minimum standards of potency for antiseptics. Misleading claims of germ-destroying power based on test-tube experiments which by no means duplicate actual conditions of use would thus be barred, and the American mouth-wash habit severely crimped. The Copeland bill describes no standards of potency for antiseptics.

5. Facility in Enforcement and Administration

No law is worth enacting unless it can be enforced. Any drug and cosmetic legislation which lacks the requirement of registration will be difficult if not impossible to enforce. Even without registration, the Copeland bill throws obstacles in the way of the enforcing officers and takes the sting out of its sanctions.

The Food and Drug Administration of the United States Department of Agriculture has two enforcement weapons at its disposal. It can prosecute criminally a violator of the law, or it can embargo products shipped in interstate commerce which violate the law. Products cannot be embargoed until a court order is signed nor can they be destroyed until a trial has been held. But when an order of seizure is signed, goods described in the order may be seized all over the country. This provision for "multiple seizure" has been an effective weapon in the hands of the Food and Drug Administration for thirty years. Is it any wonder, therefore, that the first task of Senator Copeland and his allies engaged in the crusade to modernize the Wiley Act of 1906 was to prevent multiple seizures because of misbranding unless the product was "dangerous to health" or materially false.

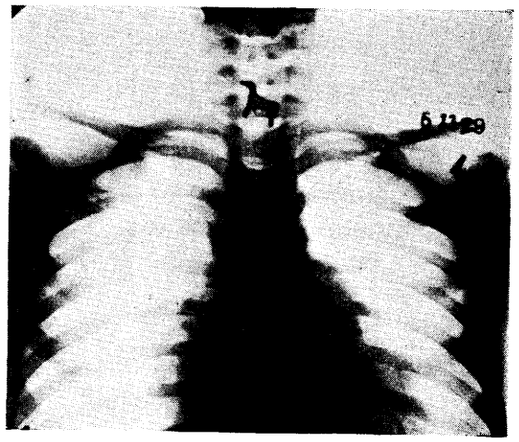
We may ask why, in an age when goods are sold by advertising appeals and not by their labels, multiple seizure should be allowed only for false labels and not for false advertisement? The answer is that manufacturers will not find it difficult to keep their labels impeccable as long as they can continue to use the printed page in publicizing their phony claims.

The other enforcement weapon, the right of criminal prosecution, has not proved effective in the past, and it promises no better results in the future. Up to January 1, 1936, only two prison sentences had been imposed, while the average fine, according to the latest figures available, was $67, a sum which reveals a scandalous judicial leniency. Our federal courts will not lose overnight their veneration for property rights or treat million-dollar corporations as criminals. The Food and Drug Administration has itself pointed out that feeble penalties imposed by these courts are regarded by many manufacturers as "a license fee for doing an illegitimate business."

In addition to the sanctions implicit in licensing and registration, others might have been provided. Consumers might have been given power to initiate civil or criminal prosecution. Violators might have been compelled to publish at their own expense the text of judgments or orders against them. This sanction was enforced in pre-Hitler Germany. Regulatory officers might have been empowered (as they are in New York City) to embargo and *destroy without notice or court intervention* products found violating the law. Instead, the Copeland bill relies solely on injunctions, seizures, and criminal prosecutions.

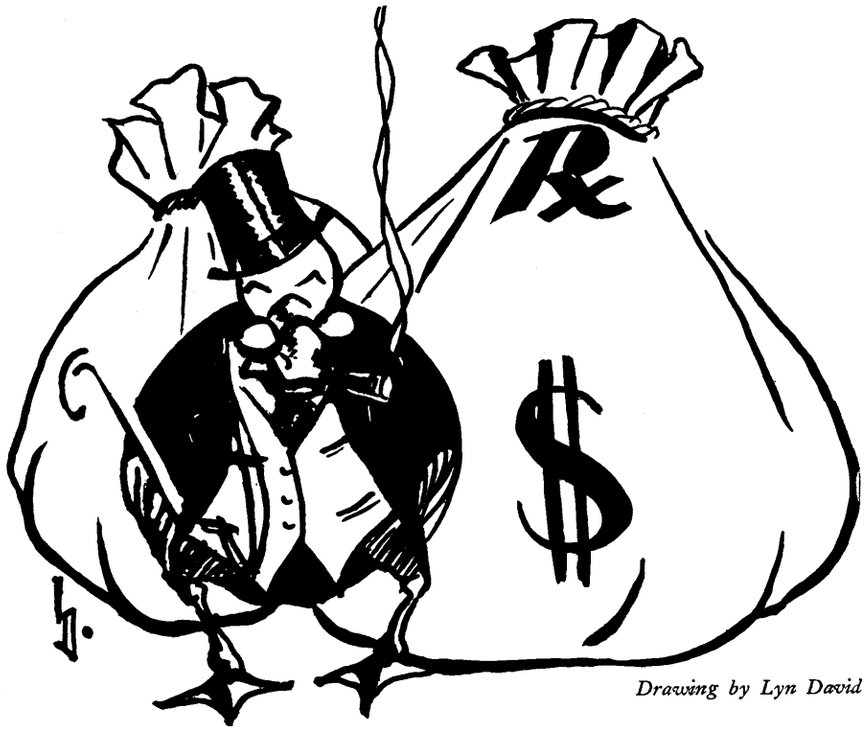
6. An Adequate Budget

No matter how well-drawn consumer legislation is, unless the enforcement agency is adequately financed, the law is meaningless, if not positively harmful. The Food and Drug Administration has less than 100 inspectors to watch over the food and drugs of the entire country, and its budget for the last fiscal year was only $1,557,713. The patent medicine division was assigned the munificent sum of $163,329. It was estimated that in 1929 $70,000,000 was spent for patent medicine advertising, while in 1934 *Pepsodent* alone spent for advertising $1,787,242! Regulation which leaves the government at such a competitive disadvantage is a farce.



X-ray showing a "prize" lodged in a child's throat. Our food and drug law allows such prizes to be placed in boxes of candy as sales inducements.

There is no reason why the industries regulated should not bear the cost of regulation. Revenues derived from licensing and registration fees, and graduated according to the business of the manufacturer and the size of his advertising budget, should be earmarked for the use of the Food and Drug Administration. Only in such a way can sabotage of enforcement at budget hearings be avoided. Lobbyists find it easier to operate at unattended budget committee meetings than on the floor of Congress.



Drawing by Lyn David

Prescribing all kinds of worthless products for all kinds of ills, the patent medicine industry is the most formidable "quack" that the American people have to contend with.

7. Health Education, Publicity and Scientific Research

In the last analysis no drug and cosmetic legislation relying on prohibitions alone can and purse unless it first educates him. No legislation relying on prohibitions alone can protect the consumer from his own lack of information.

The task of spreading information to combat the claims of advertisers is particularly difficult because of the working alliance between advertisers and those who own the channels of publicity. It is particularly because the consumer can get no enlightenment from his newspapers, radio, or magazines, that *the government* must use the findings of scientific agencies to fight advertised hokum.

In addition, the splendid scientific work done by Dr. Harvey Miley in the first days of the pure food and drug act must be renewed. Fundamental studies in adulteration and toxicology must be undertaken and their findings broadcast. The cost of such research should be financed by the fines and penalties imposed on fraudulent advertisers.

WHAT, therefore, should the attitude of consumer groups and trade unions be towards the Copeland Bill? Should they accept the New York senator's toothless measure as preferable to the moribund law of 1906, or should they begin at once the formation of a consumer front, in which organized labor is well represented? Such a consumer front, I submit, should select as its first goal, not the revision of the Copeland bill, but the launching of a senatorial investigation to mobilize popular support behind adequate consumer protection. The disclosures of a Senate Committee as to the lobbying activities of the food, drug, and cosmetic interests, their excess profits, the spuriousness of their advertising claims, their control of the organs of publicity, the dangers of widely sold nostrums, would soon find fruit in well-conceived laws. A law enacted after such an investigation would be ten times as valuable as that now advanced by Senator Copeland.

Grove's Laxative Bromo-Quinine

Great numbers of people buy these worthless pills in the hope that they will cure a cold or stop a headache. This article shows how badly the purchasers are cheated.

A BUSINESS in which the total annual sales exceed $300,000,000 must command, if not our respect, at least our attention. This staggering figure is the approximate amount of money taken from the American public each year by the patent medicine industry. Such a volume of business realized on the sale of questionable and often worthless products must necessarily be based upon a vast amount of carefully thought out falsehood and misrepresentation. From time to time we have investigated and exposed the false claims made by the makers of leading patent drugs, until by now we have assembled quite a "rogue's gallery" of fraudulent and worthless nostrums.

It would be difficult to say which of these many products takes the prize as the most preposterous and falsely advertised. However, it is certain that one of chief contenders for the honor would be *Grove's Laxative Bromo-Quinine,* the preparation that "changed its promoter from a salaried drug clerk to a multimillionaire in twenty years' time."

Before investigating the claims made for this nostrum let us examine the product itself

An analysis by the American Medical Association revealed that each pill contained two grains of phenacetin (later changed to acetanilid), one-fifth of a grain of caffein, two-fifths of a grain of quinine, and an undetermined amount of aloes. The findings of the state chemists of North Dakota were similar. Neither analysis showed the presence of bromides, which might be assumed to constitute an important part of a product with "Bromo" as part of the trade name. When this fact was called to the attention of the company, it hastened to furnish a sample of the "new product," which on analysis was found to contain one-thirtieth of a grain of potassium bromide in each pill!

What are these drugs, when are they used in legitimate medical practice, and what do they do?

Phenacetin is one of the large group of "pain killer" remedies previously discussed in HEALTH AND HYGIENE. Besides its numbing effect on the nerve centers it depresses the heart and is distinctly habit-forming. It is potentially quite dangerous to many people, though the labelling contained no warning of that fact. When the cost of phenacetin rose, it was replaced in the formula by acetanilid. It will be recalled that this drug is the principal ingredient of *Bromo-Seltzer,* and is responsible for the devastating symptoms and not infrequent fatal complications which can befall users of that nostrum. Among the complications resulting from the use of acetanilid are tremors, skin rashes, weakness so marked as to completely incapacitate the patient, confusion, and delirium. (See the December, 1936, issue of HEALTH AND HYGIENE).

Caffein is a valuable drug with an important stimulating effect on the circulation, the brain, and other organs. When used in medical practice the dose employed is at least three grains, and more often five. Since *Grove's Bromo-Quinine* pills were found to contain only one-fifth of one grain, or one-fifteenth of the minimum dose, we may safely assume that the caffein will not have the slightest detectible effect on the patient.

QUININE has certain uses in medicine, although in the treatment of colds and grippe it was discarded by most physicians years ago. It has never been demonstrated that quinine has a beneficial effect on the course of such ailments. But when quinine is given, the dose generally employed is four grains. Since the *Bromo-Quinine* pill contains only two-

fifths of one grain, or one-tenth the usual dose, we may assume that this ingredient, also, can have practically no effect on the patient.

The amount of bromide in each pill, one-thirtieth of a grain, is about one five-hundredth the dose prescribed in medical practice. Certainly we cannot expect so small an amount to have any effect even on the tenderest infant.

The drug aloin (aloes) is a laxative. Since the amount in the pills has not been determined, we cannot draw any conclusions regarding its effects, if any, in *Bromo-Quinine*. But even if we grant that there is enough aloin to have a laxative effect, the fact remains that colds and grippe are not to be cured by moving the bowels. And if it were necessary to employ a laxative for the relief of temporary constipation, aloes would certainly be far from the first choice.

To summarize: the only ingredient known to be present in sufficient quantity to have the slightest effect on the patient is acetanilid, a drug which depresses the heart, is habit-forming, and has a number of other dangerous attributes. The remaining drugs can be completely ignored in any investigation of the effects of *Bromo-Quinine* on the body.

With these facts in mind, let us examine the claims made for this stuff.

Concerning the statement that it will cure or prevent grippe, we have previously pointed out that there are practically no drugs having any appreciable effect on the course of this ailment. Colds, grippe, and similar conditions are best cared for by keeping the patient in bed and treating the individual symptoms as they arise. There is no drug or combination of drugs in the entire pharmacopoeia which will "remove the cause of colds, coughs, headache, neuralgia, grippe, feverish and malarial conditions." There is no single "cause of coughs," "cause of headache," or "cause of neuralgia." These symptoms may be due to a great variety of different diseases, and it is obviously absurd to apply a single treatment to them all, even if it were true that this treatment had an effect on any one of the underlying disease processes. Yet the *Grove's Laxative Bromo-Quinine* people would have you treat them all with a drug whose only possible effect is to depress the heart, numb the pain centers, and perhaps move the bowels.

JUST a word regarding the advertising claims that the quinine in the Grove product is "an improved quinine," and that it "does not cause nervousness or ringing in the head." It is clear that the reason it does not produce any ringing in the ears is that quinine is present in so completely insignificant an amount.

One other point about this product deserves attention. The company exploiting *Bromo-Quinine* markets a number of other preparations. Although *Laxative Bromo-Quinine* is sold as a "headache remedy," Grove's *Pepsin Coffee* is sold with the claim that it is "the only harmless headache remedy"! Is this a confession that Grove's *Bromo-Quinine* is *not* a "harmless headache remedy"?

In June, 1935, the Federal Trade Commission reported that the Grove company had agreed not to continue claiming that its product "is a cold remedy." However, in November of the same year the Grove company was still advertising as follows: "KILL THAT COLD! . . . A cold, being an internal infection, calls for internal treatment. It also calls for a COLD preparation and not something good for a number of other things as well. *Grove's Laxative Bromo-Quinine* is what a cold requires. It is expressly a cold tablet . . ."!

Since this first disregard of its agreement with the Federal Trade Commission, the Grove company has again been brought to task by this government body for making false and misleading advertising claims. However, the charges brought by the Federal Trade Commission receive very little publicity in our press, and therefore it is doubtful that the sale of this utterly worthless fake will suffer to any extent.

A Correction

In "Consumer Briefs" in the December, 1936, issue of HEALTH *and* HYGIENE it was stated that a shipment of *Bauer and Black's Eczema Lotion* had been seized and destroyed by the Food and Drug Administration. Bauer and Black have informed us that the seized product was not theirs, but rather *Dr. Blanchard's Eczema Lotion.* Bauer and Black had included this item in a shipment of their own goods, at the request of one of their customers. We regret the wrong impression that was created by our statement.

Cosmetic Problems

Acne or Pimples

Because of the large number of requests we constantly receive concerning the treatment of acne we are repeating the following condensed version of the article on this subject which appeared in the July, 1935, issue of HEALTH AND HYGIENE.

THE basic trouble in acne is the blackhead, which is merely an enlarged and plugged-up oil gland. Under normal conditions the oil glands secrete a liquid, oily substance which empties readily on the surface of the skin and lubricates it. Under the abnormal conditions present in acne, the mouths of the glands become plugged and the oil inside hardens and dries so that it cannot be emptied. This hardened substance is the blackhead.

Germs are always present on the surface of the skin. These germs infect the blackheads and produce the pimples in which, sooner or later, pus is formed.

The fundamental cause of acne is not known. Most probably it is caused by a disturbance of the endocrine or ductless glands. The total influence of these glands—the pituitary, adrenal, thyroid, and sex glands—is so delicately balanced that slight changes in them may produce disturbances in various parts of the body. It is probable that acne is such a disturbance manifested in the oil glands of the skin.

The relation of diet to acne is much misunderstood. It is not unusual for persons with acne to undergo all sorts of rigorous diets for long periods of time without the slightest improvement of the skin eruption. Such starvation diets are harmful and should not be resorted to. In fact, thin people with acne require actual building up of weight by highly nutritious foods before their skin trouble will be helped by local treatment. A correct diet alone will not cure acne, but an incorrect diet may make it worse. Neither is acne caused by constipation, although some cases may be aggravated by it.

Local treatment is needed to cure a case of acne. The most efficient and reliable method of treatment at the present time is by means of x-rays. These act by virtue of their power of penetrating into the depths of the skin where the oil glands are situated. They are usually given in divided or fractional doses, at weekly intervals, and produce a gradual drying up of the oil glands until the pimples and blackheads disappear. Reddish or brown stains often follow the disappearance of the eruption. These should cause no alarm, since time and a little treatment will clear them up. Treatment with x-rays should be carried out only by a dermatologist (skin specialist) trained and experienced in their use for acne. Some people develop recurrences for which a few more x-ray treatments given after a sufficient time interval may be necessary.

Alpine light or artificial sun-rays are often employed following the course of x-rays, and sometimes alone. They are of considerable value in some cases.

For very mild cases, the removal of blackheads with a simple metal instrument and the application of lotio alba are sometimes sufficient. The instrument and skin must first be cleansed with 70 per cent alcohol (rubbing alcohol will do), the blackheads removed, the skin again cleansed, and finally the lotion patted on and allowed to remain overnight. Such treatment is tedious, and must be continued for long periods of time. If the skin becomes red and irritated, stop and apply a soothing cold application such as boric acid solution (made by dissolving one teaspoonful of boric acid powder in one glass of hot water and allowing to cool).

Blackheads are not caused by dirt getting into the pores, so scrubbing will not cure them. The little black dot at the top of the blackhead is due to its exposure, and is similar to the "rusting" of the cut surface of an apple after exposure to the air.

BOOK REVIEWS

Applied Dietetics—by Frances Stern
Keep Your Hair On—by Oscar R. Levin
Genetics and the Social Order—by Mark Graubard
Out of the Night—by H. J. Muller

APPLIED DIETETICS, by *Frances Stern*, 263 pp., The Williams and Wilkins Company, Baltimore, Maryland, $3.50

MISS Frances Stern is to be congratulated. Without doubt, this book is the most readable manual of dietetics we have yet seen. The type of the text is clear and the tables, outlines, and charts, which cover more than 160 pages are gratifyingly clear and therefore unusually useful. The manual proceeds logically. It first defines the requisites for an adequate diet, then the methods of constructing such a diet, and finally the principles and methods of constructing diets suitable for various illnesses.

There follows a full discussion of personal factors which are often as important in dietetics as the more technical problems. These include such things as the dietary habits of various nationalities, eating-in and eating-out, dietary education, and monetary income, of which we shall have more to say.

Although the book recommends itself chiefly to technical workers, the layman who is interested will find that with some application the book will make the science of dietetics clear to him.

As was noted above, Miss Stern has given a good deal of attention to those factors in diet which fall a little outside the direct field of calories, vitamins, minerals, and so on. She has even essayed in some detail to attack the problem of the relation of income to diet. Here, however, we must call attention to the only shortcoming of this book. While Miss Stern has indicated how people in low income groups can twist about the grocery budget to obtain the essentials of an adequate diet for a dollar or two less, she entirely neglects the plight of that large section of our population whose income, no matter how it is managed, is still insufficient to buy the family the essentials of an adequate diet. "Harassed with fear and worry over the future for himself and his family, frustrated in many ways, resentful, discouraged to the point of indifference, with loss of faith in the possibility of a better future, the patient can make but little effort to help . . . The stress of a psychological situation influences emotions . . . 'Why make a plan for me?' the patient will say." Thus, Miss Stern pays more attention to psychological insecurity arising from poverty than to the economic causes of that insecurity.

Our experience, on the other hand, has shown us that where dieticians and social workers join with their patients to demand of home relief and W.P.A. officials sufficient funds to purchase an adequate diet, these demand are often obtained. Or when underpaid workers strike to obtain better wages, which in turn will give them better food, the proper application of the science of dietetics makes it necessary for dieticians to support the strikers.

* * *

KEEP YOUR HAIR ON! *by Oscar R. Levin*, M.D., 178 pp., Robert McBride and Co., N. Y., $1.75.

Here is a book about hair problems that is intended for lay consumption. It is written in a very breezy style which at times borders a little too much on the "wise crack" level. However, it does read easily.

The author does a good job in exposing the various quackeries connected with the hair racket. His chapters about the so-called hair specialists, depilatories, and hair dyes should prove valuable for those who believe all the advertisements. He also correctly warns against the removal of superfluous hairs by x-rays. This has been shown to be positively dangerous.

Having made such a good start, the author then proceeds to weaken his position by adopting a positiveness about the subject of hair that the facts scarcely warrant. Medical science knows very little of practical value about the cause, prevention or treatment of baldness. Some of the best dermatologists are themselves bald. It is true that loss of hair or disease of the scalp should be reason enough for a patient to seek the opinion of a physician. Some constitutional disorder might be the cause. However, that is a far cry from giving the impression that dermatologists can do much about the hair loss that occurs in the majority of cases where no constitutional abnormality can be detected. The author is too optimistic, to say the least, about the dermatologist's ability to cope with this problem. It is yet to be proved that a so-called proper diet, medicine, or mechanical aids to the circulation of the scalp, have any value in preventing or stopping hair loss in that great army of people who, though apparently healthy, become bald.

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GENETICS AND THE SOCIAL ORDER, *by Mark Graubard*, 127 pp., 14 ill., Tomorrow Publishers, N. Y. $.75.

OUT OF THE NIGHT *by H. J. Muller*, 127 pp., Vanguard Press, N. Y., $1.50.

A GREAT deal is being said and written today about race, human nature, eugenics, and sterilization. For a long time certain "professors," speaking in the name of science, have told us that socialism was impossible because it was against human nature. Capitalism, they said, was based on the fact that people were greedy and selfish and since human nature could not be changed, our social organization could not be changed. It was always hard to understand exactly why "human nature" made it necessary for millions to deny their own human desires for good food, decent homes and a happy life, in order that a few should have an opportunity to indulge their acquisitiveness and selfishness. Finally, the example of the Soviet Union showed that when the farmers and workers took over the means of production, there was nothing about their human nature that made it impossible for them to enjoy the fruits of their work without turning over the largest part to a useless, moneyed class.

The "professors," upset by this blow to their theories, retreated to the next line of defense. Russians, they said, are different. It is possible for Russian human nature to get along without supporting a parasite class, but it is impossible for other kinds of human nature.

More recently the fascists of Germany have been shouting loudly about race and sterilization. The misery, unemployment and poverty in the midst of plenty, so widespread today, is caused, they say, not by the breakdown of capitalism, but by "degenerate" elements such as Jews and Communists. By the term "degenerate" the fascists mean all workers who object to wage cuts and starvation. Not the reorganization of society but the knife of sterilization is needed to solve the world's problems, the fascists cry. These theories are not limited to Germany, but find eager echoes in other countries, including ours.

Under these circumstances it is important to examine carefully such subjects as race, inheritance and human nature. What is it that makes people what they are? What are the relations between heredity and environment? What is a race? These questions are what Graubard tries to answer in his book.

Graubard begins with an excellent summary of the facts of inheritance. Our knowledge of these facts is based in large part on the work of two men, Johann Gregor Mendel and Thomas Hunt Morgan. Mendel was an Austrian monk who took time off from his prayers to study inheritance in peas. In 1866, Mendel published a very important paper which clearly established certain basic laws of inheritance. His ideas were ignored and forgotten until 1900. In that year three botanists working independently rediscovered these laws. Mendel's old paper was unearthed and the study of heredity was for the first time put on a scientific basis. In 1905, Thomas Hunt Morgan, while working at Columbia University, began a series of experiments which greatly extended our knowledge of this field. He used the little fruit fly *Drosophila Melanogaster*. This fly, able to breed a new generation every two weeks, enabled Morgan to study a great many generations in a short time. And Graubard's account of the work of these men is fascinating. It requires, however, careful concentration, but the knowledge of these facts is indispensable for the further understanding of this subject and is worth the effort required. Graubard then goes on to discuss the question of race, proving that this term is without value when scientifically examined. He takes up the questions of the science of human nature, heredity in man, eugenics and the relation of biology to social structure. He shows that it is impossible to talk about hereditary differences between human groups unless they have had equality of opportunity. In a brilliant final chapter Graubard shows how in the Soviet Union different national minorities, for the first time in history, have equal opportunity for self-expression and the development of their culture—socialist in form, national in content. Under these conditions groups long oppressed and degraded, and regarded as inferior, showed that their inherent capacities were second to none.

It is unfortunate that a few errors have crept into so excellent a book. On page 102, the author lists multiple sclerosis, a disease of the nervous system, as hereditary. This is not so, and we hope that future editions of the book will have the error removed. The author's treatment of Freud and psychoanalysis is poor and misleading. While this subject is controversial and differences of opinion

exist, Graubard makes a number of statements about it that are definitely untrue. Probably the chief source of his failure to supply *sound* criticism of psychoanalysis is his failure to differentiate between the social and economic views of psychoanalysts, between their attempts to replace a Marxian understanding of society by one derived from their study of the individual, and their technical achievements in the problem of mental health and disease. All of his criticism is based on the weakest portion of Freud, on Freud as a social philosopher. This is as poor a criterion as it would be to judge the work of Mendel and Morgan by their social views.

H. J. Muller, the author of the second book, is one of the world's greatest geneticists. Originally an assistant of Thomas Hunt Morgan, he has since made fundamental contributions to genetics, the science of heredity. Before his time new kinds of *drosophila* (fruit flies) could only be gotten by patiently waiting for them to appear. Cross breeding could only juggle around characteristics that had appeared spontaneously. Muller discovered a way of greatly speeding up the appearance of the new characteristics (e.g., size of wing, color of eyes) or mutations as they are called, by the use of x-ray. The x-ray upset the chromosomes, the part of the cell that determines inheritance, in such a way that new characteristics appeared hundreds of times as frequently as before. These new individuals were then isolated and bred among themselves. Starting with the fruit fly, this work has slowly been extended to other animals and to plants with startling results of great promise for the future. Muller, who was a professor of genetics at the University of Texas, went to the Soviet Union where he is now Senior Geneticist at the Institute of Genetics at Moscow. It was there, with a new world arising all around him, that he came to realize the relation of science, genetics in particular, to the social order.

In his book he tells the story of man's development and progress from his first origins as a microscopic form to the present day. He tells how man's technical and scientific advances have outdistanced his social progress. He shows how our present social organization, based on co-operation in production but on exploitation and individualism in distribution, has become a straitjacket on future progress. He explains how science is increasingly becoming sterile as a result of its necessity to justify the present social order, which cannot be justified. Only with the removal of this straitjacket, with the organization of a new society such as the one in the Soviet Union, will can continue to advance.

The major part of his book is a speculation as to what mankind will achieve when it comes "out of the night," when the struggle of the working class is finally successful. The reviewer will make no attempt to summarize here his astonishing picture of the future. It is of course necessary to point out that such distant readings of the future can only be guesses, and that the particular direction that progress may take is hard to predict. One thing is certain, that all of man's past achievements are only the first few steps compared with what he will do when he has at last been freed from his present social fetters. This book is not too easy to read and might have been written more simply. Both Graubard and Muller can be welcomed into the steadily increasing body of scientists and intellectuals who have joined the working class in its fight for a new society.

EMANUEL GLICK.

QUESTIONS AND ANSWERS

If you wish to have any health problem discussed write to HEALTH and HYGIENE. Your letter will be referred to one of our doctors for reply. However, diagnosis of individual cases and prescription for their treatment will not be undertaken. No letter will receive attention unless it is signed and accompanied by a self-addressed, stamped envelope.

Irradiated Milk

Joliet, Ill.

DEAR DOCTORS:

What is your opinion of vitamin D irradiated milk? If this milk is given to a child is it also necessary to provide cod liver oil in order to assure a sufficient amount of vitamin D?—S. K.

Answer—Vitamin D milk is a recent development used to supply vitamins to infants and children. The vitamin D content of the milk is increased either by adding a concentrated vitamin D preparation directly to the milk, by irradiating the milk—that is, exposing it to ultra-violet light—irradiating the cows, or by feeding the cows increased amounts of vitamin D in their fodder. The average vitamin D content of milk is 340 units per quart. It has been shown that this small amount of vitamin D, supplied to an infant, is just enough to prevent rickets. However, it is so near the absolute minimum requirement, that it is not wise to depend wholly on this source for vitamin D. And since the need for vitamin A must also be met, it is clear that the use of vitamin D milk does not mean that the use of cod liver oil or a derivative can be stopped.

* * *

Shaking Palsy

Charleston, W. Va.

DEAR DOCTORS:

Would you please advise me concerning the nature of the brain disease known as Parkinsonism. Is it curable, and how is it affected by age?—S. J.

Answer—Parkinsonism (paralysis agitans or shaking palsy) is a disease of the brain which may be divided into two main groups, as follows:

1. Parkinsonism following sleeping sickness or any other inflammation of the brain, as, for instance, a complication in influenza. This type of Parkinsonism (post-encephalitic) is usually of sudden onset and may occur at any age.

2. Parkinsonism due to hardening of the arteries of the brain. This type rarely occurs before the age of forty, and usually between fifty and sixty. It is progressive, the development extending over a long period of time.

The disease is characterized by a shaking (tremor), first in one limb or only in the fingers. This may take the form of peculiar movements of the index finger and thumb, which may best be described as "pill-roller" movements. The shaking movements may then spread to other portions of the body, e.g., jaw, tongue, and so on. The face of the afflicted person is usually impassive and expressionless, the gait is slowed, and the steps are short. All movements are made as though with great effort. The speech becomes a characteristic monotone.

It is obvious that a person afflicted with a chronic disease of this nature may develop some mental symptoms. These may vary from irritability, self-consciousness, and unfriendliness to a condition in which the patient is suspicious of everyone with whom he comes in contact.

At the present time, we know of no cure for Parkinsonism. The treatment consists in making the patient as comfortable as possible under the circumstances. Warm baths daily and gentle massage are recommended to relieve the tenseness which is a constant strain on the patient. It is advisable for the patient to pursue an occupation which does not tax his strength to any extent.

* * *

Industrial Skin Disease

Schenectady, N. Y.

DEAR DOCTORS:

I should like to obtain information about a skin disease which affects workmen employed in the manufacture of copper wire. The process involved necessitates considerable handling which brings the workers in direct contact with the copper. The disease breaks out in the form of a rash that causes itching and irritation. Can you advise any method of avoiding this ailment, and also if an affected workman can receive compensation under the State law?—J. L.

Answer—Skin affections form a very large por-

tion of disabling occupational diseases. The list of the offending substances used in industry is almost endless. Among copper workers, the two apparent offenders are muriatic acid and the heat from the furnaces. Constant exposure to the effects of these irritants causes the skin to become inflamed, cracked, raw, and, at times, infected.

Prevention would be directed at protecting the skin of the worker from the noxious substances by various methods. These might include gloves, devices aimed at preventing spill-over and spattering of solution, mechanical appliances for keeping the workers' hands at a distance from the acid and heat, and general sanitary precautions such as adequate washrooms and shower rooms.

In New York State, industrial dermatoses are compensable diseases. Attempts are constantly made by the employers to ascribe the skin afflictions of their employees to non-industrial causes. The fact that more than one or two workers on the same job are similarly afflicted and that other plants show the same occurrences among the employees justifies the case for these workers considerably. In New York State, all diseases arising out of or connected with a job are compensable.

* * *

Dextri-Maltose

Tacoma, Wash.

DEAR DOCTORS:

Will you please advise me whether it is necessary to feed the normal infant Dextri-Maltose in milk? I know that a great many doctors prescribe this product, and I am wondering just when it should be used and when it need not be used.

—L. M.

Answer—Dextri-Maltose is a combination of dextrines (starches treated by heat until they are converted into dextrines) and maltose or malt sugar. While it is an excellent product for the modification of cow's milk for babies, it is not the only sugar that can be used in the preparation of babies' formulas.

Perhaps the cheapest and one of the best sugars is plain granulated sugar, the same that you use in your household. Cane sugar may be tried in place of Dextri-Maltose. The only disadvantage in using cane sugar is that it is likely to cause constipation in some babies. If, after a trial of a few days, it is found that the bowels remain regular and the stools not too hard in consistency, the use of sugar may be continued. (*Two* tablespoonfuls of Dextri-Maltose are equivalent to *one* tablespoonful of cane sugar.)

Another substitute for Dextri-Maltose, which is somewhat more expensive than cane sugar but much cheaper than Dextri-Maltose, is Karo Corn Syrup. This is just as good as Dextri-Maltose in every respect, is not so sweet as cane sugar, and will not cause constipation. (*Two* tablespoonfuls of Dextri-Maltose are equivalent to *one* tablespoonful of Karo Corn Syrup.)

The change from Dextri-Maltose to granulated sugar should be gradual: give half of each for one or two days, then three-quarters of sugar and one quarter of Dextri-Maltose, then only sugar.

* * *

Halitosis

Beaumont, Tex.

DEAR DOCTORS:

Can you advise what mouth wash can be used to counteract bad breath?—S. T.

Answer—Halitosis (bad breath) cannot be effectively counteracted by any mouth wash or tooth paste. These preparations act as deodorants and are effective only for a short time, usually not more than five or ten minutes. The causes of unpleasant breath are many and varied. It may be due to intestinal disorders, chronic constipation, gall bladder conditions, diseased tonsils, sinus and nasal infections, abscessed and decaying teeth, trench mouth, or pyorrhea. All of these conditions call for medical or dental treatment, and a mouth wash will do absolutely no good.

* * *

Aristotrop—Cancer "Cure"

Detroit, Mich.

DEAR DOCTORS:

I recently read in a newspaper about a new cancer cure called *Aristotrop*. It costs $35. Is it of any value?—S. I.

Answer—For more than thirty years, medical workers have attempted to use various foreign substances and even blood in the treatment of cancer. One after another, each treatment suggested was found wanting and promptly forgotten. The latest of such treatments is *Aristotrop*, prepared by Ferdinand Blumenthal and his co-workers. Blumenthal, who, until forced out by the Nazis, was one of the editors of a German journal for cancer research, now heads a clinic in Belgrade, Jugoslavia. His product, *Aristotrop*, is manufactured in Basel, Switzerland.

What is *Aristotrop?* It is said to be a mixture of substances obtained from the spleens, livers, intestines, stomachs, and pancreases (sweetbreads) of freshly killed animals. It is injected in solution form, given by mouth in tablets, and even rubbed on a superficial cancer in salve form. The effect is claimed to be more marked on the cancer spread through the body than on the original tumor from which the spread takes place. Patients are said to have improved with its use. Is this then the long awaited cure for cancer? We are afraid not.

Cancer is a serious disease and only the best treatment should be used. First, it is important to have a correct diagnosis; secondly, it is essential that whatever treatment is used—whether surgery, x-rays, or radium, together or separately—should be undertaken only by competent doctors. Early diagnosis and treatment can do much; late diagnosis and treatment are less effective and the use of unproved drugs can do nothing at all.

It is important to remember that there is often temporary improvement in cancer patients without anything being done. This is not infrequently the case after an operation in which nothing is done because the cancer is already too far gone. Although the patient does not know he is suffering from cancer, he gains weight after the operation and feels improved. This may last for several months. Since patients have been treated only *five months* with *Aristotrop*, it is clearly too soon to consider it a cure. Doctors experienced in cancer work wait at least *five years* before they decide that cancer treatment has been successful.

At the recent International Cancer Conference at Brussels, Blumenthal presented his work before the leading cancer experts of all countries of the world. The work was very unfavorably received, especially when Blumenthal refused to reveal any details about *Aristotrop*, its composition or manner of preparation. In the science of medicine, there are no secret remedies or treatments. The truly reputable physician and doctor hasten to let the medical profession have all the details of any method of treatment he has devised, so that the method can be tried extensively on many patients. Whatever good work Blumenthal has done in the past is no guarantee that *anything* he does is to be accepted without question. It is suggested that money spent for *Aristotrop* would be much better spent keeping an incurable cancer patient as comfortable as possible by other means.

It is unfortunate, and misleading to many cancer sufferers and their relatives, that any newspaper should publish reports of cancer "cures" before such "cures" have definitely been proved of value.

* * *

Night Sweats

Cheyenne, Wyo.

DEAR DOCTORS:

Could you please tell me what might cause excessive sweating at night? I have heard that this is usually a sign of tuberculosis. Can such sweating occur in a healthy person?—A. F.

Answer—Excessive sweating in a person who is otherwise in good health and does not have fever, cough, blood-spitting, pain in the chest, shortness of breath, or any other symptom suggestive of illness, is in all probability not caused by tuberculosis.

If the excessive sweating is of recent origin, it would be essential to have the findings of a complete physical examination before the underlying cause of the sweating could be discovered.

* * *

Sent to Asylum for Insane

Oswego, N. Y.

DEAR DOCTORS:

Frequently one hears of people who are committed to an institution for the insane because their relatives or others are anxious to have them out of the way. In such cases is there anything that can be done to make sure that a person has not been committed wrongly?—L. M.

Answer—It is not always easy for the layman to recognize mental illness. The layman's idea of mental illness is often associated with the idea of a "raving maniac," that is, a highly excitable and disturbed individual who is a menace to himself and the community. Actually, very few of the insane fit this description, and those who do are rarely disturbed constantly or over a long period of time.

Furthermore, a committment to a state institution for the insane is too often thought of as a method of punishment, or, at best, an incarceration of doubtful justification. It is not generally known that these institutions are legitimate hospitals which treat mental illnesses as the general hospitals treat bodily diseases. The New York State system for the care of the insane is one of the best in the country, and the hospital superintendents are careful to keep only those patients who are legally eligible for treatment. Besides, the admission rate to these hospitals is so high that the problem of bed capacity is a serious one; for this reason, if for no other, the hospitals would not hold patients whom they were able to discharge.

If a person were in doubt about the justice of a committment to such an institution, he should go to the hospital and discuss the case with the doctor who is in charge of the patient. This would undoubtedly help to clear up the matter.

TO ALL SUBSCRIBERS

If you are planning to move, please notify us of your new address as early as possible in order that you will not miss a single issue. The post-office does not forward magazines, and duplicate copies will not be sent out.

same way, the other adjustments, or the lack of them, influence the sexual adjustment. A couple cannot expect to have a happy sex life, even though it is physically adequate, if they bicker and quarrel throughout the day. On the other hand an inadequate sex life will accentuate such bickering and quarreling, while an adequate one will tend to lessen them. There is a dynamic interplay between the sex relationship and the other activities which go to make up the totality of married life.

People sometimes look upon sex as a healing agent to be used in solving the difficulties that arise between them during daily life. This is often the case when a person who feels guilty about things he or she has said or done, tries to atone for them by making sexual advances to the other partner. Such a situation, however, puts too heavy a burden upon the sexual impulse. It is better to acknowledge one's mistake freely before having sexual relations. After the mistake has been acknowledged and the difficulty adjusted, then the desire for sexual relations can arise spontaneously in both partners. Under these circumstances the sexual relations will begin in an atmosphere of mutual harmony, will be an evidence of such harmony, and will help to cement and maintain it.

The sexual needs of both partners must be taken into account. When a difference in these needs exists it should be faced honestly, and a fair compromise worked out. When sexual relations are otherwise satisfying there is rarely much difficulty in arriving at such a solution for both partners. When either a husband or wife feels that he or she is not getting sexual attention frequently enough, it often means that none of the sex experiences that the couple are having is completely gratifying. In these matters complaints about frequency often imply unexpressed complaints about quality, and the solution lies in improving the quality of the relationship. If the husband is unsatisfied because he is trying to satisfy other needs, as, for instance, when he attempts to overcome feelings of inferiority by frequent exercise of the sexual impulse, the wife may meet the situation, not by more frequent indulgence in sexual relations but by helping her husband overcome his feelings of inferiority. This she can do by giving him the assurance and recognition he craves.

In the same way a wife's excessive demand for sexual relations is often due to desire for more attention and affection, and can be met directly by proper recognition and kindness. When two people try to make each other happy there is rarely any serious sexual conflict between them. A happy sex life is usually a healthy one.

IT need hardly be said that many forces in our society work against the possibility of a happy sex life. Previous articles have described some of the factors operating during our childhood which tend to distort later sexual attitudes. Economic stress and insecurity causes postponement of marriage long beyond the proper age. This in turn causes people to resort to such unsatisfactory substitutes for marriage as masturbation, intercourse with prostitutes, casual sexual relations, and the semi-intercourse of heavy petting. Masturbation, as has been explained in Dr. Williams' article in the November, 1935, issue of HEALTH AND HYGIENE, is a normal occurrence in youth—a natural stage in development—and where no better outlet exists, it is better than none at all. However, it is no adequate substitute for an emotionally rich sex relationship. Prostitution robs the sex experience of all its human richness. Casual sexual relations tend in a similar way to make sex trivial. A sex life that is worthy of human beings is one that includes affection, a sense of companionship, and the cooperation of two equal partners in the business of living.

The insecurity of our society raises the anxiety of husband and wife and makes mutual adjustment more difficult. The solution of these problems can be achieved only by solving the underlying social and economic difficulties from which these problems arise. Therefore, although seemingly unrelated, the fight against economic and social insecurity is at the same time a fight for the achievement of an emotionally rich sex life, worthy of human beings, for the greatest number of people.

The American Standard of Living

Secretary Henry A. Wallace in his last report for the Department of Agriculture stated that one-half the families in this country spend less than $130 a year per person for food. According to the Department this is just enough to maintain a minimum adequate diet if the money is spent with great care.

ceive are complimentary. Not infrequently someone objects because we have handled some favorite product or theory too roughly. Then, too, we receive occasional criticism of editorial policy. For instance, F. H. of San Francisco objects to our practice of referring the reader to articles in previous issues of the magazine for more complete information on certain subjects. "For new subscribers this is an especial bore—and for old ones too," says F. H. All this time we thought we were being helpful. We wonder if there are others who feel the way F. H. does.

ON THE WHOLE, though, our fan mail is gratifying. Those who have written us complimentary letters in the past few weeks include a number of physicians, dentists, medical students, nurses, hygiene teachers, labor union organizers, a railroad conductor, a Hollywood movie executive, a consulting chemist, a lion tamer in a circus, and a man who after reading the article *Health in Landon's Kansas* writes: "I am and always have been a staunch Republican, but thank God I voted for Roosevelt."

THIS IS THE FIRST issue of HEALTH AND HYGIENE to go out to subscribers with holes punched in the margins so that copies may be kept in a binder for reference. We will soon offer a special binder that will hold a dozen magazines.

BY THE TIME THIS issue appears there will be only a few days left in which to get tickets for our theatre party on Monday evening, March 1. The show is the Theatre Union's *Marching Song* by John Howard Lawson. Tickets at 75 cents, $1.00, and $1.50 may be obtained at our offices.

EACH MONTH from now on we will offer a free copy of a book on our recommended list to the reader who sends us the best letter telling us which of our articles he has liked best, and why. Correspondents who write to us during the month of March in competition for the prize may have their choice of an autographed copy of either Arthur Kallet's *100,000,000 Guinea Pigs* or Carl Malmberg's *Diet and Die.*

OUR IDEA FOR A FRAUD OF THE MONTH department did not take. We received only a few letters in response to it, so we think it may be as well to let the matter drop. However, we still believe it would be a good thing if more people wrote to Washington for the Department of Agriculture's *Notices of Judgment* and the Federal Trade Commission's *Monthly Statement of Work.* These publications at least keep you informed about the frauds that the government *does manage* to catch up with.

SPEAKING OF government publications, we have listed on page 90 a number of valuable books on child care which you can get for the asking. It is not generally known that the various government departments publish a great deal of worth-while material and distribute it either free or at a very small cost. From now on we intend to call your attention regularly to such publications in the field of Health and Hygiene.

THE COMBINATION OFFERS of certain health books and subscriptions to HEALTH AND HYGIENE remain in effect. For details concerning these low-price combination offers we refer you to the back covers of previous issues.

H. A. OF NEW YORK CITY writes: "Enclosed find $1 for a year's subscription. This is to stop the pernicious habit of borrowing my brother's copy all the time. My next problem will be to get subs for those who borrow from me." D. S. of Brooklyn informs us that he neglected to send in his renewal when his subscription expired, but that "mass pressure" on the part of his family forced him to do so.

WE HAVE RECEIVED requests for an article on the health aspects of the painting and decorating trade, and several requests for more articles on diet. H. T. of Hollywood, Calif., writes: "I think it would be beneficial if you can increase the number of articles pertaining to new angles in medicine and science, such as the recent one on the preservation of blood for transfusion work in the U.S.S.R. We are grateful for all these suggestions, and will try to act on them.

WE ARE FORTUNATE this month in having contributions by two men of outstanding rank in their respective fields. Dr. Henry E. Sigerist, whose *Historical Background of Industrial and Occupational Diseases* appears in this issue, is Director of the Institute of the History of Medicine at the Johns Hopkins University. Will Maslow, who writes *Poor Food and Drug Laws* is a New York attorney who is interested in consumer legislation and who has drafted a model State *pure* food, drug, and cosmetics bill.

HOW THE KIDNEYS WORK (*Continued from page 74*)

THERE are many tests of kidney function. The simple examination of the urine for blood cells, albumin, and casts (dead cells from the tubules, and other debris compressed into the shape of the tubule and then cast off in the urine) will indicate if active inflammation is present. Secondly, a kidney which can pass concentrated or dilute urine well is capable of performing its functions. To this end, the specific gravity of the urine is tested. Other tests require that the patient first drink a lot of water and then abstain from all fluids, the specific gravity being tested at intervals. Another type of test is the "dye excretion test." A dye which would normally be excreted in the urine is injected into a vein, and the amount which is passed in one or two hours is measured.

Perhaps even more important than the urine tests are blood tests to determine how well the kidney is working. The blood of a normal person contains a certain amount of urea, uric acid, and other nitrogen-containing products which result from the breakdown of proteins. But if these are present in abnormally large amounts, it is a sign that the kidneys are not getting rid of these substances as fast as they should, with the result that they pile up in the blood.

In conclusion, we may state that nature has provided the kidney as well as most other organs of the body with a super-abundance of tissue to take care of emergencies. Normally, at any one time blood is flowing through only a minority of the glomeruli; the remainder are not being used at all and are temporarily at rest. Experimentally, it is possible to remove one and a half kidneys from an animal without causing kidney insufficiency. It is a very rare adult who will not show some damage to a few glomeruli, but it takes widespread damage to produce any real signs of disease.