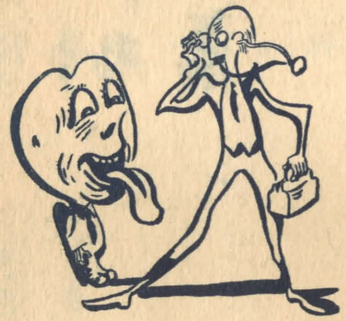

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THE VITAMINS

DEATH IN THE MINES

One-hundred Doctors write for this magazine!

Purely Personal

HEALTH AND HYGIENE is growing so rapidly that we have found it necessary to move the editorial office to larger quarters. Our new address is 215 Fourth Avenue. In the old office the editors looked out of the window (when there was time to look) at the uninspiring rear wall of the adjoining building. Now we will have an unobstructed view of the East River from the eighteenth floor of the new building. Ought to make the job of editing easier.

IN ORDER TO FACILITATE the task of moving we have decided to offer all the back numbers of HEALTH AND HYGIENE that we have on hand at a reduced price. There are eighteen back numbers available—three are out of print—and we will send all eighteen postpaid upon receipt of $1. Ordinarily they would cost $1.50. Those who want to take advantage of this offer had better act quickly, for we have only thirty copies of the June, 1935, issue left. Orders will be filled as they are received, and after the supply of June, 1935's is exhausted we will be able to send only seventeen issues for the $1.

THE OCTOBER, 1935, July, 1936, and January, 1937, issues contain indexes for all of these back numbers. In a few months one complete index will be printed, covering all of the issues to date.

WE ARE CONSTANTLY receiving letters of enthusiastic endorsement from physicians, dentists, nurses, and teachers of hygiene. May we suggest that our readers bring HEALTH AND HYGIENE to the attention of such workers in the field of health. People with medical training often become our staunchest supporters once they become acquainted with the magazine.

THE RESPONSE TO OUR proposal that subscribers' copies of HEALTH AND HYGIENE be punched so that they could be filed in a loose-leaf binder was large and overwhelmingly favorable. Of the many letters and postcards that we

(*Turn to page* 63)

In This Issue

FEBRUARY, 1937
VOLUME 5, NUMBER 2

Editors: **CARL MALMBERG** *and* **JOHN STUART**
Business Manager: **SADIE FRANKLIN**

HEALTH
and
HYGIENE

Magazine of the People's Health Education League

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Editorial:

Dust, Death, and Dollars

Silicosis Is Preventable

THE leading article (see opposite page) in this issue tells an amazing story of the disregard for human life and health that prevails in one of the nation's basic industries. Approximately 150,000 Pennsylvania hard-coal miners are living and working under virtual sentence of death, because the mine owners will not install available equipment to reduce the amount of dust in the mines.

Does this seem like an exaggeration? Then read the article. The figures and facts are there, taken from the government's own survey of conditions in the mines. Coal miners now know that the so-called "miners' asthma" from which so many of them suffer is a disease known to medical men as anthraco-silicosis, that it is caused by the high dust content of the atmosphere they work in, that the silica in the dust sets up a lung inflammation which robs them of breath and brings on tuberculosis and heart failure, and—that it is incurable.

Incurable, yes—but not unpreventable.

According to the United States Department of Labor there are 150 industries in this country in which the workers are exposed to the hazards of silicosis. These industries employ a total of about a million people. A million American workers exposed to an incurable but preventable disease!

The prevention of anthraco-silicosis is quite simple; the use of a few additional processes such as wet-drilling, waiting between blasts for the dust to settle, wetting down the dusty parts of the mine, and the installation of dust control and ventilation appliances would solve the problem.

Of course, such measures would increase the cost of operating the mines, and this is the reason the mine operators are bitterly opposed to them. It is futile to suppose that the operators will act to curb silicosis until they are forced to do so, and only the progressive workers in industry, acting through their trade unions, can secure legislation making safety measures compulsory.

Faults in New York Law

NOT only are compulsory safety devices needed, but adequate workmen's compensation laws should be enacted to provide for the thousands of workers who are already affected with silicosis and who have nothing to look forward to except a period of disablement and an agonizing death. New York State has recently enacted a compensation law for silicosis, but it is so inadequate in most of its features that it may well serve as a model of the kind of law that organized labor *should not* be satisfied with. Let us consider some of the defects of this law.

(*a*) Employers are not liable unless *total* disability results within one year of the last injurious exposure. This is the worst feature of the law. Since silicosis symptoms do not generally develop until years after exposure, the many silicosis victims who have changed their jobs or been unemployed for a year or more cannot claim benefits.

(*b*) A worker cannot get compensation if the last injurious exposure occurred prior to September 1, 1935. Thus, all silicotics who were too sick to work after this date are excluded from benefits, even though the disease was contracted, as it usually is, by working at the injurious occupation over a long period of years.

(*c*) Workers who became totally disabled soon after the effective date of the law, or their dependents in case of death, receive a pitifully inadequate sum.

(*d*) Medical care is limited to a period of ninety days after disablement.

There are other shortcomings of the New York law which we have no space to mention. With the material provided by the recent surveys such as that on anthraco-silicosis, the workers in dusty trades can go to their legislature armed with the facts and see that they get safety and compensation laws with teeth in them. Such laws may mean less money in the pockets of the employers, but they will also mean fewer workers in premature graves.

Death in the Mines

A government survey reveals that Pennsylvania miners are dying needlessly because the coal mines lack proper dust control. Anthraco-silicosis (miners' asthma) and its possible prevention.

SUPPOSE some one were to come up to you and tell you that the chances were one to four that you were suffering from an incurable disease that would slowly but surely kill you?

You would probably say that this person was crazy.

Suppose this same person went on to say that if you continued working at your present trade for a long enough period, you would be one of the *nine out of every ten* to be stricken with this incurable disease?

If these questions didn't floor you, you might somehow find the strength to ask this insane person what grounds he had for his statements. And, if you happened to be a hard-coal miner, he could cite the indisputable authority of Public Health Bulletin Number 221, published by the United States Public Health Service in December, 1935, under the imprint of the United States Treasury Department.

Buried in the mass of graphs and statistics in this bulletin is the information that twenty-five per cent of the 150,000 hard-coal miners in Pennsylvania are suffering and dying from *anthraco-silicosis*, commonly known in mining communities as *miners' asthma*. Furthermore, this bulletin indicates that of the miners who achieve twenty-five years of service in the mines, ninety per cent receive their tokens of gratitude in the form of anthraco-silicosis.

Anthraco-silicosis is a type of silicosis contracted by coal miners. The cause of all silicosis is silica-laden dust. Coal mining is one of the 150 industries listed by the United States Department of Labor in which silica dust is found in hazardous amounts. A total of one million workers are employed in these industries, which include, among others, quarrying, foundry work, glass and abrasive making, metal polishing, and sand blasting.

The dust particles causing silicosis can be seen only under a microscope. An instrument has been perfected which makes it possible to determine exactly how many particles of dust are present in any given atmosphere. There are also chemical tests which enable us to learn what percentage of this dust is silica. With a knowledge of the concentration of dust and its silica content, it is possible to determine how hazardous a dusty trade is.

Silicosis is a disease of the lungs contracted in dusty trades by breathing silica-laden air. The microscopic silica particles reach the lungs and there set up an irritation and inflammation which causes the formation of small scars in lungs. These scars can clearly be seen when an x-ray picture of the affected chest is taken. Over a period of years, this seemingly harmless dust can so injure the lungs that the breathing function is severely hampered and finally destroyed. If you were to put a pinch of arsenic in your coffee every morning for a time you would at least know that you were committing suicide. Going down into a dusty mine, day after day for years on end, brings about exactly the same final result, if not so dramatically. Miners, unfortunately, contract silicosis slowly and without knowing it. For a long time they have known that sooner or later miners' asthma will disable them, and that once the disease has taken hold there is no way of stopping it.

ANTHRACO-SILICOSIS has been given the name miners' asthma locally because the first and most prominent sign of the disease is shortness of breath. This gasping for breath, so characteristic of asthma itself, has led the miners to believe that anthraco-silicosis is merely a form of asthma; hence, the name. It may require fifteen years of exposure before the telltale symptom of shortness of breath appears.

A mine worker drilling through rock without dust control equipment. The air is thick with the silica-laden dust that causes the fatal anthraco-silicosis.

Once this symptom is present, the progress of the disease is often rapid. The miner may first notice that he becomes short of breath when he is doing strenuous labor. Little by little, he finds that he can do less and less heavy work. In most cases, not until he is actually gasping does he take to his bed. Then he begins to cough, spit up coal-black phlegm which is occasionally mixed with blood, and to have severe pains in his chest. In the late stages of the disease, tuberculosis of the lungs develops in about half of the patients. Weakness of the heart carries off the rest of them.

This susceptibility to tuberculosis is one of the deadly features of silicosis. Our United States Public Health Bulletin tells us that pulmonary tuberculosis is found in fifteen per cent of the early cases and in forty-three per cent of the late cases of anthraco-silicosis. In contrast, the prevalence of tuberculosis among the general public is less than one per cent. To indicate further the extreme susceptibility of these afflicted miners to lung diseases, our bulletin states that in ninety-two per cent of the workers with well-established anthraco-silicosis, pneumonia and other lung diseases developed.

Armed with this knowledge, we are ready to accompany the United States Public Health Service engineering experts on their survey of working conditions in the mines. The three mines chosen by the experts for us to visit were picked because they represent a cross section of average conditions in the normally run mines of the Eastern Pennsylvania hard-coal fields. It should be borne in mind that there are many mines that are not run on even the relatively low level of safety and efficiency of those here selected.

These three mines employ a total of 2,711 miners, all of whom were examined by United States Public Health Service physicians with x-ray and laboratory tests in the course of the survey.

One hundred and thirty-five miners who could no longer work because of disability from anthraco-silicosis, as well as numerous miners confined to tuberculosis beds in the state tuberculosis sanatorium, were also included in the study. Unfortunately, many of the miners who had worked in the mines for varying periods of years had migrated from the district during the depression, and, consequently, the *full* extent of silicosis could not be determined. For this reason, it has been necessary for the United States Public Health Service officials to abstract their findings on anthraco-silicosis and broadcast them through *The Journal of the American Medical Association* (Vol. 107, pp. 1179-85, 1936), so that physicians in all parts of the country might be aided in recognizing the symptoms of obscure ailments directly attributable to employment in dusty coal mines.

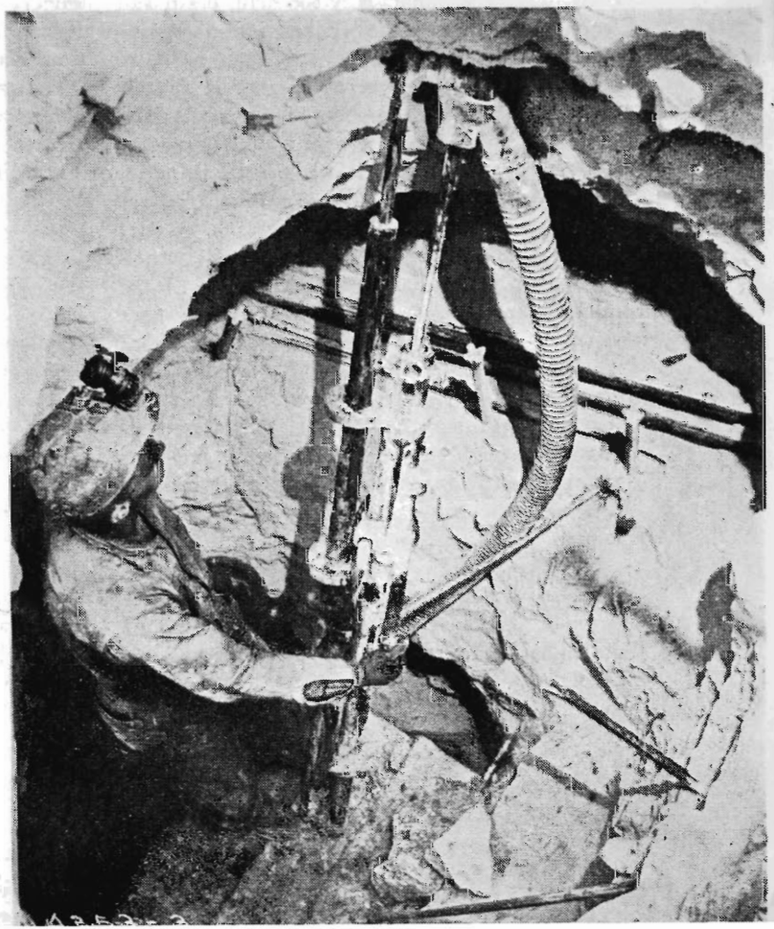
ON entering the mine shaft, one fact must be kept in mind: any concentration of dust higher than five million particles per cubic foot of air is dangerous, and, according to the best medical authorities, is capable of producing silicosis if inhaled for a long enough period of time. Any dust concentration lower than this will not produce silicosis, as illustrated by the fact that no case of anthraco-silicosis was discovered among 361 persons examined who worked in mining company offices, but not in contact with the dust.

A typical mine shaft has two hoistways, one through which the loaded mine cars are brought to the surface in cages; the other in which empty cars are lowered in the same manner. As we go down, we reach any one of a number of landings and we step out on a platform leading to a gangway or passage. These passages are driven at regular intervals into the rock or coal, and are generally large enough to permit the passage of a mine car. Along these dusty, poorly lighted passageways we stumble over rails, rock, coal, and debris. Timber reinforcements hold back loose layers of coal and rock. After passing through numerous mine doors and canvas hangings, which are part of the ventilating system, we come to the face, or breast, of the coal.

In this ill-ventilated, low-ceilinged chamber we watch the miner and his helper at work. The miner is drilling a hole in the face of the coal and the dust is flying. We take a dust count with our apparatus (actually samples of the air are taken, and the count is later determined in the laboratory), and we find that there are 568 million particles of dust per cubic foot in the atmosphere during this operation. We and the miner are breathing more than 100 times the safe limit of dust concentration. On turning to our guide for comment on the possibilities of reducing the enormous dust concentration attending dry drilling, he informs us that the mere substitution of wet drilling would cut the dust count from 568 million to 33 million particles per cubic foot of air, and that if further ventilation were installed this figure would fall to almost harmless proportions. If the dust count still remained above 10 million particles, masks and suction devices in addition to the above preventive measures would further reduce the dust hazard.

The miner has now inserted the explosive, and we stand at a distance, probably holding our ears while the charge is fired. According to our watch the miner re-enters the dust-filled chamber seven minutes after the firing. Our dust counter tells us that there are still 532 million dust particles hovering in the air around us. Again turning to the expert engineer, we learn that at least thirty minutes should have elapsed between the time of the explosion and re-entry into the poorly ventilated chamber. Blasting should preferably be done between shifts in order that sufficient time might elapse for the dust to settle and for clean, fresh air to re-enter the chamber.

Now the miner and his helper load the splintered coal into the mine cars. This is done by hand. Of all the work that the miner does coal loading is the most dangerous, since it has been found that three-quarters of the dust



The same miner drilling with dust control equipment. This picture was taken with the same camera and the same camera setting as the one on the opposite page. *(Both photographs courtesy of Kadco Corp.)*

which the miner inhales arises from this operation. Our dust counter tells us that there are 1,138 million particles of dust, or over 200 times the safe limit, in the atmosphere at this time. The expert engineer tells us simply that if this loading were done mechanically by machines suitable for the purpose, such as the scraper loader, the dust count would drop precipitously to 26 million particles of dust per cubic foot, and, further, that if the coal were sprayed with water before the mechanical loading began, the dust count would be reduced to the harmless concentration of 4 million particles.

WE now follow the loaded coal car through the passageways as it rolls along on the rails. In these passageways our dust counter reveals 17 million particles per cubic foot and we are informed that if the coal had been wetted before loading and if the cars had been sprayed after emptying, the dust count would drop to 1.2 million particles.

Proceeding on our way, we encounter the rock workers, whose job it is to blast passageways through the enormous thicknesses of rock so often encountered in hard-coal mining operations. Like the miners they too drill, blast, and load the rock, coal, and debris into the mine cars. Our dust counter tells us that there are 636 million particles per cubic foot in the atmosphere, and the engineer again states that what was true of loading coal is doubly true of loading rock, because of its higher silica content. Simply wetting the rock down would reduce the count to 32 million particles.

The work of the rock worker and tunneler is even more dangerous than that of the miner. At the end of fifteen to twenty-four years of labor, about three out of four rock workers develop anthraco-silicosis, and of those who work twenty-five years or more, ninety-two per cent get the incurable disease. Pulmonary tuberculosis is astoundingly frequent among men who may have spent as little as two or three years doing rock work in the mines.

All along the line we continue to meet various men who are occupied in doing the numerous jobs that have to do with the running of the mine, all of whom are more or less unknowingly filling their lungs with the deadly dust. As we emerge into the clear light of day and breathe the pure air again we remember what we were told on our entrance into the mine: *5 million dust particles per cubic foot of air* is the highest limit of dust concentration compatible with freedom from lung disease. We are glad to leave these hell holes in which the dust is as much as 200 times as thick as it should and *can* be.

OUR trip through the mine has taught us much. We have learned how and where the dust is produced and how by relatively simple methods the dust hazard could be considerably lessened. Engineers have told us that by installation of proper ventilation and dust-controlling apparatus silicosis could become one of the rarest of diseases. These facts have been known for years, but still nothing constructive is being done about the problem.

Occupational diseases are reportable by law in but a few states. Lobbyists for industrial insurance companies and the employers are paid huge sums to obstruct the introduction of any type of legislation which might save the lives of thousands upon thousands of workers at a small increase in operating expenses.

This problem involves one million American workers, and statistics are already at hand to show that what is true among the hard-coal miners of Pennsylvania is just as true of the zinc and lead miners of Missouri, Oklahoma, and Kansas, and among the granite workers of Massachusetts, where one out of every four workers has been found to be suffering from that incurable and slowly fatal disease, silicosis. Following the awakening of public sentiment by the tragedy at Gauley Bridge, West Virginia, where about 1,500 tunnelers are estimated to have contracted the disease, feeble steps in the direction of investigation of the silicosis hazard have been undertaken in some states. The few compensation laws that have been proposed are shamefully inadequate.

It is up to the trade unions and the masses of progressive people to remove this eyesore from the American industrial scene.

The hard-coal industry has been termed a sick industry. The miners will now know how sick it really is. If Governor Earle is really concerned about the welfare of the Pennsylvania miners, he will see that a thoroughgoing investigation is undertaken into the death-dealing working conditions of the mines. The coal magnates must not be allowed to maintain high profits at the expense of the lives and health of the men who produce the nation's coal.

Is Aspirin Safe?

Advertising has obscured the truth about this widely used remedy. Here are the facts concerning the drug and the answers to the questions most frequently asked about it.

THE experience of innumerable physicians over a period of years indicates that aspirin is the safest of many remedies sold for the control of pain. For the occasional headache, or for the relief of pain in cases where the cause has been ascertained, aspirin is a drug with which few doctors could readily dispense. It is of special value in relieving the distressing symptoms of rheumatic fever (which should not be confused with "rheumatism").

But just as it happens that a previously obscure and lonely person who inherits a fortune is promptly surrounded by a host of parasitic admirers, so also a simple, worthwhile drug having a very real place in the physician's armamentarium will sooner or later attract swarms of business men whose sole interest is commercial exploitation of the drug, let the results to patients be what they may.

The preposterous fictions incorporated in the advertising of drug firms remind one forcibly of Baron Munchausen, although that romantic liar suffers somewhat by comparison with our modern advertising copywriters. The salesmanship employed on behalf of aspirin has been no exception to the general rule. The story of acetylsalicylic acid (aspirin) would, however, be incomplete without a brief account of its introduction into this country.

The description of the United States as a land of opportunity is one full of meaning to the Bayer Company. Many years ago this company, then in Germany, attempted to obtain a patent on aspirin, as well as on the process of making it. The German government refused to grant either request. Attempts to obtain such patents were equally unsuccessful in other countries—until the company applied at Washington and was greeted with open arms. An absolute monopoly, the dream of every business man, was readily granted. In this way, it not only became illegal for anyone except Bayer to manufacture aspirin, but it also became illegal to import it from other countries.

What was the result of granting this monopoly? For seventeen years—the duration of the patents—aspirin cost American druggists forty-three cents an ounce. At the same time, druggists in France, Germany, Sweden and elsewhere paid only four cents an ounce. The public, of course, and not the druggist, eventually paid the difference. It does not require much mathematics to calculate that by this master stroke the Bayer Company was able to charge the American public eleven times what the identical product cost the people of other countries. Dutch Schultz might still be alive and Al Capone at liberty if they had utilized some such legal method of expropriation.

When the patents expired, the company, not satisfied with the booty, attempted to have them renewed. In this attempt, however, they failed; justice in such cases, it seems, can creep into the American courts after seventeen years. At present any drug firm may manufacture and sell aspirin. Furthermore, synthetic (chemically prepared) aspirin is just as effective and much cheaper than the natural product. However, the drug itself is so inexpensive that there is no profit in selling an adulterated or cheaper product. This fact makes even more apparent the highhandedness of the Bayer Company in charging forty-three cents an ounce when a handsome profit was being made elsewhere at a price of four cents an ounce.

For what is aspirin used, and what may be expected of it?

We have two vastly different sources of information concerning all drugs, including aspirin. One source is the advertising of the manufacturing firm, the primary purpose of

which is to sell the product. Since the history of the proprietary drug industry is so strongly colored with deceit, fraud, and the sale of deadly and harmful preparations, we may well exercise considerable caution in accepting its sales talk.

Another source of data on drugs is the Council on Pharmacy and Chemistry of the American Medical Association. This council, composed of chemists, druggists, and other highly trained specialists, has as its function the investigation of drugs which are placed on the market. Such investigation includes chemical analysis, biological assay, and careful checking of the effects of the drug on patients. The members of the Council have no personal interest, financial or otherwise, in condemning or recommending the products they examine. To say that they may sometimes make mistakes is simply to say that they are human beings.

It is most instructive to compare the claims made for aspirin by the commercial firms, especially the Bayer Company, with the opinions of the Council.

Some of the statements made by the Bayer Company for its products are that it "has the endorsement of the medical profession"; "any doctor will tell you they [Bayer tablets] are harmless"; "anyone can take Bayer aspirin"; and that it "cannot possibly hurt you." These claims are all false. Medical journals have repeatedly contained reports of serious individual reactions to aspirin, with some fatalities reported. It is quite true that such reactions are not common, but to the person who dies as a result of taking the drug, the mortality is, for practical purposes, 100 per cent. To state that aspirin is absolutely safe for all is to ignore the dozens of reports proving the contrary. We quote briefly from a report of the Council: "Acetylsalicylic acid may be and has been repeatedly shown to be potentially harmful, directly or indirectly, when taken indiscriminately." The report refers to the case of a patient who died half an hour after taking only one-half the recommended dose.

Concerning the question of "endorsement by the medical profession," it is sufficient to point out that the reports mentioned above could hardly be considered an endorsement, even by the most optimistic advertising writer.

We come now to the claim that aspirin will either "ward off" a cold or cure it, and we again refer to the opinion of the Council: "There is no reason to believe that the usual course or duration of the common cold is in any way altered by the administration of acetylsalicylic acid of any manufacture." This has been the experience of thousands of doctors who have treated hundreds of thousands of patients.

"Only Bayer is genuine. If you're told some other preparation is the same as Genuine Bayer aspirin, beware!" Contrast this claim with the Council's critical evaluation of many brands: "Practically all American brands of acetylsalicylic acid are of pharmacopeial standard. The only impurity likely to occur in any reputable brand is salicylic acid in mere traces only, which is of no practical significance whatever as a contaminant."

The Bayer Company admitted the falseness of its claims in 1934 when it was threatened with legal action by the Federal Trade Commission. This admission, however, has neither discouraged the company nor improved to any great extent the quality of its advertising.

In general, we may say that aspirin relieves pains and aches by deadening the patient's sensitivity. As we have frequently pointed out in previous articles, this may serve to conceal a condition requiring serious medical or surgical attention, and thus prevent the patient from receiving appropriate treatment. When, however, the cause of pain is known, aspirin may be safely administered in small doses to most people. A dose of five grains at a time, repeated occasionally during the day, can well be tolerated by the majority of adults. However, treatment with aspirin must be discontinued promptly if the patient is troubled by a feeling of heaviness or fullness in the head, or by roaring noises in the ears. Excessive perspiration is also a sign of sensitivity.

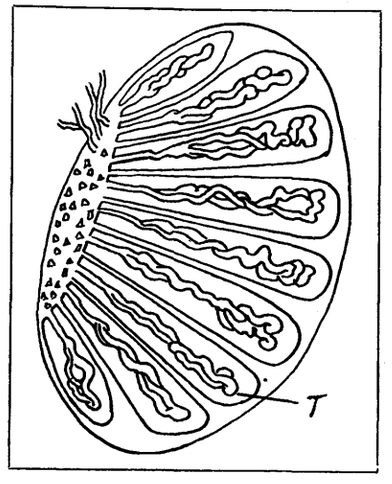
In ordinary doses, aspirin very rarely has any effect on the heart. Very large doses slow the pulse and weaken the heart action. Do not expect aspirin to have the slightest effect on a cold, except insofar as the pains and aches incidental to a cold may be somewhat relieved. Aspirin will neither prevent a cold nor shorten its course, regardless of how often these claims are made by aspirin manufacturers. Furthermore, it makes no difference whether aspirin dissolves in two-fifths of a second or twenty-five seconds; in any case it will have no effect until it has passed through the stomach and into the intestine, where it is absorbed into the blood.

Sex Rejuvenation

What are the causes of so-called "lost manhood?" Can sexual vigor be restored, and if so by what methods? A critical discussion of the "monkey gland" and similar operations.

NOT a day passes but some lady storms into court (and into the newspapers) demanding speedy release from what the editors delicately term "a kissless marriage." Not a doctor in the land but has been confronted by a patient who complains that he is sexually inadequate and wants to know what can be done for him. Every smoking-car gathering is likely to furnish its quota of stories about monkey-gland operations and their fantastic outcomes. The pulp magazines carry veiled and mysterious advertisements promising that this or that contrivance or pill will restore the pep and vigor of youth. Macfadden's *Liberty* has just published an article setting forth a certain rejuvenating method as a veritable fountain of youth. And only a few weeks ago readers of newspapers were treated to accounts of a recent report in *The Journal of the American Medical Association*, describing a new operation for restoring sexual vigor.

Behind all this lies the confused and tragic story of impotence—of the inability of a man to carry out sexual intercourse. The effects of this lack of sexual power on the man who suffers from it need not be described. He feels, if he is young, that he is being robbed of the opportunity of establishing and maintaining a happy family relationship, and of procreating his kind; he feels inferior; he broods; his work suffers; his interest in life flags; he often believes, and with some justice, that life is hardly worth the trouble of living. For those who have lived a full sexual life, and find that with the onset of age their power to continue it wanes, there is also usually a sense of great and irreparable loss. The impotent man demands, and rightly, that his doctor do whatever medical science makes possible for the relief of his condition. His demand for relief is worthy of all respect—it springs from one of the deepest impulses that motivate human life. Such a man may expect his doctor to distinguish the few genuine modes of treatment from the mass of quackeries and frauds.



Cross-section of a testicle. The sperm and hormone secreting cells lie between the tubules (T).

AT the basis of the confusion that surrounds the treatment of impotence is the mistaken tendency to regard it as a single disease, ascribable to a single cause. Impotence is not a disease, it is a symptom—like fever, or weakness, or a cough. It may arise from a number of causes, and, in any particular instance, the cause must be ascertained and the treatment directed at *it*.

These causes may be of either psychic or organic origin; the trouble may be solely in the mind of the patient, or it may be some actual physical impairment. Usually, in young people, it is psychic. With normal sexual apparatus, such as most young people have, erection will take place with proper stimulus, provided there is no inhibiting influence from the mind itself. The vast majority of

young men who find themselves unable to have intercourse suffer from some mental quirk which inhibits the erection. It may be some hardly conscious fear of venereal disease; it may be a hardly conscious sense of guilt or wrong-doing—a carry-over, perhaps, from bad childhood training which taught the boy to regard the sexual act as wrong or shameful. It may be over-anxiety to perform or fear of failure. And often, as the result of one failure, a vicious cycle is established—a fear of failure which causes new failures. Such patients may be cured by a mere recognition of their difficulty. Frequently such recognition alone is sufficient to effect a cure, although sometimes a prolonged psycho-analytical investigation is required to determine the nature of the subconscious inhibiting factor. A full discussion of the psychic aspects of impotence appeared in the September, 1936, issue of HEALTH AND HYGIENE.

Before discussing the impotence of old age and the operations designed to cure it, it may be wise to dispose briefly of the small group of younger impotence patients who suffer from some organic disease. Syphilis may injure the spinal cord in such a way that the delicate nerve fibers that control erection cannot function. Injuries to the spinal cord as a result of an accident may have the same result. Gonorrhea and other infections of the genital organs occasionally cause impotence. Castration or removal of the testicles before the age of puberty results in impotence, although castration in later life may not affect potency. All these possibilities have to be taken into account, but in general they are rare.

THE declining potency of old age is a problem that requires a brief analysis of the mechanism of erection and the origin of the sexual drive. Erection is brought about as the result of a stimulus, usually the thought or sight of, or contact with, a sexually desirable woman. The sexual drive of a man, however, is, in the first place, dependent on his physical constitution, and particularly on the secretions of the ductless glands. This subject is still not well understood, but it is certain that the secretions of several different glands play a part in producing the sexual drive. Certainly the secretions of the testicles and pituitary are involved, yet the exact role of each one is not clear.

Adult men, castrated either by accident or disease, do not always lose their sexual drive or potency, while certain diseases of the pituitary are associated with a loss of sexual drive.

A dramatic example of the effect of castration is given by Rowe and Lawrence. Briefly, a young man had had both testicles removed because of tuberculosis of the testicles. Eight years later he was very depressed, had given up his career, felt tired and lacked energy. He then fell in love, and married a woman who was willing to marry him in spite of her knowledge of his condition. He found that he could have a satisfactory erection and normal intercourse which satisfied his wife. Following this, his whole state changed; he became happy, energetic, and went back into business and made a success of it.

We give this case to show three things. First, that sexual desire is not dependent on the testicles in adult life; secondly, that the ability to perform the sexual act is not dependent on the secretion of the testicles, although, of course, to beget a child testicles are necessary; and, thirdly, to show the profound effect of a change in mental attitude, not only on a person's spirits, and also on his whole attitude towards life.

The reason for the association of the testicles with sex is obvious, and until recent years they were thought to be the sole source of the hormones responsible for the sexual drive. Many doctors also believed that a gradual atrophy (decrease in strength and function) of the testicles, which often occurs with age, was responsible for the impotence found among old men.

This explanation of the impotence of old age —namely, that such impotence is due to a lack of testicular hormone—is the basis of the two best-known operations for rejuvenation, the Steinach and the Voronoff operations. The latter is known everywhere as the "monkey-gland" operation.

It is clear that later knowledge shows that the theoretical basis of these operations is not sound. Of course, we do not mean that even in the adult testicular hormone has nothing to do with sexual desire and sexual performance, but rather that its importance is not clear and that it is certainly not the only or even the most important factor, since it is possible to get along entirely without it.

BOTH these operations endeavor to increase the supply of hormone, but by different methods. Eugene Steinach of Vienna based his operation on the fact that the testicles have a double function: in addition to the manufacture of hormone, they are also the source of the spermatozoa, those cells which are carried out in the semen and which are responsible for initiating pregnancy. He reasoned that if in some way the spermatozoa-creating part of the testicles could be killed, then the hormone-producing part would get additional nourishment from the blood-supply to the testicles, and would consequently produce greater amounts of hormone. It is a well-known fact, in physiology, that if the duct by which any gland discharges its product is permanently blocked, the gland thereupon ceases to function and dies. Steinach proceeded, on this basis, with an elaborate series of experiments on senile dogs, rats, and goats, in each instance tying off and cutting, sometimes on one side and sometimes on both, the seminal cord which carries the spermatozoa from the testicles to the outside. His results were encouraging, and he went on to human patients. His reports claim extraordinary restoration not only of sexual power, but of general bodily health and strength as well.

The operation has since been performed on a large number of men in many countries, and many of the operators report a large percentage of successes. But the very claims made for the operation are too impressive to be believed.

It is not at all certain, moreover, that the cases of impotence which Steinach reports were due to the atrophy of age. A kind of mental illness which occurs frequently in men between fifty-five and sixty-five is practically always accompanied by impotence. More than half of these patients recover, and with recovery from the mental illness their potency returns. Some of the cases described by Steinach would in all likelihood fall in this group. Besides, the suggestive effect of such an operation is very great, and since psychic impotence in older men is not rare by any means, this would account for the recovery of some cases. Finally, we must point out that many surgeons have reported very discouraging results.

Dr. Voronoff of Paris also starts with the assumption that the impotence of old age is the result of an insufficient supply of testicular hormone, but he attempts to supply it in a much more direct manner: namely, to secure a testicle from another source and implant it directly into the patient. Like Steinach, Voronoff did his original work on animals and obtained very striking results. His most famous animal experiment involved a ram twelve years of age, corresponding to the age of eighty or ninety in man.

In proceeding to work on human patients, Voronoff encountered the expected difficulty, namely, that human testicles for transplantation were practically impossible to obtain. He therefore resorted to the next best thing, testicles from chimpanzees and monkeys. He removes the ape testicle under anaesthesia, and immediately, in the same operating room, grafts it into the scrotum of his patient. His reports on almost 500 ape-to-man transplants claim success, lasting over several years, in eighty-two per cent of the cases.

The Voronoff operation is open to the objection that grafts of any tissue from one human being to another practically always fail —the graft dying in a short time. Grafts from another species, even as closely related to man as the ape, universally fail to live. There may be some temporary benefit from the amount of hormone present in the tissue when it is grafted, but all effects from the graft itself will disappear within a few weeks. This objection is enough to throw out Voronoff's work with ape glands entirely. It is conceivable that human testicle grafts might live and have some effect in a very few cases, but the difficulty of getting human testicles, and the likelihood that the graft will fail, rule the method out as a practical procedure. As in the case of the Steinach operation, the suggestive effect of such a procedure is very great and probably accounts for most of the good results in human beings.

VERY recently, a third operation for restoring sexual vigor was reported in *The Journal of the American Medical Association* by a well-known New York surgeon. He works on a different basis, his theory being that many cases of impotence are not due to lack of hormone at all, but that most of his patients exhibited normal sexual desire and that their trouble is due to an impaired mechanism for producing and maintaining erection. Erection is produced by an inrush of blood into the organ. After the blood has entered the organ

(*Continued on page* 62)

The Vitamins

A, B, C, D, E, and G. The story of how these essential food elements were discovered, what they do for our bodies, and what we should eat to insure getting enough of them.

IT is universally recognized, except by a few cranks, that the body requires a sufficient *quantity* of food. Food is fuel. It gives us energy for work, keeps us warm, and enables children to grow. Likewise, everyone is aware in some way or other that the diet should include enough calories. Primitive people know through hunger and a feeling of weakness when they are not getting enough calories. More civilized people keep track of their calory intake by checking their weights. But there is more to diet than merely getting sufficient calories and maintaining proper weight. There are accessory elements in food which do not supply calories but which are nevertheless necessary to health and well being, and often to life itself. The lemon juice which cures sailors decaying with scurvy, the spoonful of cod liver oil which prevents ricket deformity in growing children, and the brewers' yeast which restores the patient who is wasting away with pellagra, add little to the quantity of food but they contain elements which make a vast difference in the well-being of the sufferer. It is these elements, negligible in quantity but vitally necessary, that we call *vitamins*.

The discovery of the vitamins was not the work of a single man, but rather the result of research over a long period of time by many workers in several countries, resulting in a slowly accumulating body of facts. In 1897 Eijkman, a Dutch physician who took care of patients in a prison hospital who were suffering from the disease called beriberi (a curious deterioration of the nervous system leading to paralysis of the legs), observed that hens in the prison yard, as well as the prisoners, often wobbled and collapsed from leg weakness. Both men and chickens lived on a monotonous diet of polished rice, that is rice that had been milled and purified. By accident, the hens were later given unpolished rice, that is, rice with the crust intact, and these hens recovered the use of their legs and became quite normal again. Following up this clue, the alert doctor cured his prison patients by the simple method of changing their diet from purified rice to the natural rice. Moreover, he produced the disease in hens at will by feeding them polished rice and then restored them to health by returning them to a diet of the whole-grain rice. It was evident that some substance in the rice-grain shell had the power of curing beriberi. Dr. Funk, working in England, was eager to discover the chemical composition of this substance, and in the course of his work he mistook it for a type of compound called amine. Consequently, he named the essential element "vitamine." This aspect of Funk's work was later disproved, but the name "vitamin" has remained. Since Funk's work a vast amount of research has revealed other vitamins which for lack of chemical identity have been named after the letters of the alphabet: A, B, C, and D. More recently two other substances called E and G have been described.

Professor Hopkins of England set the standard for vitamin research. He devised the technique of feeding white rats on a purified diet of milk protein (cheese), starch, sugar, lard, water, and salts. By weighing the rats daily he was able to tell how they thrived. Although this purified diet contained enough calories, all the rats who were fed on it lost weight and sickened. However, when a spoonful of milk was added to their daily ration, they began to gain weight steadily and to grow lively again. Thus, Hopkins demonstrated that milk contains a substance essential to growth.

In 1909, McCollum, a prolific American investigator, found that only the fat from milk was necessary to make the rats grow, and that in the absence of the fat the rats developed a severe inflammation of the eyes which resulted in blindness. The essential substance in butter fat which these experiments indicated is now known as vitamin A. Later this vitamin was found in other fatty substances such as egg yolk and cod liver oil.

Professors Mendel and Osborne, two other American pioneers in nutrition, got even better results than McCollum when they added skimmed milk to the butter fat in the diet of their rats. Thus, the existence of a new factor was established, a factor which was called vitamin B. This vitamin was found in a number of foods. Yeast is especially rich in it, and it was its presence in rice polishings that cured Eijkman's prisoners and hens of beriberi.

By means of this technique, or modifications of it, any food substance can be added to or subtracted from a basic diet, and the effects on experimental animals studied. Other workers have extended the experiments to guinea pigs, puppies, and even to children during war blockades and in institutions. In this way vitamin C which cures scurvy and vitamin D which prevents and cures rickets were also discovered. A great deal of research in this field is being carried on by university scientists and commercial laboratories in all parts of the civilized world, and efforts are constantly being made to refine and identify these vital substances and to discover their action on the body. So far, only one, vitamin C, has been chemically identified and made synthetically.

A GREAT many claims are made for vitamins by commercial houses selling vitamin-containing products. These claims, however, frequently have little or no basis in fact. The public has been made vitamin conscious, which is as it should be, but intelligent people should learn to distinguish what is sound fact from what is merely sales talk.

Let us first consider vitamin A. Green plants under the influence of sunlight produce a substance called carotene. It is this substance which is responsible for the yellow color of butter and carrots. The animal body has the power to convert carotene into vitamin A, and a cow living on good green grass will give vitamin A in its milk. In the summer, when green grass is plentiful, cow's milk is rich in vitamin A. In the winter, however, milk is a poor source of this vitamin, and the diet of children must be supplemented with other sources of vitamin A, such as cod or halibut liver oil. The oil from these fish derives its vitamin content from the carotene in the green ocean plants on which the fish live.

Vitamin A does not dissolve in water, but it is very soluble in oil. This is why it is found in milk, cream, butter, and fish-liver oil. Chemists are able to extract it from these foodstuffs and concentrate it, but its chemical formula for synthetic production is still unknown.

However, not all fats contain this vitamin. Poor people do not depend on butter and cream for fat in their diet, but rather on the cheaper fats such as lard, margarine, and olive oil, which unfortunately are all deficient in vitamin A. Consequently, in the winter, when fresh green vegetables are scarce and expensive, and therefore cannot be used as an alternate source of vitamin A, the poor are likely to suffer from vitamin A deficiency.

What are the effects of vitamin A deficiency? In extreme cases the eyes become inflamed and the transparent surface of the eyeballs becomes opaque, resulting in blindness. Vitamin A deficiency is the commonest cause of blindness in children and young people, especially in the Oriental countries. We see very little of such blindness in America because nearly everyone here can afford enough food containing vitamin A to prevent these extreme consequences.

Vitamin A also affects the condition of other mucous membranes such as the linings of the mouth, stomach, intestinal tract, and urinary canal. In animals deprived of all vitamin A these membranes break down and allow infection to enter the body, for healthy mucous membranes are the greatest barriers to infections, just as a healthy, unbroken skin is also a protection. Accordingly, vitamin A has gained the reputation of being an "anti-infective" vitamin, and is widely advertised as such. This label, however, is misleading. There is no medical proof that amounts of vitamin A greater than those contained in the normal mixed diet will enable anyone to resist infections such as the common cold or tuberculosis. Advertisers try to create the impression that extra vitamin A is a protection against infection in the same sense as vaccination is a guarantee against small pox or diptheria. There is no basis for such a claim. It is true that if you go out in the winter without an overcoat you are likely to catch cold, but it does not follow that two overcoats are necessary or that the

second overcoat will be a special guarantee against a cold. This illustration applies as well to the growth-promoting benefits of vitamin A. Naturally, animals that are sick because of vitamin A deficiency are so wretched that they do not eat, and so lose weight, but one cannot therefore logically conclude that an excess of vitamin A stimulates growth. It would be as reasonable to conclude that because water puts out a fire, houses should be watered continuously.

OUR understanding of vitamin B is still incomplete. It is probably not a single substance, but a complex of vitamins. One fraction, B_1, has been crystallized and can be obtained in pure form. The distinguishing features of this vitamin are its solubility in water and its wide distribution in natural foods. The common sources of vitamin B are whole-grain cereals, yeast, and animal products such as lean meat, liver, milk, cheese, and eggs.

Anyone eating a standard American diet, which includes most of these foods, need have no fear of vitamin B deficiency. It is individuals or races who are compelled to live on a meager variety of foods, confined largely to a single-grain diet, who are most frequently subject to deficiency diseases.

The outer cover or husk of cereal grains holds the entire concentration of the B vitamin; the kernel itself contains none. Hence, milling or refining a cereal to produce a white flour robs it of its vitamin content. This is especially true of rice, the milling of which permits a clean separation of the husk and yields white, polished rice. In the densely populated eastern countries, where the people live almost exclusively on polished rice, vitamin B deficiency amounts to a virtual plague. In 1925, in the Phillipines alone, 18,000 people died of beriberi.

The refining of wheat does not completely separate the vitamin B from the white flour, so the use of whole wheat bread is not compulsory from a health standpoint, in spite of the alarming cries of the food faddists. Moreover, in a country such as the United States, anyone who can afford white flour can also afford supplementary foods containing ample vitamin B. The proof of this is that beriberi is practically unknown here. Whether the common cases of nerve inflammation and degeneration (neuritis) may be caused by a mild vitamin B deficiency is still a disputed point. Although there are scattered medical reports which state that increasing the amount of vitamin B in the diet is of benefit to neuritis sufferers, none of us need rush to the drug store for a package of yeast on this account. Likewise, the claims that vitamin B builds up appetite, improves growth, and cures constipation rest on very uncertain grounds. Large commercial interests concerned in the manufacture of yeast have used its rich vitamin B content as a selling point, but the claims they make have only the vaguest authenticity, if they are not absolutely false. There is tragic irony in the fact that where yeast *is* of proven benefits, that is, in the cure and prevention of pellagra, poverty prevents the sufferers from getting its benefits. Pellagra is a stubborn health problem among that part of the American population which lives largely on corn. It is a wasting disease marked by skin rashes, intestinal disorders, and a deterioration of the nervous system which sometimes ends in insanity. Milk, lean meat, and eggs, as well as yeast, will prevent and cure pellagra, but these foods are beyond the meager means of the sufferers. It is estimated that at least 200,000 Americans are ill with pellagra, the toll being especially heavy in the South among the textile workers and share-croppers. Of course, many of the unemployed are also afflicted.

VITAMIN C is known as the "anti-scorbutic" vitamin, because it affords protection against scurvy. This deficiency disease usually attacked sailors who were unable during long voyages to obtain fresh food. Even though crews started out on their trips in perfect health, large numbers of the men were sure to return weak, paralyzed, and often in a dying condition, with putrid breaths, decaying gums, and bleeding beneath the skin. Yet, if these men were given the juice of lemons or oranges, fresh meat, liver, or extracts of young, sprouting plants, recovery would quickly set in. It is the vitamin C in these foods that is responsible for the change.

The chemists have done a good job with vitamin C. They have not only isolated it in pure form, but they know its chemical composition and can make it synthetically. It is the first vitamin on which we can really lay our hands and with regard to which we know the actual facts. Vitamin C is found in abundance in lemon, lime, and orange juice. Canned orange juice is either very deficient or totally lacking in vitamin C. Tomato juice also contains vitamin C, but not as much as orange or lemon juice. Fresh meat and liver are also good sources, and there are lesser amounts in many fruits and vegetables and in milk. It is important to remember that cooking destroys vitamin C, and that therefore pasteurized milk is deficient in this important respect. However, it is necessary to pasteurize milk to kill the germs in it, so we must look to other foods to supply vitamin C. Those parents who bring up their children on proprietary (trademarked) foods must also remember the necessity of supplementing the diet with fresh fruit juices.

THIS brings us to vitamin D.

One of the most familiar types of deformity is that due to rachitis (rickets). Stunted, bowlegged, pot bellied, and pigeon breasted, we see the misshapen victims of rickets on every street of the poorer sections of our American cities. Twenty years ago, fifty per cent of the children of the poor were marked with these malformations. Today science has taught us that the cause of rickets lies wholly in the deficiency of vitamin D in the diet. Nature and industry have given us rich sources of this vitamin. Therefore, only ignorance and abject poverty can explain the continued existence of this disease in civilized countries.

Everyone has the power to produce his own vitamin D through exposure to sunlight. Our skin contains a substance called ergosterol which is converted into vitamin D by the ultra violet rays of the sun. Indeed, rickets itself can be healed by sunlight. Therefore, the present-day urge for exposure to the sun serves a sound and practical purpose. Unfortunately, in the winter the amount of sunshine we receive is very limited, but the rays of a mercury vapor lamp can be used as a substitute. Such a lamp produces the valuable ultra violet rays, but for most people this form of treatment is prohibitively expensive.

Most of us have to depend upon food for our quota of vitamin D. Like vitamin A this substance is also carried in an oily medium. Thus milk, butter, eggs, and liver, especially the codfish liver from which we get cod liver oil, are the best sources. The content of vitamin D in milk and its products is seasonal, depending upon the sunlight which acts on the cow's food. In the winter, therefore, milk is not a dependable source of vitamin D. The diet of all children and growing young people should be supplemented during the cold seasons with cod liver oil.

In the course of the investigations on the action of ultra violet light in rickets it was found that ergosterol, which can be gotten in large quantities from yeast, takes on powerful anti-rachitic properties when exposed to ultra violet light. The product, called viosterol, is therefore an effective agent in preventing and curing rickets, and although it is not vitamin D it may be used to supplement the diet of children, especially since not more than five drops a day is required and it is relatively cheap.

The function of vitamin D, viosterol, and sunlight is to regulate the mineral compounds of the body, especially calcium, which makes for the formation of healthy bone. Naturally, growing people are more concerned with this vitamin than adults. Nevertheless, deficiency of this vitamin in the diet of grown people may produce loss of calcium from their bones and weakening of the bone structure.

BEARING in mind what has been said, it is clear that a common sense diet will cover all our vitamin needs, and that recourse to commercial preparations will not be necessary except in special cases.

On the whole, it may be said that the only commercial vitamin we are obliged to buy is vitamin D. The cheapest form is cod liver oil or haliver oil, the cost of which in adequate doses should be about two cents a day. Viosterol, which is equally effective, but which lacks the nourishment and vitamin A content of cod liver oil, costs about twice as much. As has been emphasized, infants and young children should be given these preparations during the winter. Occasionally people who are compelled to live on restricted diets will also need the concentrated vitamin preparations.

Adults should eat a mixed diet containing all varieties of bread, meat, fish, eggs, liver, fresh vegetables, green salads, butter, cheese, and seasonal fruits. Prepared cereals and milk are optional. The main thing is to avoid fads in diet, and not to place reliance on special foods which are advertised to perform miracles.

If we observe these simple rules of diet and take advantage of bright days to bathe our skins in plenty of sunlight, our interest in the vitamins can become purely academic.

BE WISE - DON'T ALKALIZE

THE odds are overwhelming that you do not know where the town of Waukesha is. It isn't on the school map and it has probably never been used in a cross-word puzzle. Nevertheless, the town, which happens to be in Wisconsin, is famous for more than its Indian name. We became interested in Waukesha when we found that thousands of dollars are spent every week telling us in magazines and newspapers that Waukesha, Wisconsin, is the only place on earth where *White Rock Water* can be obtained in all its "mineral spring keenness."

How much this is supposed to mean to your health and well-being can be gathered by looking at the fresh, keen faces smiling at you in the advertisement and exhorting you to join them "on the alkaline side" by drinking *White Rock*. *Sal Hepatica*, likewise making use of the alkalizing slogan, shows you the contrast between the fresh face of the *Sal Hepatica* user and the stale face of the man with sagging cheeks, drooping eyelids, and limp ears—the fellow who never drank *Sal Hepatica*.

The "before and after" formula in advertising is as old as advertising itself. It is the fundamental motif for all proprietary medicine propaganda, and on it are based all the more complex and enticing tunes in the repertory of medicine advertising. The music is rather familiar by this time. There is the song of the vitamins with the Smith Brothers leading the chorus and the gurgling of Vitamin A cough syrup constituting the main theme. That the purpose of this music is merely to get coins into the pockets of the manufacturers is apparent from reading the article on vitamins elsewhere in this issue. Then there is the wind section of this same orchestra, piping the praises of mineral water cathartics and effervescent tablets which heal, soothe, and calm by alkalizing—"Come over to the Alkaline side"; "Be Wise—Alkalize"; "Be modern—use the laxative that combats acidity." In short, the alkalizing slogan has become a universal formula in the sales jargon of proprietary medicine frauds.

It appears from this jargon that nothing is more important than alkalinity. Alkalize and good health is yours. Alkalizing will rid you of that dark brown taste, free you of that foggy feeling, and stop your jitters after a hard night. *White Rock* pulls you over on the alkaline side, *Sal Hepatica* combats acidity, *Alka-Seltzer* will relieve indigestion and head-

"Come over to the alkaline side," say the advertisements in magazines, subways, street-cars, and over the radio. We say "Come over to the common-sense side." The common-sense side of this page is at the left.

ache due to acid condition. It all sounds vaguely persuasive, but the truth is it is just so much preposterous, harmful, and expensive mumbo-jumbo.

The idea of the "alkaline side" goes back to 1877 when a young German physiologist, Frederich Walter, found that by introducing varying amounts of hydrochloric acid and other acids into the stomach, death would ensue. He noted that the chief effects of the introduction of the acid, very rapid and deep breathing, became apparent fifteen minutes before the animal died. By injecting an alkaline (base) solution such as sodium bicarbonate into the veins of the rabbit, he was able to prevent a fatal ending. A few years later, another physiologist noted that the symptoms of diabetic coma greatly resembled those of the acid intoxication produced by Walter. The most striking of these symptoms was the deep and rapid breathing. It was then observed that similar symptoms were present in the last stages of kidney disease—so-called uremic coma. Following these fundamental and extremely important observations, scientists in every country began to study the role that acids and alkalies play in the physiology of life.

THESE studies show that in order for an organism to remain in a state compatible with life, the reaction of the inner fluids of the body must be slightly alkaline and that any appreciable deviation from this physiological reaction is disastrous. The inner fluids include the blood, lymph, and the tissue fluids that bathe all the cells of the body. Nothing is more constant in the life of an organism than the reaction of these inner fluids, and a change in reaction either to the alkaline or acid side will cause death.

This remarkable regulation in the reaction of the inner fluids is achieved by means of complex physical and chemical changes. The regulating mechanism depends upon the presence of an alkaline substance, sodium bicarbonate, in the blood, lymph, and tissue spaces. When an acid is introduced into the body and absorbed into the blood and tissues, it is at once neutralized by the bicarbonate that is available everywhere in body tissue fluids. This alkaline bicarbonate constitutes what is known as the "alkaline reserve." Because it can neutralize acid it is also known as a "buffer substance." Besides bicarbonate there are other buffer substances available in the body for the neutralization of acid. One of these is the protein material that is present in all living cells. The bicarbonate is most important, however, because it is present in relatively larger quantities and reacts more quickly than the other buffer substances. Accumulation of acids can, therefore, be completely neutralized by the bicarbonate of the blood, lymph, and tissue fluids present in all living beings. All foreign acid is converted into harmless alkaline salts which are either excreted in the urine or broken down into carbon dioxide which is then expelled by the lungs in breathing.

The kidneys also play an important part in preventing the body from being overwhelmed by large amounts of acid. When acid has been neutralized by bicarbonate, the body's alkaline reserve, or supply of bicarbonate, is diminished, and after the acid invasion has been overcome it is necessary to restore the lost bicarbonate. This the kidneys do automatically in the normal course of their function by excreting ammonia in the urine.

The alkaline reserve is also maintained at the optimum level by the foods and fluids that we eat and drink. The three basic foodstuffs are carbohydrates, fats, and proteins. The first two are completely transformed through oxidation into carbon dioxide and water, which are excreted by the lungs and kidneys. These foodstuffs, therefore, do not ordinarily affect the acid-alkali balance, or the bicarbonate content of the blood and tissue fluids. In the utilization of protein foodstuffs, however, certain acid compounds are produced. Some of these are oxidized into the waste products, carbon dioxide and water. Others are neutralized when they combine with the bicarbonate of the blood and tissue fluids and are then excreted in the urine.

Among the most common acid-producing foods are meats, fish, eggs, bacon, bread, corn, rice, and prunes. The most important alkali-producing foods are nuts, fruits, vegetables, and milk. In the average well-balanced diet, sufficient amounts of buffer substances are furnished to maintain the alkaline reserve at its most desirable level. Even when the diet is extremely one-sided, as, for instance, when it consists exclusively of either acid or alkali-producing foods, the kidneys, with their wonderful ability to restore alkaline bicarbonate to the body, are able to maintain the acid-alkali balance at a constant level.

IT is clear, then, that the body possesses a highly complex regulatory mechanism by which the reaction of the blood and tissue fluids is maintained constant. The first defense against invading acid is neutralization by the buffer substance, especially sodium bicarbonate. Professor Peters and Van Slyke have calculated that there are sufficient buffers or alkaline reserve in the body to neutralize nearly one quart of a 3.5 per cent solution of hydrochloric acid or a 5 per cent solution of sulfuric acid, before acid intoxication will appear.

It is obvious that the ordinary healthy person does not have to fear acid intoxication or acidosis. Nothing that we eat or drink can ever furnish a volume of acid that will endanger our acid-base balance. It is only by willfully drinking a large volume of acid or taking tremendous amounts of certain acid drugs that the alkaline reserve can be threatened.

In certain specific diseases, however, acidosis may occur and when it does, often causes the death of the patient. Two such diseases are diabetes and severe kidney disease. In neglected cases of diabetes, acids are produced and accumulated because the body cannot manufacture enough insulin to burn up the acids. In kidney disease, the kidney loses its power to excrete acid and manufacture alkali. The other conditions in which acidosis occur are starvation, and vomiting and severe diarrhea, especially in children. *These are the only diseases or conditions in which acidosis occurs.*

Acidosis is recognized by distinct signs and symptoms. The most prominent and characteristic symptoms are rapid and deep breathing. The patient with acidosis is either prostrate or in coma, and soon dies if emergency treatment is unsuccessful. In acidosis, physicians administer bicarbonate solution, salt, sugar, and, in the case of diabetes, insulin.

The symptoms of acidosis and its medical treatment are a far cry from the advertising gibberish that insults our intelligence daily. Fogginess, loss of pep, jitters, and a dark brown taste in the mouth are *not* symptoms of acidosis. These symptoms may be caused by any one of a hundred ailments, including such serious diseases as pulmonary tuberculosis, typhoid fever, ulcer of the stomach, and the various nervous diseases.

Advertisements for proprietary foods and medicines have always been remarkable as artful frauds, but in the exploitation of acidosis our gifted advertisers have surpassed themselves. *White Rock* is a simple mineral water that tastes and acts like ordinary vichy water. In some people, it may have a mild laxative effect. It will not pull you over to the alkaline side, because you are already there and you don't need any lift in that direction. *Sal Hepatica* was discussed in the August, 1936, issue of HEALTH AND HYGIENE. It is a crude cathartic, the active ingredient of which, Glauber's salt, is now chiefly used by horse doctors. It does not combat acidity because, in the first place, acidity is neither a cause nor a result of constipation, and, secondly, if it were, Glauber's salt would be the last thing in the world a physician would use to combat acidity. *Alka-Seltzer* is the boldest of all the frauds. It consists of aspirin compressed into an effervescent tablet, and therefore has all the exalted properties of an aspirin tablet dropped into a glass of seltzer water. As *Alka-Seltzer*, however, it relieves or cures colds, headaches, neuralgia, rheumatic fever, dissipation, over-indulgence, sour stomach, heart burn, fatigue, nervousness, sleeplessness, alcoholic excess—all of which, if we believe the advertisements, may be caused by excess of acidity or deficient alkalinity. This, as we have seen, is nonsense. These symptoms are caused by many acute and chronic diseases in which acidosis plays no role whatsoever. We, on the staff of HEALTH AND HYGIENE, get headaches, heart burn, and fatigue from looking at the *Alka-Seltzer* cartoon advertisements and not because of acidosis.

The last offender that we shall consider is *Luden's Cough Drops*, the ones with an "alkaline factor added." When we have said that they are simply candy drops, slightly mentholated, we have said all that is necessary. The alkaline factor exists only in the imagination of the man who wrote the advertisement.

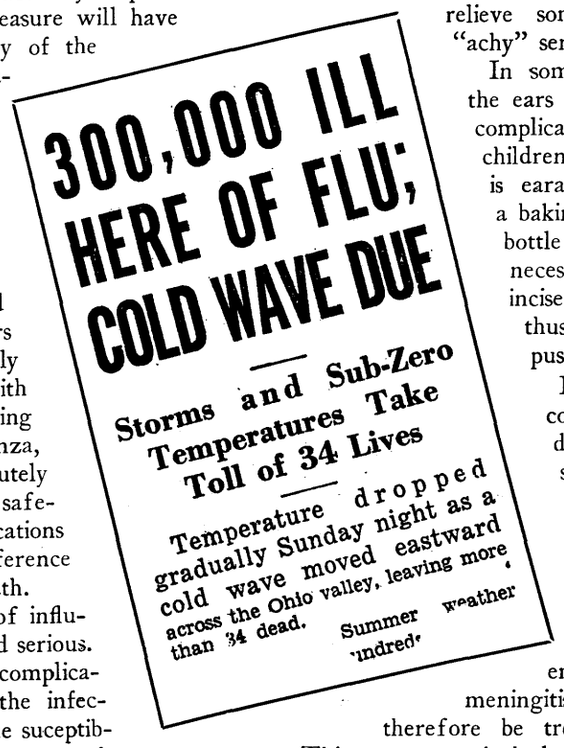
In previous issues of HEALTH AND HYGIENE it has been pointed out that colds and the grippe are not caused by acidosis, as is often claimed. "Alkalizing" the way the advertisements for medicines, cough drops, or what not urge you to do, will not alkalize you. And even if these products did alkalize they would not prevent, relieve, or cure colds or the grippe. These diseases are caused by bacterial organisms, and until we have a real preventive or cure the proper treatment is plenty of rest.

(An article on so-called "acid indigestion" will appear in the March issue.)

GUARD AGAINST INFLUENZA!

An epidemic is sweeping the country. Because of the timeliness of the subject we are reprinting this advice which appeared in an article in a recent issue of HEALTH and HYGIENE.

SINCE influenza is apparently caused by a germ which is coughed, expectorated, or sneezed into the air, infection can be prevented only by avoiding exposure. In large communities this is practically impossible. An effective preventive measure will have to await the discovery of the germ and the preparation of a vaccine from it. In the meantime it should be understood that influenza is an infectious disease and that anyone suffering with it should be isolated from other members of the family, especially children and adults with chronic ailments. During an attack of influenza, rest in bed is absolutely imperative. It is a safeguard against complications and may mean the difference between life and death.


300,000 ILL HERE OF FLU; COLD WAVE DUE

Storms and Sub-Zero Temperatures Take Toll of 34 Lives

Temperature dropped gradually Sunday night as a cold wave moved eastward across the Ohio valley, leaving more than 34 dead. Summer weather ...ndred...

The complications of influenza are numerous and serious. The most common complication is extension of the infection to the sinuses. The suceptibility to this complication may be reduced by refraining from blowing the nose hard. Don't snuff ephedrine or antiseptic jellies. The nasal antiseptics on the market are either without value or harmful. Ephedrine solution will give some relief from the congestion of the nose. The ephedrine should not be combined with oils or antiseptics as these tend to irritate the already inflamed mucous membrane of the nose. The best thing is a one per cent watery solution of ephedrine, two or three drops of which are dropped into the nose on each side, with the head extended well back. Repeat this every hour or two.

If infection of the sinuses has occurred, hot or cold compresses, depending on the person, will often give relief. Two or three tablets of aspirin every three or four hours will help check the sinus pain and also relieve somewhat the general "achy" sensation.

In some cases infection of the ears may be an important complication, especially in children. The first symptom is earache. Dry heat from a baking lamp or hot water bottle will give relief. If necessary, a physician will incise the ear drum and thus permit drainage of pus.

If there were the only complications of flu, the disease would not be so serious. Unfortunately, however, other and more dangerous complications can occur, such as lobar and bronchopneumonia, empyema, heart disease, and meningitis. Influenza must therefore be treated with vigilance. This means rest in bed throughout the period of fever and for three or four days thereafter. It also means care by a physician, for only he can detect the complications and treat them effectively. The duration of convalescence will always depend on the severity of the illness and the number and severity of complications. Work should be resumed only after physical and mental vigor have returned.

The cold and influenza are important public health problems. Physicians and investigators engaged in research on these diseases should be adequately provided with funds by the government to carry on their important work.

Goiter - A Gland Disease

The thyroid gland has been called the "accelerator for the body engine." A description of the ailments resulting from thyroid maladjustment and their proper treatment.

ANY enlargement of the thyroid gland is commonly called a goiter. The thyroid gland, which normally weighs about an ounce, is located in the lower part of the neck just above the top of the breast bone. It consists of three portions—two of which (the lateral lobes) lie to the right and left of the trachea or windpipe, and a thin connecting strip which passes in front of the trachea just below the Adam's apple. The thyroid gland is composed of many thousands of little grape-like clusters of glands which can best be seen under a microscope. These little glands manufacture very important chemical substances which are distributed to all the tissues of the body and which stimulate their growth and metabolism. Children cannot grow without this thyroid secretion, nor can adults have a properly regulated body metabolism without it.

It requires much energy to maintain the human body at blood temperature and to keep the heart, muscles, and other organs working. It also requires energy to build the tissues of the body. All this energy is derived from the food we eat, and the process by which this food energy is turned into heat, work, and flesh is called *metabolism*. Any process of burning or combustion requires the presence of oxygen, and the body burns its food in the tissues with oxygen. This oxygen is brought to the tissues from the lungs, where it is removed from the air we breathe. Thus, metabolism is similar to the burning of gasoline in an automobile engine. The amazing thing about the human body is that it can "burn" its "gasoline" at a very low temperature by the help of special substances called enzymes. The amount of "burning," that is, the body metabolism, is adjusted chiefly by the thyroid gland secretions. In other words, the thyroid gland is the "accelerator" for the body engine.

From the above description it should be clear that the amount of oxygen the body uses in a given length of time will be a measure of the metabolism. This fact is the basis of the so-called basal metabolism test, or breathing test, of which almost everyone has heard. In this test the metabolism is determined under *basal conditions*, which simply means that the patient has had a good night's rest, has done no work, has taken no food for breakfast, and lies quietly during the test. During the test the patient breathes through a tube which is connected to a tank of oxygen containing a gauge for recording the amount of oxygen used during the test. With standards for people of the same age, size, and sex the doctor can decide whether the metabolism is normal, high, or low.

If the basal metabolism is high it is in most cases a sign that the thyroid gland is overactive. If this is the case, too much energy is being produced, and the person feels hot and loses weight because he is burning up his own flesh for fuel. If the thyroid gland is underactive the person feels cool and puts on weight.

The basal metabolism test has been described so carefully because it is the chief laboratory test in the diagnosis and treatment of the different kinds of goiters and thyroid diseases. There are three common diseases of the thyroid —simple goiter, myxedema, and hyperthyroidism (exophthalmic goiter).

THE simple goiter shows itself as an enlargement of the neck, usually without producing any symptoms. At times, because of its size, it may press on the trachea (windpipe) and cause trouble in breathing. It occurs in those geographic sections where there is not sufficient iodine in the food and water. When there is lack of iodine in food the gland attempts to compensate for this lack by enlarging.

In the United States the so-called goiter belts are in the Great Lakes area, but many cases of simple goiter are found throughout the entire northern half of the United States. In these areas iodized salt in place of plain salt has been successfully prescribed in the treatment of simple goiter.

Naturally, a large goiter is not a pretty object, and may often cause a great deal of unhappiness, particularly in women. The question of whether or not an operation should be performed therefore arises. In the first place, once the gland is enlarged, the taking of iodine will not generally reduce its size. Therefore, the only way of reducing its size is by an operation. If the goiter presses upon the trachea an operation is necessary. Otherwise, the only reason for performing the operation is to improve the patient's appearance.

Myxedema is a disease due to an underactive thyroid gland. When it occurs in children it is known as *cretinism*. Since cretins lack sufficient thyroid, or "accelerator," secretions, they are slowed up in all the processes of life—their growth is retarded, their teeth are slow in appearing, their bodies are not warm enough, their minds are not alert, and their movements are sluggish. If they are not treated with thyroid (a medicine derived from the thyroid glands of animals) they will grow up to be stupid and deformed and will probably die before reaching adulthood. If they are treated early enough they can grow to be normal adults and useful members of society, though they will probably have to continue taking the thyroid medicine all their lives.

The symptoms of myxedema as it occurs in adults are stoutness, sluggishness in motion and speech, coarse, dry skin and hair, cool hands and feet, and a preference for hot rather than cold weather, since in this condition the body produces little heat of its own. The patient usually sleeps a lot and is subject to periods of mental depression and excitement. Any diagnosis of this condition must be confirmed by a basal metabolism test.

When the diagnosis of myxedema is accomplished by means of a doctor's examination and a basal metabolism test, effective treatment is simple. It consists merely in finding the amount of thyroid medicine needed to bring the metabolism up to normal. If this is done properly, all the symptoms just described will disappear. The exact amount of thyroid prescribed by the doctor must be taken, because overdosage will cause symptoms of hyperthyroidism, a dangerous condition which will be discussed later.

THE most serious kind of thyroid disease results from overactivity of the thyroid gland. This sickness is called hyperthyroidism, exophthalmic goiter, or overactive goiter. Since the action of the thyroid gland is speeded up in this disease, the symptoms are flushed skin, sweating, loss of weight, increased appetite, nervousness, rapid pulse, palpitation of the heart, and so forth. Usually the thyroid gland is enlarged as well as overactive. In a number of cases the eyes are prominent and staring (exophthalmos), but even in severe cases of exophthalmic goiter the eyes are often perfectly normal. As would be expected, the metabolism is higher than normal, and the diagnosis of "overactive goiter" should always be confirmed by a basal metabolism test. Other tests of the blood and urine should sometimes be made when the diagnosis is a difficult one. Often some sugar will be found in the urine, but this is not due to true diabetes and is of no importance. All cases of hyperthyroidism must first be treated by prolonged rest and iodine under a doctor's prescription. Mild cases can sometimes be cured medically if circumstances permit long treatment. Unfortunately, the poor cannot afford to remain absent from work, and are often forced to resort to operation simply because they must get out and earn a living again as soon as possible. They are exposed to the needless danger of operation because society will not support them and their families while the needed medical care is given.

Severe cases of hyperthyroidism are treated by an operation in which most of the enlarged thyroid gland is cut out. The operation should be done only by surgeons who have had much experience with goiters. It should never be performed until the sick person has been given iodine medicine and enough rest and sedatives to bring the metabolism down. This treatment before operation is very important, and in some cases requires several weeks or several months. Operations on incompletely prepared patients are extremely dangerous and show a high death rate. However, if the iodine treatment and the rest are given properly the operation is not a very serious one. In a decent, sound society any person requiring such an operation

(*Continued on page* 62)

Wax in the Ears

Partial deafness may be due to excessive secretion and accumulation of wax in the ear canal. An ear specialist discusses the causes and treatment of this troublesome condition.

INDIVIDUALS with an ordinary regard for body cleanliness often want to know what constitutes proper care of the ears. They would like to know in what manner and how deeply the ears should be cleaned, and also whether the formation of wax in the ears is an indication of improper care.

The formation of wax, or cerumen, in the human ear is a perfectly normal occurrence, very much as perspiration is a normal function. The wax is formed by special wax glands most of which are situated in the cartilagenous portion of the external ear canal. (The external ear canal is surrounded partially by cartilage and partially by bone.) Ear wax is brownish yellow in color. It is thick and oily in consistency, and forms a moist, protective lining for the ear canal. Normally, this secretion is not excessive, any more than perspiration, in the ordinary person, is profuse. When secreted in normal amounts, the wax accumulates in small masses on the canal wall, from whence it is dislodged by the ordinary movements of the jaw during talking or eating. Occasionally a tickling sensation is felt in the ear, and a small particle of wax which has not been entirely discharged is discovered near the outer part of the canal. When this happens the wax can be removed safely by inserting a thin cotton applicator gently into the canal. Such an applicator should never be inserted for more than a distance of half an inch into the ear. An applicator can be made by winding some absorbent cotton around the end of a wooden match stick.

A number of people are troubled by an excessive secretion of wax in the ears. The small masses of wax accumulate faster than they can be dislodged and this accumulation fills up the entire canal, becoming, as it is termed by the physician, "impacted," or pressed together. The individual with such a condition of impaction first complains of a dull feeling in the ear, and in time may become hard of hearing.

In many cases deafness will come on suddenly after washing or bathing the ears. This is due to the fact that the wax absorbs water and swells to an even greater volume than before. Such a sudden impairment of hearing usually causes much alarm, and a physician is often consulted.

People who are troubled by excessive accumulation and impaction of wax and who are frequently compelled to go to a physician to have it removed often wonder why they are thus afflicted. An excessive accumulation of wax may be caused in a number of ways. It may be that the wax is of an abnormal consistency, and is therefore dislodged with more difficulty than usual. Another common cause of impaction is improper cleaning of the ear canal, especially the habit of allowing a quantity of water or soap suds to enter the canal while washing, and then forcibly inserting a twisted portion of the towel into the ear passages to dry them. In this way the moistened cerumen is forced into the bony part of the canal, where it is retained. Eczema and repeated infections such as small boils in the canal, or running ears, may also be responsible for the accumulation. Finally, the accumulation of wax is sometimes due to foreign bodies in the ear, to which the cerumen adheres until an occluding (closing) plug is formed.

THE symptoms of occluding wax plugs are: a feeling of discomfort or fullness in the ear, head noises, unusual resonance of one's voice, and occasional attacks of dizziness when the plug is pressed tightly against the drum. The disturbance of hearing varies with the degree of occlusion. With complete occlusion the person may be almost deaf.

Treatment of the condition consists in removing the plug by forcibly syringing the ear with warm water. This should be done only by a physician. Sometimes the physician removes the entire plug with a small instrument—an ear curette—although, occasionally, when the wax has been present for a long time, and is therefore unusually hard, use of the curette may fail to dislodge the plug. In such cases the doctor usually prescribes a medicine that will soften the impacted wax. Diluted glycerine or peroxide may be used, after which the wax can usually be removed by syringing.

Prevention of the re-formation of the wax plug is a problem which often baffles the ear specialist. In cases where the underlying cause can be ascertained, treatment should be directed towards removing the cause. If it is found that the patient cleans his ears improperly when washing, as described above, then the correction of such a habit is advisable. If the affected person is exposed to a dusty or dirty environment, removal to cleaner surroundings will help, but, failing this, proper cleaning of the ears will be of aid. If the patient is afflicted with eczma or repeated ear infections, proper care of the condition will minimize excessive wax secretion.

However, in the majority of cases the underlying cause cannot be determined. When this is the case it is advisable for the individual to visit a physician about twice a year in order to have the accumulated wax removed. If the accumulation is unusually rapid it may be necessary to visit the doctor even more often than this. Home syringing or the installation of drops is of no avail. In fact, these methods may be harmful and should not be resorted to. Frequent syringing of the ear results in a waterlogging of the canal which may produce a chronic infection.

FOREIGN bodies, as well as wax accumulations, are often found in patients' ears. This is especially so among children who not infrequently insert various articles such as peas, beans, paper, pencil erasers, or buttons into their ears. In the case of adults the presence of a foreign body in the ear is usually accidental. Toothpicks, matches, rolls of paper, and cotton plugs are often introduced into the ears to relieve itching or pain, and then are not wholly removed.

The extraction of a foreign body depends upon its consistency, size, shape, and position in the ear canal. The surest method is syringing, as with wax. The foreign body can often be grasped with an instrument, but in some cases, when other means have failed, surgical removal is necessary.

The most distressing of all foreign objects that get into the ears are live insects. Only those who have had this unpleasant experience can appreciate the maddening distress it produces. The insect—flea, ant, cockroach, bedbug, or whatever it is—squirming about in direct contact with the ear drum causes an amplification of sound so great that it can cause the unfortunate victim to become panic stricken and hysterical. When an insect has found its way into the ear the first thing to do is to inject something that will kill the insect. Chloroform or a solution of bichloride of mercury is often effective. If a physician is not available at the time, a druggist can offer this form of first aid. When the insect has been killed it may be removed by syringing.

The hundreds of commercially advertised ear oils put out by proprietary medicine manufacturers for indiscriminate treatment of any and all ear conditions should never be used. They are of no help in any ear condition, and may do considerable harm.

Cosmetic Problems

Hair Tonics and Shampoos

For the many readers who have been asking questions regarding the care of the skin and hair, HEALTH and HYGIENE'S skin specialist will discuss such problems every month. All questions must be signed and accompanied by a self-addressed, stamped envelope.

NO matter how often it is pointed out that most advertised shampoos and hair tonics are of no special value, people keep on asking about this or that particular product. Each new brand that appears on the market is advertised in glowing terms, and there always seems to be a large number of people gullible enough to believe the extravagant claims that are made.

If your hair is very oily, the use of tincture of green soap is advisable; if it is dry, any of the face soaps may be used. There is nothing mysterious about the business of washing your hair. The collected dirt and dust in the hair and scalp must be removed, just as it must be removed from the face or hands, and the thing to use is soap and water. The cosmetics houses go to one of two extremes. Some claim that their particular soaps excel all others and bring about all sorts of miraculous results. Others try to make you believe soap is harmful to the hair. Both claims are silly.

Those who claim that soap is not the best thing for the hair are obviously trying to sell their soapless shampoos. *Venida Tonic Shampoo* claims to be "the world's foremost discovery so far." *Drene*, too, has much to say about the amazing discovery of a soapless shampoo. There is nothing at all amazing about soapless shampoos, and we insist that almost any soap will clean the hair satisfactorily and will certainly be cheaper than these substitutes. We do not know the exact ingredients of these two shampoos, but we do know that there are substances other than soap which can be used as cleansing agents, and which mix easily with water. Triethanolamine is such a substance. We do not yet know the possibility of danger in the use of small amounts of this chemical, but you will avoid risks if you use plain, everyday soap.

IN the field of hair tonics, *Wildroot Hair Tonic* assures you that it will prevent the premature thinning of your hair. There is no tonic that is able to do this, and the claim is just another exaggeration employed by advertising copywriters who have to think up ways of selling their products. Not only is *Wildroot Hair Tonic* unable to justify its many claims, but it also is capable of doing harm. The state chemists of Connecticut in their official bulletin, issued in March, 1935, disclosed the presence of arsenic in this tonic. A physician reported in the November 7, 1931, issue of *The Journal of the American Medical Association* a case of severe inflammation of the eyelids. The patient was unable to open one of her eyes after she had used *Wildroot*. Only a physician should prescribe a hair tonic. In most cases, people who buy hair tonics do not need them.

While on the subject of hair tonics, it might be advisable to give the formula for a cheap, effective prescription for the relief of scaly dandruff or excessively oily scalps. This prescription, which your druggist can compound for you, will be more effective and considerably cheaper than any commercially advertised tonic.

Resorcinol	2 drachms
Beta naphthol	10 grains
Olive oil	3 drachms
Alcohol (70 per cent)	8 ounces

Persons with blonde hair should use resorcin monoacetate in place of resorcinol, as the latter may produce an unnatural greenish color in blonde hair.

Apply the above lotion to the hair each morning and night. The lotion should be applied until the whole scalp is moist. It should then be rubbed in with the fingertips for from five to ten minutes. If the hair becomes too dry as a result of this treatment, rub in a little olive oil.

Consumer Briefs

As a regular feature, this department will give information on foods, drugs and cosmetics which make false advertising claims, or are dangerous, defective, or adulterated, or which sell for a price entirely disproportionate to the actual cost of the product. NJ (notice of judgment) plus the file number indicates that the information is derived from the Federal Food and Drug Administration; FTC, from the Federal Trade Commission; PR plus date, from a release of a federal agency.

Birconjel

THE Birconjel Corporation, Inc., whose product has been widely advertised for "feminine hygiene," has been charged with making a number of unfounded and exaggerated claims. The government claims that *Birconjel* is not reliable for the purpose advertised, that it may produce harmful results, and that, contrary to the company's statement, it has not received the approval of the American medical profession (FTC PR 2998).

* * *

Butter

NJ 25621 reports a fine of $50 and costs against The Borden Company, whose butter contained less than the legally required amount of butter fat. NJ 25659 finds the same company guilty of a similar offense.

Cudahy's *Sunlight Creamery Butter* had to be destroyed by the government because it was filthy and decomposed (NJ 25572). Another shipment of Cudahy's butter was found to contain less than the weight specified on the labels. Forty-six cases of butter were involved in this instance (NJ 25639).

Armour's butter continues to be found filthy. NJ 25503 reports the destruction of nineteen boxes, and NJ 25640 the destruction of twenty cases. The latter lot contained mold, insects, mites, tinfoil, and nondescript dirt. It was labelled *Star Quality Cloverbloom Butter*. If this is *Star Quality*, what is the plain variety like?

Fifty-eight boxes of Swift's *Premium Quality Brookfield Butter* were destroyed because they contained mold and putrid substances (NJ 25703). Other recent seizures of this company's butter have disclosed similarly decomposed and inferior productts.

A Lenient Judge

THAT justice is tempered with mercy in some instances is evident from a decision in a case recently reported by the Food and Drug Administration. Herbert D. Hollwedel of Rochester, N. Y., was found guilty of packing vinegar in second-hand arsenic barrels. The vinegar, naturally, became heavily contaminated with the dangerous poison. Hollwedel was fined $200—but the sentence was suspended. Perhaps the judge reasoned that it was too late to do anything for the people who had already used the poisoned vinegar, and so let Hollwedel off easily.

* * *

Essence of Mistol

A JUDGMENT was recently obtained against *Essence of Mistol* because the label did not indicate the amount of isopropyl alcohol present (NJ 25376). More important is the fact that this type of alcohol is potentially dangerous—a fact which was not mentioned in the notice of judgment, even though another report of the Food and Drug Administration, in discussing isopropyl alcohol, says that it is "barred from use in foods and of questionable safety in drugs." Apparently the questionable safety of this product did not interest the food and drug authorities in this particular case.

* * *

Canned Peas

LIBBY, McNEILL & LIBBY suffered the loss of 412 cases of canned peas which were found to be filthy. Besides peas the cans contained a varied assortment of worms and weevils (NJ 25673). A shipment of this company's tomato catsup was also condemned and destroyed as decomposed and unfit for use (NJ 25655).

Our Doctors Advise:

The doctors of the People's Health Education League, including specialists in almost every field of medicine, will answer readers' questions on health and personal hygiene. No letter will receive attention unless it is signed and accompanied by a self-addressed, stamped envelope.

Honey Krushed Wheat Bread

Detroit, Mich.

DEAR DOCTORS:

Enclosed you will find advertising matter for *Honey Krushed Bread*. You will note that it is recommended for constipation, and that it is endorsed by leading doctors. I would like to know your opinion of this product.—J. C.

Answer—We have no information about *Honey Krushed Bread* other than the fact that one of the "leading doctors" who has endorsed the product is a man named **Percival Lemon Clark.** In 1929 representatives from various medical groups went to Washington to protest to the Federal Radio Commission against certain types of quack advertising that were being broadcast over the air, and Clark was among these against whom the complaints were made. The opinion was expressed that Clark was a quack. Because of this Clark brought suit against one of the complaining groups for approximately a quarter of a million dollars damages. The case dragged along for more than three years, and when Clark was notified that the case would be forced to trial he withdrew the suit.

In the opinion of many reputable medical men Clark is wholly without scientific training, and practices absurd methods of treatment. Investigators who were employed by attorneys in the above-mentioned lawsuit discovered the following facts about Clark. In 1889 he was granted a degree of M.D. by the Bennett Medical College, an institution run by his father. For two years Clark practiced medicine with his father. During the next forty years Clark was engaged in gold mining in Georgia, the rubber business in Chicago, the clock manufacturing business in Connecticut and Illinois, the restaurant business in Chicago, the raising of sea-island cotton in San Domingo, the real estate business in Canada, the sale of autographic registers in Michigan, publicity and real estate in New Jersey, and work with a faddist medical organization in Denver. At present he conducts a "health institute" in Chicago.

Anything endorsed by Percival Lemon Clark is under strong suspicion. *Honey Krushed Bread* is undoubtedly no different from any other wheat bread. It is never necessary to have bread baked by a "secret formula." We advise you to be wary of all products advertised as recommended by unnamed doctors.

* * *

Prontosil

Manchester, N. H.

DEAR DOCTORS:

Will you please inform me about the effectiveness of the drug, *Prontosil*, in the treatment of streptococcic throat infections? I recently read in the newspapers that it was used with great success in the case of President Roosevelt's son.—H. J.

Answer—Few drugs have been introduced to both physicians and the general public with as much hullaballoo as *Prontolyn* and *Prontosil*. Within twenty-four hours after the newspapers reported that they had been used in the case of the President's son in Boston, doctors began to receive extensive advertising from the manufacturers. It was fine free publicity for the manufacturers of the drugs, but the public was given only those facts about the drugs which would present them in a favorable light.

Prontolyn (for use by mouth) and *Prontosil* (for injection) are coal-tar drugs which were developed in the laboratories of the *I. G. Farbenindustrie*, the German dye trust, and introduced into America by the Winthrop Chemical Company, its American associate. Reports describing the use of the drugs have been printed in foreign medical journals, but are only beginning to appear in the American medical press.

The drugs are for use in the treatment of certain streptococcic infections. The streptococcus germ is a common cause of infection of the breathing passages, including the sinuses. There are, however, two chief varieties of streptococcus germs, the *streptococcus hemolyticus* (blood-dissolving) and the *streptococcus viridans* (green, non-blood-dissolving). *Prontolyn* and *Prontosil* are for use only in the case of infection by the hemolytic streptococcus. They are of no use in most streptococcic infections of the heart, because in such in-

fections it is the viridans streptococcus that is responsible.

As yet there is no good reason for relying solely on *Prontolyn* or *Prontosil*. There is an effective serum for *streptococcus hemolyticus* infections which should be used in conjunction with these two drugs. Until they have been more extensively used and reported upon, and until doctors have thoroughly evaluated them, there will be many cases in which disappointment will follow the use of *Prontolyn* and *Prontosil*.

* * *

Fake Heart Remedy

Chillicothe, Ohio

DEAR DOCTORS:

Please give me your opinion on *Catalyn* as a remedy for various types of heart disease.—D. I.

Answer—The manufacturers of *Catalyn*, The Vitamin Products Company, of Milwaukee, Wis., have been accused of false and misleading advertising by the United States Food and Drug Administration. The company recommends *Catalyn* as a cure for a great number of diseases, but it is simply an out-and-out fake. Among other ingredients, it contains bran.

Heart disease should not be treated by taking any proprietary medicine of this type, nor, for that matter, by any form of self-treatment. We suggest that you put yourself in the hands of a physician in whom you have confidence or else consult the heart clinic of any large hospital near your home.

* * *

Crops of Boils

Waco, Texas

DEAR DOCTORS:

I am twenty-three years of age, and for about two years have been afflicted with boils on my neck, arms, and at the base of the spine near the rectum. My doctor has advised a diet in which there are no fried, canned, or spicy foods, and has also prescribed *Stannoxyl* tablets. He has told me me that he does not know the cause of these infections, and that the only way of treating them successfully is to take a number of injections until an injection is found that will make me immune.

Will you please tell me what I should do to rid myself of this annoying ailment?—K. B.

Answer—You are suffering from furunculosis (crops of boils). Boils, or furuncles, are acute infections of the skin caused by germs called staphylococci. These germs are practically always present on the normal skin, but it is only when the general resistance of the body is lowered that a series of boils occurs. Frequently the boils break out in crops in various places on the body.

It is also possible for local irritations such as constant rubbing or chafing of tight-fitting clothing against the skin to be responsible for boils.

For immediate treatment, cold, wet applications of boric acid should be kept over the infected spot continuously. If applied before pus has formed, treatment with x-rays are of great help, and may cause the boils to disappear without breaking down and discharging pus. Once pus has formed, the boil must be cut and the pus drained out.

Vaccine injections consisting of a suspension of dead staphylococci germs may help. *Stannoxyl* is not of much help.

At times, minor ailments of the skin may predispose a person to boil formation. If the injections do not help we suggest that you consult a skin specialist or the skin clinic of any reputable hospital. The best results are often achieved by building up the general level of resistance through getting plenty of sleep (eight hours a day or more), eating a well-balanced diet containing meat, milk, eggs, fresh fruit and vegetables, and resting and bathing once or twice a day.

* * *

Blood in the Urine

Helena, Mont.

DEAR DOCTORS:

For some time I have noticed blood in my urine. When I went to my doctor to find out about this condition he put me on a diet and gave me some pills that effervesce when put in water. Is this kind of treatment correct?—A. J.

Answer—In any case where blood is present in the urine it is extremely important that an accurate diagnosis be made. Blood in the urine may be the result of a number of conditions such as stones, t mors, tuberculosis, and so forth, and in order to determine the exact cause of the bleeding a complete investigation of the urinary tract, including x-ray studies and examination of the interior of the bladder, is necessary. This investigation should be performed by a physician who is a specialist in diseases of the urinary tract, that is, a urologist. If the services of a private urologist cannot be obtained, the work can be done in a genito-urinary clinic. After the investigation has been completed it can be better determined just what your treatment should be.

* * *

Anthrax Infection

Omaha, Neb.

DEAR DOCTORS:

I have recently gotten a job as a wool sorter, and have been warned about the dangers of anthrax. Would you please tell me how this disease can be detected and what the best form of treatment is?—F. L.

Answer—Workers in the hide-handling and wool-sorting trades are particularly exposed to this disease because it is transmitted to them from the skin or wool of anthrax-infected animals. Too often these are skinned or shorn for the market through ignorance or neglect.

Every worker in these trades should learn to recognize the "malignant pustule" of anthrax. It is a large dark-colored boil, usually occurring on the arms or neck. It is surrounded by a ring of tiny blisters, the whole lying within a wide area of firm, red skin. This type of boil should never be cut, because the bacteria enter the blood stream very easily. Early recognition is essential for treatment, which consists of the application of hot, moist dressings to the boil and the administration of anti-anthrax serum.

Prevention requires that infected hides and wool be kept off the market. Laws concerning the proper disposal of animals infected with anthrax should be strictly enforced, and hides and wool should be subjected to a sterilizing process. Unfortunately, all these measures require larger and more efficient health departments than we have at present.

* * *

Nearsightedness

Little Rock, Ark.

DEAR DOCTORS:

I am a college student, aged twenty. Until my second year in college my eyesight was perfect. Later, I began to have headaches and found it difficult to concentrate on my studies. I obtained glasses and received some relief from them. Today, however, when I do not wear my glasses distant objects appear blurred and indistinct. I should like to know if it is necessary for me to wear my glasses all the time, and if not, at what times I should wear them.—L. B.

Answer—From what you say, it is probable that your myopia (nearsightedness) is increasing. Such "advancing myopia" is more common in people younger than you and is hence often termed "school myopia." But it is sometimes seen in people as old as twenty-five, especially in those who have to use their eyes a great deal.

The disagreeable feature of this condition, once it is started, is that it has a tendency to progress. Your eyes should be carefully examined, with the aid of "drops," by a good eye specialist or in a good eye clinic to determine the exact extent of your nearsightedness. The glasses you get should fully correct your condition, and they should be worn all the time.

If in a year from now your nearsightedness has increased, the amount of close work you do may have to be curtailed.

There are many people who, having had glasses "sold" them, are wearing them unnecessarily. But if what you relate is correct, our impression is that your glasses ought to be worn constantly, except during sports, games, and so forth.

As for exercises for the eyes, there are none which are effective for nearsightedness alone. There are certain exercises with limited application, for use in cases of eyestrain due to weakness or lack of balanced activity among the various ocular muscles, but the effect that these exercises would have in your case would have to be determined by the doctor who examines you.

* * *

Are Aluminum Utensils Safe?

Janesville, Wis.

DEAR DOCTORS:

Is it true, as I have sometimes heard, that cooking in aluminum-ware vessels is a cause of cancer and other diseases?—P. J.

Answer—There is no foundation for the belief that cooking in aluminum vessels is a cause of cancer or any other disease. You may continue to use such utensils with complete safety.

Some cautious sources advise that food cooked in aluminum containers should be stirred with wooden or aluminum spoons. Others suggest that very sour (acid) or salty foods ought not to be cooked in aluminum pots, as chemical changes may take place. So far, no harmful effects have been found to be due to the use of aluminum utensils, and this metal is probably as safe as any.

* * *

A Correction

In answer to a question on Rheumatic Fever in the OUR DOCTORS ADVISE column in the December issue, it was stated that a child should be kept in bed for "two weeks" after the fever had subsided. This was an error. The statement should have read:

It is desirable to keep the child in bed for from two to six months, until all signs of rheumatic fever have disappeared. The disappearance of the signs of activity of the rheumatic infection can be determined only by a physician, who takes into account not only the presence or absence of fever but also the rate at which the heart beats, the blood count, the sedimentation test of the blood, and the electrocardiogram. A rheumatic infection may last for years before it quiets down, but after it quiets down prolonged rest is desirable. While this may sound like ultra-conservative treatment, nevertheless, in view of good results with this method of preventing recurrences, it should be strongly considered.

SEX REJUVENATION

(*Continued from page* 43)

three small muscles at the base of the penis, just behind the scrotum, tighten up and prevent the return of the blood, thus maintaining the organ erect. This surgeon claims that a large portion of the impotence of age is due to the weakening and stretching of these muscles, so that erection subsides quickly. His method is to make a small incision in the skin just over these muscles, and to pick them up and to shorten them by making a small fold in them. As a result, he says, a large proportion of his patients, previously impotent, have become capable of prolonged and frequent erection. This operation, of course, is a purely mechanical one; it has to do with the production of erection only, and has no claimed connection with general bodily health and vigor, as do those of Steinach and Voronoff.

What, in general, is the present verdict of informed medical opinion on these operations? Of the third, nothing can as yet be said—it is too new, and there has not been time to repeat it or to gather statistics. On the other two there is great difference of opinion. Reports range from the wildest enthusiasm to the most caustic condemnation of them as simple frauds. It may be said, however, that in this country, the vast majority of respected surgeons and endocrinologists (gland specialists) do not approve of them and will not perform them. If a questionnaire were sent to a large group of American doctors, asking them if they would recommend the operations for their patients, at least 99 out of 100 would emphatically reply "No." In this country work of this kind has fallen largely into the hands of out-and-out charlatans, such as the notorious Brinkley of Kansas, who performs his "goat-gland" operations indiscriminately on all sorts of patients with all sorts of complaints.

What, then, is the best course for the man who finds his sexual powers weak? First, to avoid all the advertised cures. Whatever good they do is purely the result of suggestion — that is, because the patient believes in them and wants them to work they may bring about a temporary improvement. Secondly, to get a sound medical diagnosis. At the basis of the trouble may be some psychic difficulty which can be solved with aid of a psychiatrist, some congestion of the prostate gland that will improve with massage and diathermy, or some general disease that will respond to medical care. Sometimes the trouble is a lack of understanding of the proper technique of the sexual act, which instruction will correct. Thirdly, to let his doctor decide which of the sound means at his command offer the greatest promise *in his particular case.*

GOITER—A GLAND DISEASE

(*Continued from page* 54)

would be given a long vacation with pay at a special rest home both before and after the operation was performed.

As we have said, many mild cases of hyperthyroidism do not need operative treatment. Such cases, however, require the care of a doctor and many metabolism tests. Sometimes the patient needs a change of job, a long vacation, or the care of a specialist in nervous troubles. All these are so expensive that workers and the unemployed are usually advised to have the operation. In some cases the symptoms may return after operation, and every person who has had an operation for an overactive goiter should have regular check-up examinations for many years afterward. Iodine medication for at least a year afterward is also necessary. Most clinics do not have the facilities to watch their patients for years after the operation.

One other kind of goiter must be mentioned. Occasionally an enlarged thyroid gland may be due to a cancer. Fortunately, this is a very rare kind of goiter. People with a small hard lump in a goiter or in the thyroid gland should have it examined at once by a doctor.

Even though the cause of hyperthyroidism is not known exactly, it is pretty clear that most cases appear during adolescence and at the menopause (change of life) in people who are nervous, high-strung, and unable to get enough time and money for happy relaxation and a well-ordered life. Many cases are associated with unhappy sex lives or the mental stress that comes from financial insecurity. It is safe to say that in a society with security and plenty for all the number of cases of hyperthyroidism would be greatly reduced.

Purely Personal (*Continued from page* 33)

received only one said that the idea was not a good one. It looks as if the March issue will go out to subscribers with the holes punched. However, there is still time for anyone who does not like the idea to send in a dissenting opinion.

IT HAS BEEN SUGGESTED by several people that we number our pages consecutively for each entire volume of six issues. We have decided to incorporate this method of paging with this issue. Thus, the present issue begins with page 33, the March issue will begin with page 65, and so on through June. This will simplify indexing, and be more convenient for those who keep their back numbers for reference.

WORKERS IN MANY TRADES write to suggest that we turn our attention to the health problems present in their particular industries. We are now at work preparing articles on the health aspects of the smelting industry and the printing trade, topics which were recently suggested to us by readers. Don't hesitate to let us know what sort of articles you would like to see in HEALTH AND HYGIENE.

THAT OUR INDUSTRIAL articles are well-received and widely read is evident from the number of letters we get from people who have found the information in them useful. A number of readers have let us know that they profited from John L. Spivak's article on the methanol hazard, in the December issue. One reader says: "I purchased your magazine one day because I noticed the title *Methanol—A Hazard in Sixty Trades.* As I work and handle this product daily during the winter months, I became very interested and read the article very carefully. After reading it I assure you I will never carry or handle the product *Zerone* again. It was all news to me. It sure is good to see a magazine have the spunk and fight to buck greed and selfishness in this way." Messrs. du Pont please take notice.

ALL DRUGGISTS DO NOT RELISH the level to which their business has fallen in the scramble for profits. One of them has forwarded us a copy of a letter he wrote to Dr. John L. Rice, Commissioner of Health, New York City. The letter reads:

"Dear Dr. Rice: When I entered the profession of pharmacy it was my earnest hope to give service to humanity in helping the medical profession in the alleviation of pain and the promotion of public health. What a disappointment it is to me to be compelled to sell all kinds of junk and to fleece the poor of their hard-earned money for the benefit of the patent medicine racketeers.

"You, as Commissioner of Health, investigate these frauds and quackeries with funds provided by the people of the City of New York. Why do you keep the findings of these investigations from the people and from the pharmacists who ought to know about them?

"You justly prohibit the sale of *Pyramidon* in drug stores because you found it detrimental to health. Why don't you forbid the sale of *Midol,* which is just as dangerous to human life?"

Respectfully yours,
(signed) Joseph Novick, Ph.G.
408 Howard Ave.
Brooklyn, N. Y.

COMMISSIONER RICE'S ANSWER to druggist Novick was short and not much to the point. Said Dr. Rice:

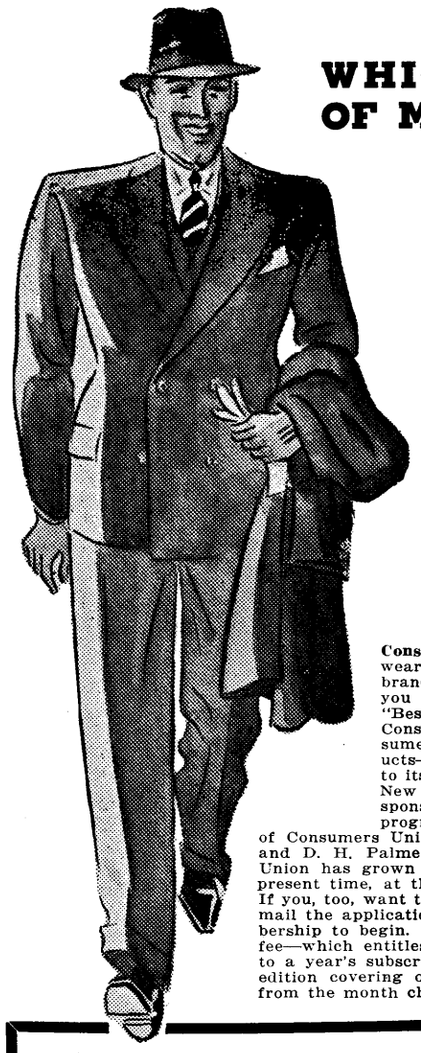
"Dear Mr. Novick: I have your letter of November 15th and appreciate your sentiments. The whole question of the sale of patent nostrums and the advertising made in conection with such sale is receiving careful attention by this department and by the Mayor. Your letter will receive careful consideration."

Very truly yours,
(signed) John L. Rice, M.D.
Commissioner.

THE ABOVE EXCHANGE of correspondence took place over a year ago. Mr. Novick's letter is still being considered, and *Midol* and other dangerous products are still sold at drug counters.

NEXT MONTH WE ARE starting a new department called *The Fraud of the Month.* Readers may select what they consider an outstanding fraud from either the Food and Drug Administration's Notices of Judgment or the Federal Trade Commission's Monthly Statement of Work, and send nominations in to us. We will select a product each month for exposure in *The Fraud of the Month,* publish the name and address of the reader who sent us the nomination and give that reader a *two years' subscription to* HEALTH AND HYGIENE *free.* Notices of Judgment will be provided free on request by the Food and Drug Administration of the Department of Agriculture, Washington, D.C.; the Monthly Statement of Work will be provided free on request by the Federal Trade Commission, Washington, D. C. Drop a card to each of these two bureaus asking them to put you on their mailing lists, and then send us your choices for *The Fraud of the Month.*

PURELY PERSONAL, as you see, has been expanded considerably in this issue. We want this department of HEALTH AND HYGIENE to become a real reader-editor column, and we will publish as many interesting letters as we have space for.



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