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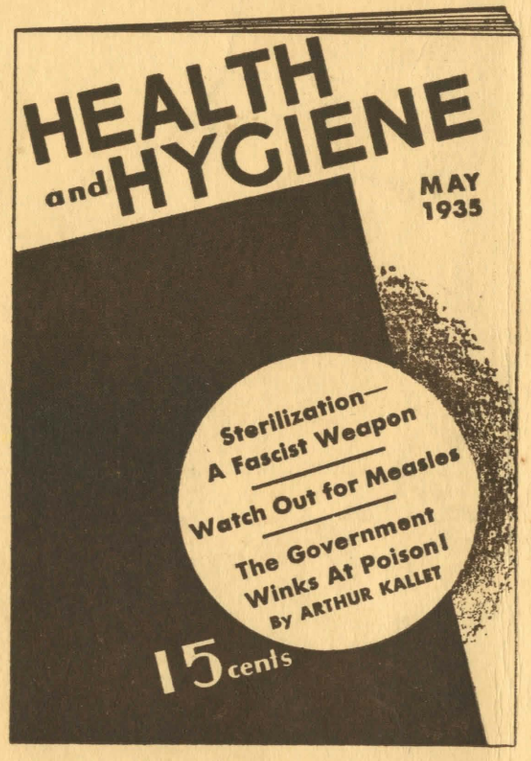

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HEALTH and HYGIENE

THE MAGAZINE OF THE DAILY WORKER MEDICAL ADVISORY BOARD

Vol. 1, No. 2 May, 1935

Next Month

●

Socialization of medicine is a burning question among physicians and dentists. An article of vital importance to workers will explain the situation and present a challenge to the medical profession.

●

The young boy and girl are confronted with certain serious sexual problems. Major sex habits and ideas of modern youth will be discussed.

●

Is vegetarianism healthful? The second of a series of articles on proper diet begun in the April issue.

CONTENTS

HEALTH *and* HYGIENE *is published monthly by the H. & H. Publishing Co., Inc., 50 East 13th Street, New York, N. Y. Editor, David Lurie; Advertising Manager, Lester Fuller. Subscription price for one year,* $1.50; *single copies,* 15 *cents.*

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• editorial

WE call our readers' attention to the article "Eating To Die" in this issue. As the article points out, pellagra is an economic disease. Doctors know what causes it, know how it can be prevented and cured. But we are powerless unless our prescriptions can be filled. We can prescribe lean meats and fresh vegetables for pellagra but we cannot give these foods to the workers.

As we write this, the Workers Unemployment and Social Insurance Bill, H. R. 2827, is being debated in Congress. The Roosevelt Administration is attempting to gag discussion and to defeat the bill. Passage of this measure would be a major step in the prevention of pellagra since it provides economic security and would raise the standard of living of Southern workers. Another bill recently introduced, the Workers Health Insurance Bill, H. R. 5549, would aid in caring for those already stricken, greatly increasing medical care in the South.

●

ALTHOUGH 500,000 people in the United States get syphilis each year, the Columbia Broadcasting System refused permission to New York State Health Commissioner Parran to deliver a talk on the disease. Dr. Parran was not allowed to speak because he was going to use the word "syphilis" in his broadcast.

Syphilis is a disease which can be cured and is practically preventable. Such censorship as is exercised by C.B.S. is an obstacle in the way of eradication of venereal disease. Such censorship fosters the notion that the disease is shameful and that men and women suffering with the disease should be social outcasts. Too often, people with syphilis or gonorrhea hide the fact that they have a veneeral disease, fail to get treatment and often infect others.

Far worse however than fear to offend some old ladies, is the failure of Federal or State authorities to undertake any real, widespread campaign against syphilis. In sharp contrast are the figures recently reported by Professor V. Bronner, the Russian syphilologist, who states that in twenty years, from 1924 to 1934, the Moscow health institutions have succeeded in cutting the number of registered patients with venereal disease by 96 per cent.

●

FURTHER information on Gustav Hartz, the Nazi whose article in the New York State Journal of Medicine we commented on last month, shows that Hartz, instead of being a trade unionist as represented, never belonged to a trade union. He was a member of an organization designed to wreck trade unions. Of importance to us, however, is not the fact that the claims made for Hartz were untrue but that the New York State Medical Society endorsed the Nazi and aided the Pennsylvania Self-Insurors Association, a bankers organization, in spreading this attack on social insurance among the members of the medical profession.

Fortunately, neither the leaders of the New York Medical Society or of the American Medical Associatiton who are bitterly opposed to health insurance, represent the ideas of the rank and file of the medical profession. While there is still much confusion among doctors, sentiment for health and unemployment insurance is growing and the Dunn Bill, H. R. 5549 is getting increased support.

Watch Out for MEASLES!

The possibility of an epidemic is great. Knowledge of what to do about this disease, dangerous for adults as well as for children, is timely.

THE Gertrude Rask, a Danish steamer bound for Greenland, has been quarantined for an indefinite period outside the harbor of Julanchaab. There has been an outbreak of measles on board ship. Four people have contracted the disease. The authorities are alarmed, remembering that three years ago, during an epidemic of measles, fifteen per cent of the population of Greenland died of the disease. So runs a dispatch from Copenhagen, dated April 2nd of this year.

Meanwhile in New York City there is already a greater number of measles cases for the months of March and April than is usual. This is not surprising because we are not only entering upon that season of the year when cases of measles become numerous but because there is great danger that measles will this spring become an epidemic.

A Measles Epidemic

In some sections of the country, especially the metropolitan area in and around New York City, for over a decade now, epidemics of measles have been known to occur in cycles on the even-numbered years. For the past several years, for no known reason, this even-numbered cycle has been interrupted, the last epidemic occuring in 1933. 1934 proved to be a relatively light measles year. 1935 is expected to be a year with a measles epidemic. It is impossible to predict this with absolute certainty but the figures for March of this year are so much greater than March, 1934, that we are almost certain the measles outbreak will be serious. In any case, the seriousness of measles is still a matter of great importance.

The common belief seems to be that measles is not a particularly dangerous disease. Actually, of all the diseases which affect babies and young children, measles is one of the most dangerous and treacherous.

In England it has been a very usual practice to have "measles parties" among children so that all the children of a given neighborhood would contract measles and "get it over with." It happens that the type of measles occurring in England is of a mild nature and that the disease there carries with it small probabilities of serious complications.

The business of "getting it over with" is an age-old custom which has come down to us from ancient times. It is based on the wholly wrong idea that since children must have all of the childhood diseases, the sooner the child gets the disease, the better. Nothing is farther from the truth. It is altogether unnecessary for any one to have any preventable disease. There is no *must* about it. While there are diseases for which we know no preventive methods, measles is not one of these. It would be criminally negligent to fail to employ means of prevention where these are known.

Measles Not Necessary

Measles is serious but children do not have to get it. There are ways of recognizing the disease in its early stages and there are methods of preventing it and of diminishing its severity in babies and children who have caught it.

Many mothers consider the rash on the skin the most serious thing about measles. But this rash is not what makes measles dangerous. There are other diseases of childhood which are accompanied by rashes, such as chicken pox,

German measles, etc. These are more or less harmless diseases. Measles is a serious thing because whatever causes it has such a "fondness" (or affinity, as it is called by medical men) for mucous membranes. It attacks the linings of the nose, throat, ears and lungs. When measles involves any of these mucous membranes it does so with such fierceness that serious complications are always likely to occur. X-ray studies of the lungs of patients with measles within the past few years have revealed changes in the lungs similar to those in the skin which cause the rash.

One of the most important things in caring for the disease is recognizing it in its early stage. This is important not so much for the person affected as for those who have been close or will be close to the sick person. Within relatively recent years measures have been discovered which make it possible to protect against or at least lessen the severity of the infection in those exposed to the one with measles.

How to Recognize It

How can measles be recognized then? To discover whether the sick child has measles it is helpful to know whether he or she has played with or been to school with children who have measles. Signs of the disease are fever, cough, running eyes, running nose, a widely scattered rash consisting of flat and slightly raised sores of a violet-red color first appearing back of the ears and on the back of the neck. The rash soon spreads over the face and the rest of the body. One of the surest signs of measles is the rash. The "measles face" is easily recognized.

A sign of measles which appears even before the rash are yellow-white spots in the mouth known as Koplik spots. They are named after the doctor who first described them. These spots appear from 24 to 48 hours before the rash. It is very difficult to find these spots. If you suspect that the child has measles, or know that the child has had contact with some one who has measles, go to the doctor even before the rash appears. The Koplik spots are almost a certain sign that measles will set in. The Koplik spots will enable the doctor to recognize measles while the disease is in the earliest stages.

Who Will Catch It?

Are all individuals susceptible to measles? There is probably a small percentage of persons who have natural resistance to measles, who are *immune* to it and will not get the disease. Most children, however, will develop measles after contact with someone suffering from it Most people can get measles. Nursing infants and very young infants who are receiving breast milk are generally immune. They get their resistance from their mothers. Unfortunately there is no test for susceptibilty to measles comparable to the Schick test which tells whether or not a child is susceptible to diphtheria.

Although infants may be immune to the disease during the first six months, they may lose this immunity when they grow up. In addition, never having measles as a child does not mean that a grown-up person may not get it. Measles is not confined exclusively to children. This was amply demonstrated during the World War when thousands of rookies were massed in cantonments and thrown in together from all sections of the country. Serious epidemics of measles, chicken-pox, German measles, mumps, whooping cough and scarlet fever which generally are considered childhood diseases broke out among the soldiers. This was especially true for the farm boys who had never come in contact with measles before. They had had no chance to develop resistance to the disease and they had lost the resistance they had as infants.

How to Protect Children

Can an infant or child who has been exposed to the disease, who has contact with another child with measles, be protected against it if convalescent blood serum is given? The child within one week after exposure the child will either be protected against the disease for at least three weeks or will get only a mild form of measles. Convalescent serum is a serum made from the blood of an individual who has recently recovered from an attack of measles. That individual has developed substances in his blood which have helped in conquering measles.

It may be asked: why give convalescent serum if the most it can do is prevent the disease for three weeks? It has value insofar as it can protect premature infants, infants weak from birth, infants infected with tuberculosis. It has value, in other words, in those infants in whom, for one reason or another, we are especially eager that the infection of measles shall not take place.

Blood Injections

Within the last ten years or so, the measure most commonly employed in partial protection of children and infants exposed to measles has been giving the blood of the parents. Given by injection into the muscle of the exposed infant or child within a week at the most after exposure, whole blood obtained from an adult who has had the measles will either abort the disease, that is, make it so mild that it can easily escape notice, or at least make the disease milder. The degree to which the whole blood succeeds in lessening the severity of the measles would depend upon how recently the parent had measles (the more recent the better) the amount of blood given, and the cause and strength of the attack of measles to which the child has been subjected. In addition, the ability of the exposed child to react both to the disease and the blood is of importance.

Of all the methods that have been developed as a partial preventative against measles, blood is still at the top because of its availability and effectiveness. Since the cause of measles has not as yet been discovered, no vaccine or anti-toxin can be made. Nature has provided us thus far with a very efficient means of at least making a case of measles milder, with fewer complications and a lowered death rate.

Within the last few years there has been developed a placental extract (an extract that is made from the after birth) which is now being tried out on a fairly large scale. It is too early as yet to draw any definite conclusions or to make any predictions. The best authorities agree that whole blood is still the best method we have to curb the danger and treachery of measles.

GIVE YOUR CHILD BLOOD INJECTIONS

The Importance of Protection

It is important that every parent know that measles is a really dangerous disease, that serious complications may arise and that the probability of these complications may be decreased and the chances of death or prolonged illness be greatly reduced. Knowing these facts, the informed parent will make every effort to protect the child from exposure to measles in the first place, and failing this, will immediately go to a doctor or to a clinic for an injection of whole blood for the child.

What to Do

Once the child has caught measles it should be kept in bed. If possible, the child should not leave the bed at any time during the sickness. Since some children will develop a fear of light during such illness, shades should be drawn or the house darkened in some way. This need not be done unless the child requests it. Formerly, the house was kept dark in every case of measles. This is not necessary. As long as there is fever, the child should be fed a light, soft diet, such as poached eggs, strained cereals, strained soups and milk. If the child begins to develop a hoarse throat or other signs of a throat or chest cold, the doctor should be called back at once. This may be a sign of complications, especially a sign of bronchial pneumonia which is the most dangerous of the complications possible in measles. The same holds true if the child develops earache. This may be a sign of mastoiditis.

MEASLES IS A DANGEROUS DISEASE

The chief thing to remember about measles, however, is that if recognized through observance of the rash during the first week, the child and one of the parents should go to a doctor or clinic and have some of the parent's blood given to the child. If the blood of an adult recently recovered from measles is available, so much the better.

A Social Duty

Last but not least, we mention the extremely important social duty of every parent to inform the parents of other children who have been exposed accidentally to a playmate while he was brewing the measles. This is not always possible, we do not always know who the child was playing with; but wherever it is possible it is nothing short of criminal not to inform the unsuspecting parent. So much which can be done to lessen the severity of the disease, to reduce its complications and its constant threat of a prolonged illness and even of death, can only be done if the parent is told that the child has come in contact with one with measles.

EATING to DIE in the SOUTH

Pellagra will kill 5,000 more Americans this year. Wholly preventable, it is an economic disease which will take its toll as long as workers are denied proper diet.

"I AM a mill worker in Concord, North Carolina. It seems that we cannot get along on the wages I make. Two weeks ago my youngest came down with the flux. Is there anything we can do for him?"

This is taken from a letter we received some time ago. It is similar to many letters from Southern mill towns. The baby has gotten the "flux," or bloody diarrhœa. This may be the result of pellagra. The baby may have become one of 125,000 Americans who are suffering from this disease. More than a quarter of a million of men, women and children are sick with a disease which is wholly preventable. They are sick because they have not had the right sort of food, dying because what they eat does not carry enough nourishment.

Four Centuries Old

Pellagra, is a deficiency disease. It is a disease due to a lack of such foods as milk, eggs, vegetables, fresh fruit and meat. It is a disease with a long and inglorious history. It was given its name, meaning "thick skin," by Italian peasants in the 16th century when it was recognized that a peculiar disease was killing large numbers of peasants in Italy and Central Europe. The disease was not understood, however. It is only in the last twenty years that pellagra has become a well-defined, specific disease. Today, the disease which attacked the peasantry of Italy four centuries ago and was thought the work of devils, has become an American institution. Though little has been done to stop it, we know the cause of the disease and how it can be prevented.

What Vitamins Are

It has been known for some time that food is made up of proteins, carbohydrates and fats. The strange thing was that if a dog was fed these elements of diet in correct proportion but in a perfectly pure state, as pure protein or pure carbohydrate, the dog would not grow. It would become ill and eventually would die. But if a small quantity of milk was added to this chemically pure diet, the dog would begin to grow, would soon become a normal and tail-wagging pup. The milk contained some growth-producing substance or substances other than proteins, carbohydrates or fats. Other experiments showed that almost all *fresh* foods contained such growth-producing substances. These substances have been named "vitamins." Pellagra is a disease due to a lack of one of these vitamins.

Preventing Pellagra

Progress in the diagnosis and in the understanding of pellagra has been largely due to the research of American physicians. Systematic investigations were undertaken in the Southern States, particularly in the textile mill towns where the majority of cases occur. The results of these investigations pointed conclusively to the overwhelming importance of diet in the production of this disease. It was proven that the disease did not occur where a well-balanced diet was obtained. It was shown that pellagra could be prevented and cured with a diet which included such foods as lean meats, milk and vegetables. These foods contain many vitamins that are indispensable for good health; they contain that particular vitamin known as vitamin "G" which will prevent and cure pellagra.

Signs

Prevention of pellagra is of prime importance. The disease is a gruesome one. It attacks the skin, the mouth, the digestive tract and the nerves. The skin of the face, neck and hands becomes reddened, thickened, scaly and hard. Large blisters may form. There is severe diarrhœa and agonizing burning of the mouth, tongue, hands and feet. Ulcers form on the tongue. There are often severe cramps in the muscles. The nerves are affected in such a way that the patient loses power over his limbs. Often the mind is affected so that he becomes confused, restless and delirious and has to be committed to an asylum. If food containing the essential vitamin is not given at an early stage of the disease, death results.

Whom It Attacks

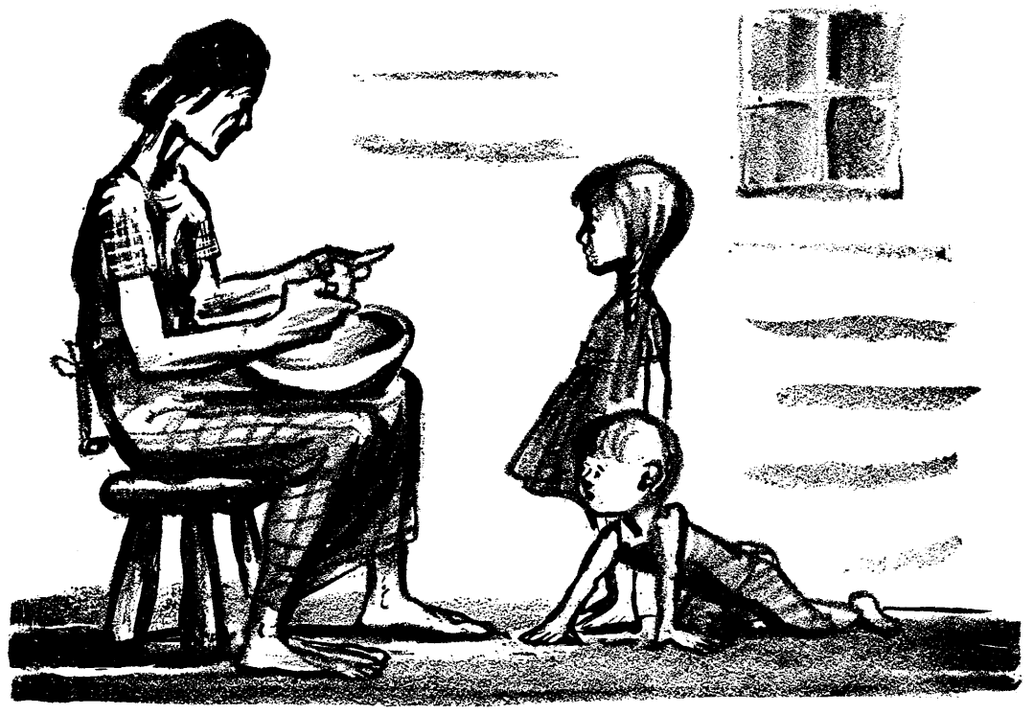
Today, in every mill town, among the sharecroppers and in many Southern cities, one can see workers showing one or more signs of this dread disease. There are patients at the point of death from pellagra in every Southern hospital. Why does this disease select the miners, the mill hands, the sharecroppers and the tenant farmers and not the mill and mine owners and superintendents or the plantation owners?

The answer lies in the character of the diet on which the Southern workers live. The diet of the textile worker, for example, consists of fatback, or salt fat pork, molasses and corn bread. Fresh dairy products, vegetables and lean meats, necessary for the prevention of pellagra, are almost never found on the table of the Southern textile worker.

Certain "experts" declare that the textile worker prefers this diet. The truth is that most textile workers never receive a minimum of health education and do not know what is a good diet. This is not the important point, however. What is important is the fact that even if the worker knew what the essentials of a good diet were, he could not buy them on the wages or relief given him. The cost of milk is as high as 20 cents a quart in some regions. Mothers have been known to suckle an older child as well as the new-born. Lean meats and liver, rich in the pellagra preventing vitamin, are much too expensive for the workers. Even the price of fatback, that cheapest of pork products, has risen from 12 to 25 cents a pound in the past year.

Where It Strikes

The cause of the disease is known, its preven-



tion is a simple matter, yet the number of cases of pellagra in the South remains great. Thousands of cases are seen every year. At least 5,000 die every year from the disease.

Seven states, North and South Carolina, Georgia, Alabama, Mississippi, Arkansas and Louisiana, the state of Huey Long, have more than two-thirds of the cases. The U. S. Public Health Service reports that the number of cases reported is only about 50 per cent of the actual number. This is due to the inability of workers to pay physicians and the small number of free clinics. The fifty per cent not reported never go to the doctor.

How small the number of clinics and public health stations is can be seen from the fact that in only 528 of the 3,000 counties in the United States are there full-time public health services. Most of these 528 are Northern counties. To make matters worse, local appropriations for public health have been decreased by 20 per cent since 1930. Recent statistics have been cited to show that the death rate from pellagra is decreasing. These statistics tell only half the story. While the number of deaths reported have declined this is not due to any improvement in the workers' conditions but to the fact that fewer workers reach physicians and that State health boards are so inadequately staffed and financed that the communities where pellagra is prevalent cannot be investigated.

In the North

A further alarming thing about pellagra is the fact that there has been an increase of cases in the North in the last few years. Previously, pellagra was extremely rare in Northern cities. The depression has brought it from the South. In New York City, for instance, practically all of the few pellagra cases before 1929 were Bowery drunks who lived almost exclusively on rot-gut whiskey and doughnuts. Since 1931, however, there has been an increasing number of cases where white collar workers and aged couples not on relief took sick with pallagra. They were attempting to live on such diets as toast and tea. Other cases were those who got pellagra while depending on the breadlines for their food.

The U. S. Public Health Service has been publishing pamphlets urging the consumption of brewer's yeast. Yeast is rich in vitamin "G." According to these reports the yeast is being "distributed in generous quantities by Health Departments and other welfare organizations in the South." Recent inquiries in North and South Carolina reveal that this is not tue.

Even if it were true, it would still be a neat commentary on the methhod the government chooses to combat an economic disease. It permits the workers to live on hog fat and suggests compressed vitamins as an antedote. The right of the workers to a well balanced diet, to a natural source of vitamins, is not to be considered.

Advice and Action

At the same time, the U. S. Public Health Service has just issued a pamphlet urging the promotion of home gardening. It is said that this would give families food which would prevent pellagra. The pamphlet recommends kale and cabbage, two vegetables rich in vitamin "G," be especially cultivated. No information is given as to whose garden the workers should appropriate for cultivation. It is true that some textile workers have small plots where a few heads of cabbage and kale can be grown. These workers can now look forward to a magnificent dinner of broiled fat back, a salad of cabbage and kale with hog fat dripping, toasted corn bread and a simple desert of molasses. At the same time, the sharecroppers in parts of Alabama have been able to follow the advice of the government. Previously forbidden to plant any crop but cotton, sharecroppers, organized in the Sharecroppers Union, have won the right to plant a garden.

Ending Pellagra

Pellagra is an economic disease. It can only be prevented if the workers are enabled to get at least those foods which are rich in vitamin "G": liver, lean meats, milk or buttermilk, canned green peas and cabbage or kale. The prevention of pellagra requires better wages or more relief than the average Southern worker gets today.

Try Resting for STRENGTH

"Too tired to go out" after a day's work? Relaxing exercises will help you gain strength, will save your energy.

IN spite of their elaborate advertising campaigns, the "big muscle" builders have never succeeding in selling their correspondence courses to the majority of the people.* There are several reasons for this failure. No sound reasons were given as to the need for big muscles. Many who took the mail order courses, seeing no immediate results, soon tired of the monotonous artificial movements with the dumbbells and bar-bells. They gave up with the belief that their physical makeups were unchangeable. Many sensed that the mail-order muscle building was a racket and refused to be parted from their money.

As if to confirm the belief in the fallacy of such exercise some of the most famous exponents of physical culture suddenly and without warning departed from this world. Some took this as proof of the harm of physical exercise to the hearts. The reaction to the deaths of three of the muscle and exercise men in recent years was typical. Eugene Sandow, who not so long ago thrilled vaudeville audiences here and abroad with his muscular super-development, died suddenly at the age of fifty-seven. Sigmund Breitbart, the modern Samson who severed iron chains with mere chest expansion and bent horseshoes with his bare hands, died suddenly before reaching the age of fifty. Walter Camp, the famous football expert and the creator of the "Daily Dozen," was found dead in his bed one morning. His death, and the deaths of Sandow and Breitbart, were believed by the public to be due to "athletic heart."

Athletic Heart

An athletic heart is supposed to be a heart made large by exercise. In many books written for high school students they tell the story of the college man who is on the rowing crew for four years. During this time he gets a great deal of vigorous exercise. This is supposed to enlarge his heart. After he finishes college, the hero of the story goes to work in an office. He gets little exercise. The story goes on to tell how he gets a "fatty" heart, as his heart is gradually replaced by fat. His heart is now said to be weak and flabby. The story in the books ends when he runs after a street car and, great athlete that he was, drops dead from heart failure.

The trouble with the whole story is that it is untrue. There is no such thing as an athletic heart. It is true that overexertion will make a damaged heart worse. The normal heart, however, is not made materially larger by exercise. It is made larger by disease.

The problem of the majority of the people would not be that of an athletic heart, if such a type of heart existed. Most of us get very little exercise. The closest many of us come to exercise is in the bleachers at the ball park. The problem we are concerned with is how to develop physically the average worker who gets little chance for exercise.

Too Tired for Movies

It is common enough to hear some one say: I work so hard that when I get home I haven't even strength to go to a movie. The problem we are concerned with here is: how can a worker improve his physique so that he can not only work but can find energy for the leisure

See "The Muscle-Building Racket" in April HEALTH AND HYGIENE.

hours? How can a lathe hand acquire sufficient energy for his work and still have energy spared for the hours after work? How can a cutter in a dress factory improve his vitality so that he may devote his spare time to some enjoyable pursuit? How may a truck driver, engaged in the strenuous work of driving and lifting heavy objects, prevent bodily malformations and ward off fatigue? What possibilities have an office worker or a store clerk for keeping physically fit and mentally alert? To answer these questions we have to consider the human body as a very complicated mechanical device.

Looking Like Hercules

A machine is efficient if it can do the most work with the least waste of power. The human body is efficient to the extent that it can do the most work with the least amount of fatigue or tiredness. Physical efficiency for a worker means the ability to perform his daily task without being tired at the end of the day.

One reason why mail-order muscles builders cannot fulfill their promises is because they depend on a type of exercise that tries to make a person *look* strong. Most people think of a strong man as one who shows a large muscle on his upper arm when he bends his elbow and lifts his shoulders. For this reason the muscle-builders try particularly to develop these conspicuous muscles, the biceps. The basic error is in the attempt to create big muscles. Big muscles are neither necessary or important. The important thing is to be able to do one's work without feeling worn out at the end of the day.

Learn to Relax

One way to help reach this goal is to learn to relax. One way to get strength is to rest. This is not as easy as it sounds. Many people cannot relax completely even during sleep.

Proper exercises can help a person learn to relax. Whenever possible these exercises should be preceded by a luke warm bath or shower. The exercises are as follows:

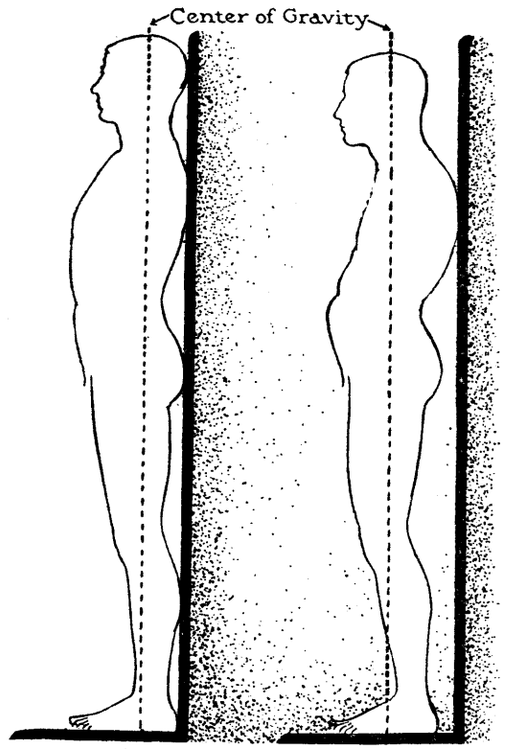
Stand with arms hanging loosely at sides. Shake arms *loosely* at shoulder joints so that fingers, wrists and forearms shake independently of each other. Do this for one minute.

Bend forward with knees slightly bent and spread about 18 inches apart, arms hanging loosely and pointing to the floor, shake arms again, this time adding a side to side rocking movement of the shoulders. One minute.

Lean on bed or against wall with right hand, raise left foot off floor and shake it loosely from the hip joint, relaxing the knee and ankle joints. Reverse to right leg. One minute.

Stand with feet about 24 inches apart, left foot in front of right foot and bent at the knee. Raise right arm to shoulder level. Suddenly, completely relax right arm and let it drorp to your side. If properly done, the arm will not stop at your side but will sway three or four times. Reverse position of legs and do the same with the left arm. Do this ten times with each arm.

Stand with feet about 18 inches apart, knees slightly bent. Relax muscles of abdomen and lower back, the muscles of the waist, permitting the upper body to drop forward. If properly done, the trunk of the body (the upper body) will not stop sharply but will sway 3 or 4 times near the knees. Do this ten times.



Posture, Good and Bad

The Best Exercise

Lie on back, legs straight, arms at sides. Close eyes and imagine yourself getting very heavy. In fact, think of yourself as so heavy that you are going through the floor or bed. If unable to do this at first, practice with parts of the

(Continued on page 32)

IVANOFF Gets Sick

The second of a series of articles on "The Soviet Union Looks to Its Health."

IVANOFF is a young worker in a Soviet automobile plant and lives with his wife and two children in an apartment in a recently built apartment house. The house has a playground, gymnasium, library and club. He returns home at night after 8 hours work, happy and contented. After dinner the children are put to bed and the Ivanoffs go down to the club for a game of chess or a quiet hour of reading in the library. Returning home several hours later, Ivanoff complains of discomfort in his abdomen and slight nausea. He goes to bed in the hope that it will pass away. He cannot fall asleep. The discomfort gradually changes into actual pain in the lower part of his abdomen. He is seized by an attack of vomiting. It is two o'clock at night; his wife calls up the neighborhood clinic. One of the doctors on duty soon arrives and upon examining the patient he suspects an attack of acute appendicitis. He draws a specimen of the patient's blood and examines it upon return to the clinic. The blood examination strengthens the diagnosis. The doctor calls the hospital of which the clinic is a part and Ivanoff is brought there by ambulance. He is operated upon after the surgeon has examined him and confirmed the diagnosis. In the morning the social service worker calls the clinic of the automobile factory and reports the accident. The report is forwarded to the administration and the shop committee.

One week later Ivanoff has recovered from the operation and is sent for two weeks to a convalescent home. His strength regained, Ivanoff returns to work.

During the entire episode no question of money entered anyone's mind. There were no doctor or hospital bills to pay. Ivanoff's usual weekly earnings were paid to his wife and no humiliating investigations were made. The hospital record is now added to Ivanoff's record in the clinic and any recommendations made by the surgeon are followed by the doctor in the neighborhood clinic and the physician in the factory where Ivanoff works.

What happened to Ivanoff is typical of what happens to workers in any large city in the Soviet Union. Let us see what is behind this little incident.

The Government's Concern

Progress in industry and the growth of large cities in the Soviet Union brought to the urban dwellers many comforts which were looked upon as luxuries not so far back. Thus, apartment houses with modern plumbing, Parks of Culture and Rest, Schools, etc., are rapidly becoming commonplace in the workers' life and are looked upon as necessities justly due them in return for their collective effort. The village is rapidly awakening and is taking its share of culture and comfort. The worker in the factory and field is freed from the oppressing sense of economic insecurity, and what is most important, he knows that his health as well as his job is the concern of his government.

Public Health a Need

Public health in the Soviet Union today is looked upon by the worker as a necessity supplied to him along with the house he lives in or the water he drinks. The younger generation, grown up since the October Revolution, looks upon a fee for a medical examination or treatment as ridiculous, as much so as paying a fee for the air one breathed.

Public health, like education or industrial planning, is not in the hands of politicians or magnates but entrusted to the most eminent scientists who constitute the commissariat of Public Health. It is an active organization that holds congresses frequently, encourages research and is eager to adopt new ways which have proven their value in Public Health and discard old methods which have become obsolete. The hospitals, clinics, ambulatories, sanitation stations, research institutes, doctors, nurses and the drug industry are the little screws and bolts that make up the efficient machine of Public Health.

The facility with which research can be car-

(Continued on page 30)

Sterilization—

STERILIZATION is an operation for the prevention of pregnancy. In the male this is a relatively simple procedure which consists in cutting the duct leading from the testicle on each side and so preventing the passage of sperm. In the female, sterilization is a more complicated procedure. It involves opening the abdomen and therefore carries a slight risk, like any major operation. The Fallopian tubes, which carry the ovum from the ovaries to the womb, are either removed or blocked in a way to prevent passage of the ovum. In most cases, the operation of sterilization probably has no harmful physical or psychological effects. Sexual function is not disturbed. While there are justifiable medical reasons for sterilization, we are not concerned with these here but will limit our discussion to so-called *eugenic sterilization.*

Eugenics and Genetics

Eugenics is a term introduced by Francis Galton in 1883 to denote the study of the possibility of improving the physical and mental qualities of future generations. Positive eugenics aims to increase good heredity by the encouragement of worthy parenthood while negative eugenics aims at the elimination of bad heredity. The propagandists for eugenic reform advocate the elimination of the so-called unfit as a social "cure-all."

One must distinguish between genetics and eugenics. Genetics is a science based upon a comparatively new body of knowledge and is a study of how the *genes,* which are the bearers of hereditary material in the reproductive cells, interact. Eugenic propaganda is based for the most part on crude ideas of heredity current before our present knowledge of genetics.

Eugenicists Wrong

The eugenicist starting from the crude notions that *like* produces *like* entertain the fallacy that superior children must come from superior parents. They have the notion that if people with brains stopped breeding the next generation would all be morons. Actually the laws of genetics teach us that the chances are all against brilliant parents having equally brilliant children and that genius may result from a chance combination of genes from parents of average intelligence. The eugenicist, however, is convinced that the genius ought and therefore does come from parents of what they call the better class; that morons come from morons, that good people come from good people, that criminals come from criminals, etc. None of these things are so.

Ruling Class Propaganda

The eugenicists believe that heredity is all important and environment negligible. They hold to the idea that a hereditary characteristic is not alterable by the environment. Finally, they hold the idea that preventing the breeding of hereditary defectives will eliminate such defectives in future generations. We might dismiss such notions as those of ignorant idealists but it would be a mistake to do so. for the eugenicists are propagandists for the exploiting class. The people whom the eugenicists label unfit belong to a class, a race, a creed, a political group that the eugenicists and their backers hate and fear. Therefore you will find the eugenicists continually using such vague terms as *degenerate, feeble-minded, criminal, insane* and you will find them advocating sterilization of large groups of people classified under these crude headings.

The Nazi Laws

In Germany the law which went into effect January 1, 1934, would make unfruitful or sterilize through operation, the hereditary sick which includes people with inborn feeble-mindedness, certain types of insanity, epilepsy, chorea, blindness, severe physical deformity and those who suffer from severe alcoholism. The program in Germany calls for the sterilization of some four hundred thousand persons. The larger portion of these are supposedly feeble-minded. The terrible significance of this attempt to protect Nazi purity can easily be realized when one considers who decides which people are to be sterilized. Here is a ready weapon for use against political opponents. The Naxis have not hesi-

● More than 12,000 have been sterilized as criminals in the United States since 1907, although there is no scientific basis for the practice. Nor is there scientific proof that any one race is superior to another.

A Fascist Weapon

tated to use castration. Castration, of course, sterilizes because it involves removal of the sex gland. Those who propose castration for habitual sexual offenders are often motivated by hate. It is astonishing to note that twenty men have been castrated in Michigan since 1925.

No Superior Race

The apparent obsession of the Nazis about pure Aryan stock has no scientific basis whatsoever. There is no such thing as a pure or a superior race. We are all hybrids, or mixed breeds, and from a biological standpoint a mixture of races, such as we have here in America, has been advantageous.

Sterilization in the United States

In the United States, twenty states have laws for the sterilization of the so-called unfit dating as far back as 1907. In 1927 the U. S. Supreme Court in the Buck versus Bell decision upheld the legality of these laws. Justice O. W. Holmes made at that time the famous and fatuous utterance much quoted by eugenicists "Three generations of imbeciles are enough." Up to 1932 some twelve thousand individuals have been sterilized. About six thousand operations have been performed on the insane, three thousand on alleged feeble-minded and sixteen on criminals. As might be expected the majority of these operations were done in California, the state of the Criminal Syndicalist laws.

Mr. Leon F. Whitney, Director of the American Eugenics Society, has written a book, "The Case for Sterilization." He calls sterilization a burning issue and advocates its wide use to save society. How many would have to be sterilized? *The lowest fourth of our population!* We should hardly miss them, says Whitney. Who is included in our lowest fourth? When we read that the Negroes in New Haven furnish six times as many "subnormals" as the whites, that the foreign born furnish six times as many as the native; when we read about "criminals"—"who do not come from the best homes"; when we read about the status of recent immigrants—do we need any further evidence of what Whitney's kind consider the socially unfit who ought to be made unfruitful?

No Proof

The discredited army intelligence tests are used to determine who should be sterilized. Using these tests as a basis half our adult population is below the mental age of 13.2, the age of a normal boy of thirteen. We should not underestimate the intelligence of a thirteen-year-old boy and we should not set our expected standard of intelligence too high. Otherwise we find ourselves in the absurd position of saying that the average person is below average which is the same thing as saying the average quart is a pint and a half. Intelligence tests do not measure intelligence. Because of lack of space we must state somewhat dogmatically that there is no proof that children of different social classes differ widely in intelligence. There is no good proof that races differ widely in intelligence. There is no good proof that the so-called criminal population is lower in intelligence than the average.

Shuffled Chromosomes

Every cell in the human body contains forty-eight rod-like structures called chromosomes which are the bearers of thousands of minute particles called genes. The genes are the determiners of heredity. Both human egg and sperm undergo a reduction of chromosomes to twenty-four so that at fertilization the new individual receives half chromosomes from the maternal side and half from the paternal, obtaining

in all the original forty-eight. In the reduction of the chromosomes there is a random shuffling like the shuffling of cards; heredity is thus subject to the laws of chance. No two individuals ever get the same set of chromosomes except in the case of identical twins and therefore no two individuals are ever alike mentally or physically. Few of us draw a royal flush in the shuffling of the cards of heredity. Extremely tall and extremely short individuals are rare. The two extremes of mental defect and genius are rare. Most of us tend toward an average and this will ever be so. If the average is to be raised the *environment* in which the genes manifest themselves must be mproved. Sterilize any number of people you wish and if the environment is the same, half of us will fall below and half above a given average regardless of class, color or creed. The only way to prevent feeble-mindedness by sterilization would be to sterilize everybody and call it quits.

Border Line Cases

The eugenicists advocate widespread sterilization for mental deficiency. While heredity undoubtedly plays an important part in the production of feeble-mindedness it does not work in the simple way described by the eugenicists. Non-hereditary factors, such as birth injuries, inflammation, gland disorders and malnutrition, often cause mental deficiency. Ninety-five per cent of mental defectives come from normal parents. Only five per cent have one or the other parent defective. When the defect is slight experts cannot agree as to whether an individual near the border line of average intelligence is mentally defective or not. Yet it is these borderline cases that the eugenicists would largely sterilize. It is here that they are forging a weapon for use against anyone who rases a voice against economic exploitation. Sterilization is absolutely useless for the prevention of feeble-mindedness because it will not prevent the ninety-five per cent defectives from normal parents from appearing in the next generation. The whole question of feeble-mindedness is of very moderate dimensions as Penrose has pointed out and he has shown that a large proportion of these unfortunates could be made socially useful assets. A small part of the money spent for armament would do this. The truth is, of course, that the people who rave about sterilizing the feeble-minded avoid mention of social parasites who are much more dangerous.

Crime Not Hereditary

A tendency to crime is not inherited, is not transmitted from parent to child. Crime is a social product and the greater the number of laws the greater the number of crimes. There are social crimes which spring from motives not lower but higher than those ruling the society in which thehy arise. As economic crisis deepens "crimes" increase. Laws are passed against those who strike making them therefore criminals and subject to sterilization. Tom Mooney is considered a criminal. So is Ernst Thaelmann in Germany.

Fake Science

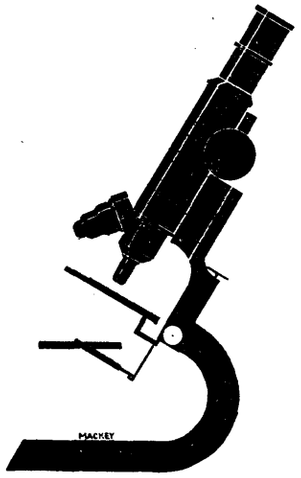
One has only to ask who decides to sterilize *who?* Then one will realize that sterilization ranks with imprisonment and deportation as a fascist attack on workers. Eugenicists are attempting to maintain the domination of a decaying class. The pseudo-scientific propaganda of charlatans like Paul Popenoe, Madison Grant, A. E. Wiggan, Lathrop Stoddard and their kind should be recognized as demagogy. Only the unenlightened will be fooled by such terms as race purity, degeneracy, insanity, feeble-mindedness, criminality, etc. These are not scientific or medical terms but merely legal. Behind the hypocritical moral tone and all the mystical hokum about class and race superiority is a typical fascist attempt to obscure, disrupt and divide.

Conditions and Genes

Careful students of heredty have pointed out time and time again that eugenics cannot be taken seriously. Bad living conditions produce the same effect as bad genes. Environment and heredity interact. Eugenicists ignore the environment, they ignore the evils of capitalist exploitation. Mental defiiciency, insanity, crime cannot be considered separate from the social and economic pattern in which they appear.

No real attempt to solve the problem will be made by those who advocate sterilization. A solution would threaten their very existence. Nor will the voice of reason, the protests of eminent genetists stay their hands. They are irrational, they talk nonsense but it is nonsense with a purpose. We must fight the attempt of the eugenicists to divide us on the basis of color, class, or race.

"BUGS" that FIGHT for MAN



The man who discovered bacteriophage was first doubted then attacked. The story of the discovery is a fascinating part of the annals of science.

A NEW weapon which promises to become a powerful instrument in mankind's fighht against disease was unearthed by the French bacteriologist, D'Herelle, now working at the Institute for Infectious Diseases, Tiflis, Georgia, U.S.S.R. While working with dysentry in his native France in 1917, he discovered the existence of unseen parasites that lived by killing the dysentery germs. Bending over his microscope, D'Herelle saw billions of germs, scientifically known as bacteria, swarming in the culture plates where they were transplanted from the dysentery patients. They were healthy germs whose existence in the bowels of Frenchmen would case intense suffering and death. D'Herelle carefully lifted the glass top of one of these plates and added a drop of water containing these hitherto unknown parasites. He waited breathlessly, and then shortly afterward he anxiously peered through his microscope again. No longer were the billions of death-dealing germs, or bacteria, swarming alive, ready to kill man. There was no visible life in these culture plates. D'Herelle called these new parasites—bacteriophage, eater of bacteria.

Before this discovery, a number of curious unexplained phenomena were noted. An English scientist, Hankin, in 1896 observed that in a certain portion of the Jumna River, India, every cubic centimeter of water contained more than 100,000 germs. About five kilometers further down this river, the same amount of water contained only 90 to 100 bacteria. Hankin also discovered that cholera germs were killed by water from the Jumna River after it was filtered. Another student of germ life, Twort, in 1915, found that certain germs when artificially grown in culture would become diseased and die. It remained for D'Herelle to finally discover that although bacteria were parasites causing disease and death among mankind, they also were subject to diseases and death by other smaller parasites which were so tiny that no microscope could make them visible.

Since D'Herelle's work, a great many scientists have studied this strange natural force. Many of the stiff-shirted socialite scientific brethren attacked D'Herelle. They scoffed at D'Herelle's claims that these parasites, the bacteriophage, could be used to treat disease. For a long time the French scientist's work was held in disrepute by these scoffers. His claims were unfounded, they argued. Finally he came to the United States as professor of bacteriology, Yale University, School of Medicine. The abuse continued, and he became a harried man. A haven was offered in Soviet Russia where he settled. Since going there, others workers in this field of science have found that bacteriophage was very effective in treating certain diseases caused by germs. Within recent times, physicians and bacteriologists have found that the use of these bacterial parasites gave unexpectedly fine results in the treatment of boils, inflammations of the bladder (cystitis) and kidneys (pyelitis).

The GOVERNMENT WINKS at POISON

By Arthur Kallet

● Co-author of "1,000,000 Guinea Pigs", Mr. Kallet is well known as a writer on the dangers in foods.

TWO poisons, arsenic and lead, have become a regular part of the American diet, and a serious threat to health. Millions of pounds of lead arsenate are sprayed and dusted on fruits and vegetables each year to protect them from destruction by insects. Some of the insecticide remains on the produce and is eaten with it.

In occasional cases a single apple or pear, a head of cabbage or broccoli may bear enough poison to cause immediate illness or even death. Of more serious general concern, however, are the cumulative effects of repeated tiny doses of lead and arsenic taken into the body with many different fruits and vegetables. Only part of the lead and arsenic are excreted, the rest accumulating in the body.

The likelihood of serious physical damage from these tiny doses is receiving recognition from medical authorities. This hazard has been recognized by individual technologists in the United States Department of Agriculture, which has the power to ban poisonous residues on all produce sold outside the state in which it is produced. But Secretary of Agriculture Wallace, rather than seek an appropriation which would permit the government to remove the residues, refuses to recognize the hazard, and allows residues of the poisons to remain. These residues cannot be removed from fruits and vegetables by washing them in the home. The growers or the government, could remove them from some fruit at a cost of a few cents per bushel.

C. N. Myers and Binford Thorne several years ago pointed out, following a study of hundreds of cases, that arsenic is an important factor in about 20 per cent of adult eczema and a very large percentage of eczema cases in children. They considered spray residues one of the main sources of the arsenic. Other conditions which these and other investigators attributed to the continual consumption of minute doses of arsenic are patch baldness, abnormal coloring of the skin, a skin disease called keratosis, nervous ailments, and disturbances of vision. As far back as 1929, writing in the New York State Journal of Medicine, Myers and Thorne said, "Death from chronic arsenic poisoning has been noted eight years after the exposure. In our cases it is not uncommon to find clinical symptoms two to six years after the exposure."

It is well known that arsenic sometimes leads to cancer, and the possibility that the arsenic residues which millions of people take into their bodies with fruits and vegetables is causing many cases of this disease deserves serious consideration by food control officials. Unfortunately it is not likely to get such consideration, especially if cancer, like other diseases arising from arsenic, can occur many years after exposure, when it is impossible to point to particular contaminated foods as the responsible agent.

The Possibility of Cancer

The lead residue is perhaps even more dangerous than the arsenic and this danger is becoming recognized, except by Secretary Wallace, despite the obscure nature of the symptoms of chronic lead poisoning. C. W. Crawford of the Department of Agriculture wrote, in 1933, "Complications arise from the fact that traces of poison continually consumed may manifest results only after a period of years; first evidences of poisoning from infinitesimally small daily doses of lead have appeared as long as a decade or more after the beginning of the exposure."

The American Medical Association, which casually accepts the high limits on lead residues permitted by the Department of Agriculture, has often commented on the dangers of small doses of lead. The following is from an editorial in the Association's *Journal*: "Perhaps the most striking manifestations of lead poisoning are those associated with an impaired nervous mechanism. Lead intoxication may be followed by a variety of neurologic symptoms, such as tremor, transient paralysis, convulsions, vertigo, temporary blindness, headache, insomnia, and mental lethargy or other disturbances. A recent report . . . further incriminates this element (lead as a neurotoxic substance . . . in multiple sclerosis. . . . This conclusion was based on the finding of appreciable quantities of lead in the cerebrospinal fluid, brain, spinal cord and bones of a number of patients with this disease. In only a few instances did the case histories indicate the possibility of a previous exposure to undue amounts of lead; therefore *there had undoubtedly occurred a slow chronic absorption of amounts too small to produce toxic symptoms. . . . Many common foods, particularly fruits and vegetables which have been sprayed with insecticides containing lead, may contain small amounts of lead.*" (Italics mine.)

The Danger of Lead

The findings of many medical authorities point to the possibility that in thousands or tens of thousands of cases, ailments attributed to other causes may actually be the result of lead poisoning. Dr. Edward C. Vogt of the Infants' and the Children's Hospitals in Boston, reported that "lead poisoning in children is more common than generally suspected and may be the cause of obscure neurologic and gastro-intestinal complaints." Again, the Journal of the American Medical Association says: "Lead poisoning may simulate almost every other disease of the central nervous system. Whether the minute quantities often present have any bearing whatever on obscure nervous symptoms is an important question for serious consideration in the future." One writer believes that in some cases, slight degrees of lead poisoning may make children pale, listless, backward, without appetite, perhaps suffering from headache—obscure symptoms which could never be attributed directly to lead."

How serious can be the effects of lead poisoning, such as might result from insecticide residues, is also pointed out by Dr. Rabinowitch of the Montreal General Hospital, who considers that lead poisoning may be responsible for many heart and kidney diseases. In an address delivered in December, 1933, he said, "Lead is known to produce the severest forms of heart and kidney diseases. Is it . . . not possible that exposure of the human body to small amounts of lead over periods of years may have the same effect as large quantities over shorter periods?"

Affects Heart

A technologist in the Department of Agriculture has stated that less than two-thousandths of a grain of lead, taken into the body daily for several years, could cause chronic lead poisoning. *The Federal Food and Drug Administration of the Department of Agriculture today permits about 12 times this amount of lead residue to remain on each pound of fruit or vegetables.*

Although the danger of insecticide residues has been recognized since the beginning of the century, our food control officials placed no limits whatsoever on such residues until 1926. Limitation was then attempted not because of the danger to health but because England threatened an embargo on American apples unless the heavy residues of arsenic were reduced to what is called the "world tolerance" of one hundredth of a grain of arsenic per pound of fruit. In 1927, the government ruled that arsenic residue on apples for export must not be greater than the world tolerance, but that *residues on apples for domestic consumption could be two and a half times as great.* During the succeeding years the official limit on arsenic was gradually reduced to the world tolerance. But the government has never tested enough of the annual harvest of fruits and vegetables to be sure that excess residues do not contaminate great quantities of produce. Nor is there any reason to believe that even so little as one- hun-

Governmental Ban

dredth of a grain of arsenic per pound is safe; particularly since arsenic enters the body with a great many different foods. (In addition to fruits and vegetables, arsenic is frequently present in chocolate, candies, gelatin, baking powder, and even in milk. Cigarette smoke carries both arsenic and lead into the body, since lead arsenate is used on the tobacco plant.)

England did not complain about lead residues, and since trade and not health is the concern of government officials, no actual limitation was placed on lead residues until 1933. Officials had contented themselves with stating that absolutely *no* lead residues would be permitted, while doing nothing to limit them. In 1933, lead residues were officially limited to fourteen-thousands of a grain per pound—nine times the amount believed to cause chronic lead poisoning if consumed daily. But the fruit growers refused to accept this curb on their liberties, and, led by Senator Byrd of Virginia, the largest apple grower in the United States, they prevailed upon Mr. Wallace to increase the limit by nearly 50 per cent. Instead of warning the public to take what precautions it could to protect itself against residues, Secretary Wallace chose to help along the poisoning by issuing misleading statements telling consumers no residue hazard existed.

In England

If we assume that the use of insecticides poisonous to human beings is necessary to protect crops, three steps should have been taken by the Department of Agriculture as soon as the residue hazards were realized. First, a public warning should have been broadcast. Second, as many million dollars as could be used should have been set aside for research to develop an effective and practical insecticide not injurious to human beings. And third, the Department of Agriculture should itself have undertaken the job of removing poisonous residues by the chemical means available instead of leaving it to growers who are not technically competent to remove residues under some conditions, and who often could not afford to spend even the small amount needed for residue removal equipment. But a government which spends billions for armaments and to aid business would not even consider spending the five or ten million dollars needed to protect a hundred million consumers from the risk of residue poisoning.

What Should Have Been Done

There is little that the individual consumer can do to protect himself, but that little should be done. While all fruits and vegetables do not carry poisonous residues, there is no way of knowing which are contaminated and which are not. Only such root vegetables as potatoes and carrots and citrus fruits can be considered as quite safe (citrus fruits are sprayed with arsenic, but the arsenic does not penetrate into the fruit; it does, however, have the effect of cutting down the important Vitamin C content.) If possible, fruits and vegetables should be peeled. The stem and flower ends of fruits, where residues tend to collect, should be discarded. With leaf vegetables which form into heads, such as cabbages and lettuce, the outside leaves should without fail, be torn off and thrown away. These outside leaves sometimes carry dangerously large residues.

Fruits and vegetables form so important a part of the diet that they cannot safely be omitted, despite the residue hazard. To avoid the risk of residue poisoning by avoiding contaminated foods would be to run the grave risk of the vitamins and minerals which such foods deficiency diseases resulting from the lack of supply.

"Pink Tooth Brush"

Four out of five do not have pyorrhea. What causes bleeding gums and what can be done about it.

BILL-BOARDS, subway, bus and trolley advertisements, radio broadcasts, magazine ads and circulars everywhere warn us dolefully of the dangers of "pink toothbrush." Many of us have taken these ads seriously on occasion, wondering whether we too might not become a railroad president if we could get rid of "pink toothbrush," wondering whether we are not, after all, in the same position as the movie star who, for all his Grecian profile, has bleeding gums.

The heart of the manufacturer of toothpastes and powders has swelled with joy since these advertisements have succeeded in getting many with bleeding gums to buy a toothpaste in the hope of cure. But the value of such pastes and powders in curing bleeding gums is as great as the value of crossing fingers in the face of danger.

A Symptom

The causes of bleeding and tender gums are various. A pink toothbrush may be the result of using a toothpick too energetically. On the other hand, it may be caused by a serious blood disease. Whatever the cause, bleeding gums must always be regarded as a symptom, as a sign of some definite condition which needs correction.

Gum Exercise

Most common of all such conditions is that in which the gums have become soft, spongy and inflamed from lack of execise. Our savage ancestors, in prehistoric days and later, exercised his gums by eating tough foods. We eat well cooked, mushy and soft foods as a rule. Consequently, we should supplement what little exercise is obtained from eating apple pie with the correct use of the tooth brush.

Other Causes

Other causes of bleeding gums are ill-fitting crowns, improperly fitting clasps, fragments of toothpicks. Often there is a slight space between two adjoining teeth. Food packs in between these teeth and injures the soft tissue. Bleeding and tenderness usually follows and may even result in destruction of the bone underneath the gum, with subsequent shifting and loosening of the teeth.

The gum may become inflamed through the failure to use a toothbrush. In such cases the eating of pasty, over-cooked food which sticks to the gum and forms a film, irritates the gum and helps to cause tooth decay.

What to Do

Knowing then that bleeding gums may be a symptom of a variety of conditions, it is necessary to have the cause diagnosed by a dentist. If the cause is an ill-fitting crown or clasp, it should be replaced. If the cause is lack of exercise, the toothbrush should be used properly. If the cause is a disease of the system, the patient should go to a physician for diagnosis and treatment.

The Toothbrush

In most cases, correct use of the toothbrush will toughen the gums so that they become less susceptible to bleeding. It is important to remember that it is the toothbrush and not the particular paste or mouth wash used on the which can also be used to maintain the health of the gums and teeth.

A Simple Remedy

An inexpensive mouth wash which will aid in diminishing the inflammation of the gums and which can also be used to maintain the health of the gums consists of the following:

Dry salt.
Sodium bicarbonate.
Borax.

Take one cupful of each. Mix well. Place in a covererd jar. When using, put one level teaspoonful in a glass of warm water. Rinse mouth at least twice daily, before breakfast and before going to sleep at night.

The proper way to use the toothbrush will be discussed in the June issue of HEALTH AND HYGIENE.

DEATH COMES to the CHEMICAL TRADES

Benzol poisoning ranks as a major occupational health hazard. A cheap solvent, benzol is widely used in industry although it is almost impossible to prevent its harmful effect on the workers.

THE next time you go into a shoe store and buy shoes or ride in an auto consider for a moment that one of the workers who made it possible for your shoes to have rubber heels or the auto to have rubber tires, died because of his work. He died of benzol poisoning. Perhaps you eat canned food; if the food tastes good and is unspoiled we can thank the chemists who have worked out sealing mixtures for tin cans. But the chances are great that some workers died in making that mixture. They died of benzol poisoning. Benzol poisoning has caused deaths in the manufacture of paints, shellacs, varnishes and dyes, as well as in the manufacture of rubber and sealing mixtures. Finally, explosives cause death not only in battlefields but in the factories where they are made. This is because of the benzol used in munitions making.

In one of the large mills in Pennsylvania a tank used in the preparaton of chemicals has broken down. The tank is drained, steam is blown in and then the tank is left to air for a week. Two workers go down into the tank to repair some coils. One of the workers comes out all right. The other has to be carried out. Within two hours he is dead of acute benzol poisoning.

Six Girls Dead

In a canning plant in Maryland eleven young girls develop nose bleed. Black and blue spots on their bodies. They go to the Johns Hopkins Hospital in Baltimore. All efforts of the doctors prove useless. Six of the eleven girls, all at an age of 14 and 15, die. They have become victims of benzol poisoning. The sealing mixture used in the cans contained rubber and benzene, a form of benzol.

Benzene is not to be confused with benzine. The latter, spelt with an "i", does not cause poisoning. It is a fluid made from petroleum and contains many chemical substances. Benzene is a fluid that contains only benzol, one definite chemical substance. It is extremely poisonous.

Benzene is used as a solvent. This means that it can keep other substances in solution. Many chemicals will not work, and many chemical reactions cannot be brought about, unless they are in fluid form. Benzene is used to get them into fluid form, it dissolves them. It is thus an important part of many industries.

Cause of Sudden Death

Acute or sudden death from benzene poisoning occurs in workers that have to clean or work in tanks where benzene has been used. They are usually steam fitters who go down into the tanks to fix pipes. It is very difficult to get rid of the benzene vapor in these tanks. As in the case of the Pennsylvania mill described above, the tanks can be washed thoroughly with water, blown through with steam and then left to be aired thoroughly for one week and yet enough benzene vapor to kill a man will be left. Only one part of benzene to 100,000 parts of air is needed to kill a man quickly. The cause of death is simple. Benzene vapor acts on the brain. When it was first discovered, doctors thought that benzene could be used as an anesthetic, in place of ether, chloroform or laughing gas. They soon found that it was altogether too dangerous for such use. It causes sleepiness and loss of feeling but very soon convulsions set in and death results. Death occurs in from 30 minutes to 4 hours.

Recently two deaths from benzene poisoning were reported in New York State. Two workers, working on a machine used in painting fabricoid, died. The fabricoid was run in a belt over a hot pipe. A solution containing benzene was poured over the fabricoid. Enough benzene vapor was formed to kill the two men. It is interesting to note that the shift was from 8 to 16 hours a day. The official report says that there was a great labor turnover. The workers could not stand the vapors. Almost all the workers developed nose bleeds. Bleeding is a sign of drawn out (chronic) benzene poisoning. Tests were made to determine how much benzene vapor was in the shop air. The company did not order these tests in order to protect the workers. The tests were made to find out whether there was enough of the vapor to save and use again.

Prevention Difficult

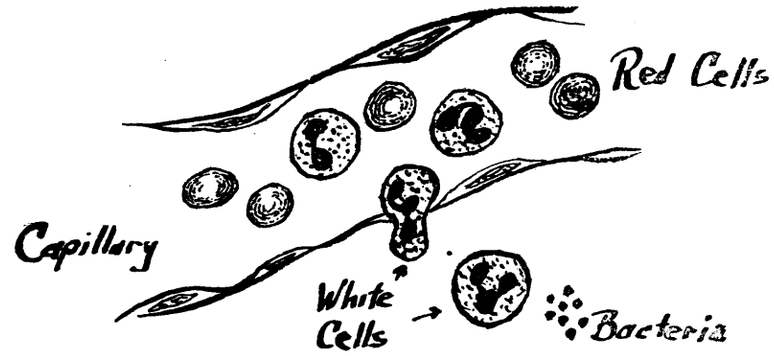
Many methods have been suggested for the prevention of benzene poisoning and the protection of the workers. The tanks have been thoroughly washed out with water, steam and air. Mice have been let down in a cage and if the mice do not die, the task is considered safe. However, accidents have happened even with these precautions.

Masks have been used but deaths have occurred to workers wearing them. The benzene can get into the body through the skin as well as through the nose and throat. If a strong solution of benzene is rubbed on the skin it will cause death even more quickly than through breathing. Masks therefore do not protect completely.

Effect of Benzene

The chronic, drawn-out type of benzol poisoning is different from the acute type in its course. It is just as bad, however, it kills at least 60 per cent of the sufferers. In chronic benzol poisoning, the workers suffer from *aplastic anemia.* This means that the worker has a lack of the proper amount of blood because the bone marrow has been poisoned. The function of the bone marrow in the body is to produce new blood cells. When the bone marrow is out of order, a lack of blood arises. Benzene damages the bone marrow. It destroys the cell factory.

Blood is a complex substance; there are many things in it. If blood is drawn off from a vein and let stand in a tube or dish the blood will *clot.* The blood will become solid. You can turn the dish upside down and the blood will not run out. If the blood is left to stand in the dish for a while longer, an interesting thing occurs. The clot retracts or pulls itself away from the sides of the dish and floats around in a clear, yellow fluid. When we examine this under a microscope we find that the yellow fluid is clear. The jelly-like clot, however, contains many little forms. We find that blood contains *fluid* elements and *formed* elements.



The white blood cells leave the blood stream in the capillary and move to attack harmful bacteria.

These formed elements are of three kinds. They are: the red and white blood cells and the blood platelet. The red cell carries oxygen through the body. (See How Your Body Works.) Through a complex process the oxygen in the air is carried to all parts of the body by the red blood cells. If the blood supply to any part of the body is stopped, that part of the body dies because the red blood cells are not bringing it oxygen. Thus red blood cells are necessary for life.

The White Blood Cells

The white blood cells have a different use. The purpose of these cells is to protect the body from germs and bacteria. Some white blood

cells eat bacteria; others throw out chemical juices that envelop the bacteria and stop their motion. The white blood cells are carried by the blood to any part of the body threatened by infection. As an example, bacteria attack the skin. The white blood cells are carried to the point. They battle with the bacteria. A boil is formed. Before the bacteria are killed many of the white blood cells die. A dead mass of tissue is formed. This bursts through the skin as pus. Then new skin has to be built. This is done by a special kind of white blood cell.

Blood Clots

Finally there are the blood platelets. These are very small bodies, smaller than either the red or white blood cells. The purpose of the platelets is to help in clotting the blood. If blood did not clot every time a cut was made, the blood would not stop flowing; people would bleed to death. So slight a cut as is made in shaving would result in death. The blood clots or hardens so that the broken blood is plugged up. The platelets take care of this.

All these types of blood cells are constantly used and must be replaced. They are formed in the bone marrow. *Benzene damages the bone marrow so that it cannot produce any or enough of these different blood substances.* Workers with chronic benzol poisoning have a lack of blood platelets. They bleed easily and often, suffering from nose bleeds, bleeding gums, etc. These workers have a lack of white blood cells and become liable to infections. Finally, the bone marrow slows down in its production of red blood cells. The body does not get enough oxygen. The worker becomes weak, must breathe faster and faster, is constantly out of breath. There are not enough red blood cells to carrry the oxygen through the body.

Transfusions Necessary

The treatment for chronic benzol poisoning is the giving of many blood transfusions. Since the bone marrow cannot manufacture enough cells, the blood cells of another person are given. At least 50 to 75 transfusions must be given if there is to be any success in the treatment. This is a costly procedure. Most workers do not get this treatment.

The Best Cure

The best way to treat benzol poisoning is to prevent it. Prevention, however, is almost impossible. Ventilation is a good idea but so far no ventilating system has been found which is good enough to get rid of the benzene vapors. Masks, as pointed out above, are not sufficient. What then can be done.

Profit from Poison

The surest way to prevent benzol poisoning would be to stop the use of benzene in industry. Before the World War, benzene was hardly used. Not one death from benzene poisoning has been reported. When the American munitions makers began making great quantities of explosive materials for war use, benzol was instituted as a solvent. It has the advantage of being cheaper than other solvents. After the war, with large plants for making benzol available, its use was continued. Dr. Alice Hamilton, perhaps the best authority on benzol poisoning in the country, has said about benzol: "To the manufacturer, the introduction of this cheap and powerful solvent may seem an advantage, to the physician interested in the producer more than in the product, it can only seem a disastrous innovation."

Safeguards

Since the best substitute for benzene, petroleum ether, is much more expensive, what can be done besides ending the use of benzene in industry. The key to this may be found in the practice of the Soviet Union. There they found that most occupational health hazards could be greatly minimized if the working day was shortened or the work lessened. They found that with the fatigue, the workers grew careless, were less watchful of procedure which would safeguard their health. So in the case of benzol poisoning.

Although masks and ventilation are by themselves inadequate, when used together with conditions which enable the worker to keep clean, they help considerably. When a worker sweats, the sweat helps the benzene vapor to collect on the skin and to get into the body. Clean bodies and clean underclothes, however, are only possible under good working conditions. Therefore, if benzol is to be used instead of harmless substitutes, it should be used under conditions where the workers are not subject to long hours or speed-up, get a good enough wage to maintain a good diet and changes of clothing, are enabled to keep up their health. It is significant that the workers in the fabricoid plant mentioned above, worked on 8 to 16 hour shifts.

Going Going Gone!

Dandruff can be cured before it causes baldness.

NEAR the top of our list of common and useless things is the shower of scales from the scalp known as dandruff. Prevalent throughout the world, dandruff, or *seborrhoeic eczema*, is both a chief cause for baldness and a source of income to patent hair lotion manufacturers.

Everyone knows what dandruff looks like. The scalp is usually covered with a layer of grayish scales. At first, these scales adhere to the skin. Later, they lie loosely among the hairs. A slight movement of the head shakes them off. The scales look dry but are more or less greasy. The greasier the dandruff, the less frequent the loss of hair. It is the extremely dry type of dandruff which causes the quickest cases of baldness.

The Cause of Dandruff

Although much has been said and written on the subject, the cause of dandruff is not definitely known. The disease is apparently caused by a germ. It also seems to be mildly contagious. It may be caught through the use of the brush or comb of a person with dandruff. There is no agreement among medical men and bacteriologists as to the exact germ. Several germs have been suspected but there has been no proof pinning the offense on any one of them.

A disease of the scalp, dandruff results in a chronic inflammation. It causes the formation and shedding of dry or greasy scales and usually ends in partial or complete baldness.

Treating Dandruff

While there is no specific treatment for dandruff, many lotions and salves give good results. We give here only one form of treatment. This treatment is effective in most cases and is easy to carry out at home.

Shampoo the head. This should be done at least once a week. If the scales come back or the hair gets very greasy in two or three days, shampoo two or three times a week. Although any good face soap may be used, tincture of green soap is recommended. Soak the hair in warm water, apply some soap and rub vigorously with the finger tips. A good lather should be formed. After masaging with the finger tips for five to ten minutes, rinse *all* the soap out of the hair.

Lotion. Apply the following 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 finger tips. The rubbing in process should take from five to ten minutes. The lotion can be made up cheaply at any drug store.

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

For blonde hair, use *acetyl-resorcinol* in place of resorcinol which may produce an unnatural green color in blond hair.

If the hair gets too dry, because of the use of the lotion, rub in a little olive oil.

Massage the scalp. This may be done with vigorous use of the comb and brush as well as with the finger tips. It should be done during the shampoo and application of the lotion. It should never be done to the point where the scalp becomes irritated or small abrasions are produced.

Length of Treatment

Treatment for dandruff must be continued for several months after the scalp appears clean. Later on, it need be done only once or twice a week. This is to prevent the return of the dandruff. Should the scales reappear, the daily treatment must be started at once. The scalp should be constantly watched since dandruff recurs quite readily.

Prevention

Never use a comb or brush belonging to another person. Have your own personal brush

and comb and do not let others use yours. The same applies to hats.

Going, Going, Gone

The country is flooded with hair lotions for which all sorts of claims are made. Some are supposed to make the dandruff disappear by dissolving it. Others are supposed to cure all sorts of scalp diseases in addition to ending dandruff. So too with loss of hair. Pictures illustrate the argument. One shows a bald-headed man; the next a man with a full crop of hair. Or one may see pictures of spotted baldness with accompanying pictures of cures. The quacks guarantee cures and offer to return the money if their treatment fails. Try to get it. Should the victim complain after his treatment, that he is just as bald as before, they will tell him that his glands are not normal and these require special treatment. The treatment would have worked had it not been for those mischievous glands. They have other excuses too. The hair growers do not fear their customers' ill will. In this large country there are enough people all too ready to try these treatments.

The manufacturers of hair tonics and the hair culture institutes have not the slightest scientific basis for any of their claims. The government offers no protection to the people who have been fooled and robbed by these fakers know this.

How It's Done

There are some cases of baldness in which the hair comes out in spots. A large number of these cases are cured without treatment. The hair growing quacks take the credit in such cases and point out to their prospective customers how miraculous their treatment is. They do not tell the public that the usual, probably hereditary, type of baldness is an entirely different condition which will not respond to any treatment.

It is perfectly natural for a bald man to want a full crop of hair. Indeed, it is often necessary, as in looking for a job. Most of the hair restoring establishments have taken advantage of this. They employ all the tricks of modern business. Lies and false alarms are called advertising and the practice of fraudulent and worthless methods is merely "business psychology."

Mumbo-Jumbo

The larger hair restoring firms maintain chain stores full of all sorts of mechanical and electrical gadgets to dazzle the victim and build up false hopes. Smaller stores are similarly equipped, although on a less pretentious scale. The customer goes through a sort of mumbo-jumbo ritual in which he passes through the hands of several attendants who bedeck him with towels and assault him with electrical buzzers and vibrators, lotions of several smells and colors, manual massage accompanied with bizarre and useless flourishes, and finally, baking and drying machines and Alpine lights.

Worthless Treatment

Not one hair can be brought back to life despite all this treatment. That part of the hair which we see above the surface of the skin is called the shaft. The shaft is dead matter, devoid of all sensation and life. It passes through a minute canal in the skin. This canal is known as the follicle and leads to the hair root. The root is a group of living cells. It is the growth of the hair root upwards through the follicle which produces the hair.

After hair has grown to its full length, it remains at that length for two or three months. It then falls out, only to be replaced by a new hair. So long as the root is alive, hair will grow. No hair will grow after the root is dead. Definite baldness occurs after many roots have perished. Since we do not know how to bring these hair cells back to life, or how to replace them, there is no cure for baldness at the present time.

Stopping Falling Hair

However, most loss of hair is due to long standing dandruff. We are at least able to stop further loss of hair in such cases by removing the dandruff. But if the disease is not ended, dandruff will, after a time, cause the death of the hair roots. Therefore the treatment described above should be started at the first sign of dandruff and carried on persistently for several months. Do not become alarmed at seeing many hairs come out after the application of the lotion and massage. If the roots are still alive, new hair will grow.

Sunshine and Hats

Many believe that sunshine is beneficial and many go without hats in the spring, summer and fall months. There is no scientific evidence that either the sun or going hatless will prevent loss of hair. Nevertheless, one should avoid wearing tight hats.

HOW YOUR BODY WORKS

How Breathing is Done

BREATHING, or respiraton, means to most of us, the simple taking in of fresh air and the getting rid of old, used air. Actually, it is more involved. It can better be understood if we consider breathing to be an exchange of gases. The body and the individual cells get rid of one gas and take in another. The gas that is taken in is oxygen, the gas which is sent out is carbon dioxide.

In order that the body and each individual cell may carry out this exchange of gases, two sets of apparatus are used. These two sets of apparatus are the respiratory and the circulatory. Let us first describe the respiratory.

The Lungs

A chief part of the respiratory system is the lung. The lungs consist of a series of tubes (known as *bronchi*), which are connected with the nose and mouth through the wind pipe or *trachea*. These bronchi lead to innumerable air spaces. These spaces or air sacs are separated from the blood circulating around them by a very thin membrane. This membrane is so thin that gases can pass through it easily although the blood cannot.

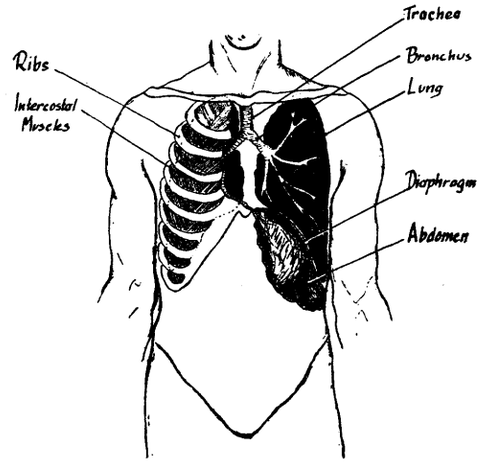
The lungs are placed within the cage made by the ribs and normally float free within this space being attached only at the center. It is at the center that the arteries, veins and bronchi enter the lungs. (See diagram.) The lungs are separated from the chest wall by a smooth membrane called the*pleura*. When a person's pleura is inflamed, he has pleurisy. Pleurisy is painful because one must keep on breathing, constantly using and moving the inflamed part, unable to rest the inflamed membrane.

Respiratory Muscles

The work of respiration, the bringing of air into the body and expelling the used air, is performed by certain muscles. These are the *Intercostal muscles*, the small muscles between the ribs, and the *diaphragm*, the muscle which separates the chest from the abdominal cavity. When the intercostal muscles pull the chest wall out and when the diaphragm contracts downward, the amount of space within the chest is *increased*. When the pleural space is thus increased, a vacuum is created and the lungs expand to fill the vacuum, air rushing into the lungs. When the intercostal muscles and the diaphragm relax, the space within the chest is decreased and the air is pressed out of the lungs.

A Bellows

We can thus liken the chest to a bellows. When the handles of the bellows are pulled apart, there is more space inside and air rushes into the bellows. When the handles are pushed together, there is less space and the air is pushed out. Many people think that we breathe with our noses. Actually, we breathe *through* our nose and mouth but the work is done by the muscles making a larger or smaller chest space.



The Respiratory Apparatus

The intercostal muscles and the diaphragm, however, are not the only muscles which can be brought into play. When need arises, since respiration is essential to life, every muscle in the body which can help in the least way may be used. Watch a runner who has just finished a hard race and you will see the neck muscles working in an attempt to raise the upper ribs, aiding the intercostal muscles increase the chest space. You will also see the muscles of the

face expanding the nostrils so as to permit quicker entrance of air.

These muscles are all under the control of the nervous system. It is the nervous system which regulates normal, regular breathing. Although the exact group of brain cells has not been located, it is known that the "respiratory center" exists in the lowest part of the brain, that part which is called the medulla oblongata. This is just above the spinal cord. From this "center" the stimulus is carried down to the nerve cells in the spinal cord which connect with the muscles used in respiration.

We have pointed out that breathing consists of getting rid of carbon dioxide by the body and taking in oxygen. When the blood which supplies the "respiratory center" in the brain contains too much carbon dioxide, the "respiratory center" sends the stimulus through the spinal cord and nerve cells, which increases the activity of the muscles. When there is less carbon dioxide in the blood around the "respiratory center", the activity of the muscles is less. There is thus a normal rise and fall.

Circulation

We now pass on to the circulatory apparatus and its part in breathing. The action of the lungs is not a function of these organs alone but of *every cell in the human body*. If breathing stops, the entire body dies. Obviously, the exchange of oxygen and carbon dioxide cannot be a function merely of the lungs but of the body as a whole.

Combustion

No cell can live without breathing. Each cell must absorb oxygen in order to live and to perform its specific job. The cell must also get rid of the final waste product, carbon dioxide. What happens in the cell is combustion. The chemical processes of fire and respiration are identical. The only difference is that in fire, the process of combustion is much more rapid and intense.

When respiration is stopped, the body cells act like a flame in an enclosed space. They may not all die at once when the heart or lungs stop working—in fact a corpse will usually grow a certain amount of beard—but eventually, like a muffled candle, they all flicker and die out. Unfortunately it is the most essential and important cells of the nervous system which are most sensitive and which are injured or die first of all.

How does the oxygen get to each cell and how is carbon dioxide removed? This is done by means of the blood stream. The circulating blood brings oxygen to the cells and carries the carbon dioxide away.

The Heart's Action

Therefore, to understand respiration, we must know something about the circulation of blood. The blood is pumped from the right side of the heart into the lungs, where it gives off carbon dioxide and absorbs oxygen. From here it flows to the left side of the heart. The left side of the heart pumps it into the general circulation supplying all the organs of the body and the lungs. The blood is pumped through the arteries into the tiny blood vessels, the capillaries. Oxygen is taken from the capillaries by the cells of the body in proportion to their need for it.

The blood, having given up its oxygen and taken carbon dioxide in exchange, flows back through the veins to the right side of the heart, where it is once more propelled into the lungs.

Haemoglobin

Carbon dioxide dissolves in water. It is carried to the lungs for the most part simply in solution in the blood fluid. Oxygen, however, is only slightly soluble and requires a special vehicle. This vehicle is a complex, iron containing a compound called haemoglobin. Haemoglobin is found in the red blood cells and acts as a carrier for oxygen.

Thus, in the lungs where there is a good deal of oxygen in the air spaces, oxyhaemoglobin is formed. This is the combination of oxygen and haemoglobin. In the tissues of the body, where there is relatively little oxygen and where the cells are in need of it, the combination is broken up and the oxygen is released into the tissues.

As in all other matters, the body has a good deal of adaptability. Thus, people who have lived for any time in the thin atmosphere of high mountains, where there is less oxygen, develop more haemoglobin (and more red blood cells) than is normal for the rest of us. The same is true for people with certain types of heart disease. The heart being inefficient, more haemoglobin carrying oxygen is necessary.

Breathing Not Simple

Thus we see that breathing or respiration is not a simple matter but is highly complicated. It concerns not merely the lungs, nose and mouth

(*Continued on page* 30)

Readers' Correspondence

The Medical Advisory Board, in editing HEALTH AND HYGIENE, *welcomes letters from its readers. We especially want correspondence on local health matters. As doctors, we know some cures and causes of disease but we do not always know the conditions under which workers live and contract illness. To help make this a real workers' health magazine, we open these columns to letters from readers. Names will not be used unless authorized, but no anonymous letter will be accepted for publication.*

From Wichita Falls, Texas

A bill has been introduced into the Texas Legislature providing that all licensed physicians shall be admitted to any tax-exempt hospital whether or not he is a member of a medical association. At present, only physicians who belong to the American Medical Association may call or operate upon patients in Texas hospitals. Thus all Negro and a great many white physicians are automatically barred.

The bill is being bitterly fought by the Dallas County Medical Society and the Southern Clinical Society, organizations of the more prosperous white physicians.

The Masons have lined up with the Medical Societies. The director of the Masonic hospital for crippled children says, among other things: "If a Negro doctor had a case under the terms of this bill, he could insist on our taking the case, putting the Negro boy in with our white children. This would destroy the effectiveness of our institution."

In particular, the bill is of enormous importance to the Negro people. Negro patients in Texas hospitals are often neglected or shown the rankest discrimination. The presence of Negro physicians would make for better treatment of these workers. Moreover, the removal of the ban would give Negro doctors a better chance to live from the earnings of their professions."

Any Texas readers of HEALTH AND HYGIENE should write to their representatives in the State Legislature urging passage of House Bill 464.

From a New York City Teacher

YOUR first number of HEALTH AND HYGIENE is very good. It's always such a satisfaction to see fakers exposed and names named. Hope you do lots more of it.

Dr. Williams' article is good. But it seems more likely the sort of thing we teachers have always been given in our college courses. I mean it's lovely and, of course, right that a child should have security and should be kept from too great responsibility and worry, etc.

However, I can't see how unemployed parents living on relief in fire-trap tenements, cold in winter, hot in summer, can do an awful lot to see that the 'young child must always be kept secure.'

Won't a member of your board write an article telling how millions of harassed parents who must exist on relief can keep their children "mentally healthy."

From Detroit, Mich.

"I was glad to get my first copy of HEALTH AND HYGIENE but I have some criticism to make of it. I was glad to read the editorial and know that with such a policy you will be doing a great service.

"My chief criticism is that a lot of the articles end up in the air. The article on the Safe Period, for instance, was somewhat disappointing. It does not give a method to take the place of the safe period. I realize that this may be due to the birth control laws but I hope some way can be found to give such additional information. The article on the muscle-builders is another example. Muscle-building by mail is a racket! So what? Why don't you tell us what can be done for health and strength? The same might be said of some of the other articles.

"On the whole, however, I liked the magazine and expect that future issues wil remedy the defects I have noticed."

We are glad to get such letters as the above because with the first issue we were only beginning to solve the problems connected with workers' health education. In certain cases, it is unavoidable that articles appear incomplete. The birth control laws, for example, do not permit our giving much positive information. A question dealing with the safe period article appears in the Question columns. Articles may also seem incomplete because we are dealing with such a wide field, have so much information to give out, that we cannot hope to do it all in one issue.

ried out under such organization is most apparent to the scientist in medicine. Indeed, one is astounded at the stupidity, the waste of energy and money, the duplication of work, proprietary secrets and exploitation of scientists which is going on in capitalist countries.

Few scientists in the United States seem to realize the true motive behind the glamorous proclamations of their benefactors. Pharmaceutical house "A" has a research staff that works on the purification of a glandular product. The research staff of Drug house "B" works on the same problem and an identical product appears on the market from each house but under a different trade name.

Another example is that of statistics: in capitalist countries statistics are made from reports of private physicians and hospitals. These reports are often influenced by insurance claims, social standing or economic factors, again, records of illness are the property of the hospital or private physician and there is no uniformity in the methods of keeping those records. One can readily see that statistics compiled upon such evidence are in many instances far from scientific. Not so in te Soviet Union, capitalist economists and scientists admit that the U.S.S.R. is the only country where statistics are most reliable. Research is in the hands of *research institutes*, not profiteers.

Efficient Organization

A solid scientific foundation is necessary in order that an organization caring for the health of 160 million people should work efficiently. When a child is born an entry is made in a blank book which will be the medical and social record of that individual until the day of his death. To facilitate such careful recording each ndividual belongs to the clinic in the district he resides in. He reports there twice a year for a periodic examination. In case of illness a doctor is called from the clinic. He decides whether the patient can be treated at home, in the clinic or is in need of hospitalization. The medical record on file in the clinic is an indispensable aid to the physician in such cases. The social service worker attached to the clinic serves as an important link between the place of employment, the home and the clinic. She investigates the patient's illness from the social standpoint.

(Continued from page 13)

(The social service work is too important to dwell upon in this short space.)

To carry out work of this nature in a country the size of the Soviet Union, a great army of medical, nursing and social service personnel is needed. Great strides have been made in this direction and figures can be best evaluated when compared with those of 913.

DOCTORS AND HOSPITAL BEDS IN THE U.S.S.R. (The Sentral Republic of the Soviet Union.)

In Cities	*1913*	*1933*
Physicians	10,000	35,257
Population per Dr.	1,617	750
Hospital beds	59,675	175,526
Creches	14	3,074
Capacity of creches	550	199,854
In Villages	*1913*	*1933*
Creches		328,371
Capacity		3,184,715

HOW YOUR BODY WORKS

(Continued from page 27)

but the muscles, the blood fluid, the red blood cells and the efficiency of the heart and circulatory system.

Causes of Suffocation

The body cells can "suffocate" for any one of the following reasons: Paralysis of the muscles of respiration, as occasionally occurs in infantile paralysis. A shutting off of the upper air passages (trachea or the larger bronchi), as by inhaling a foreign body. 3) **The throwing of** a large amount of lung tissue out of function, as in pneumonia, tuberculosis, or silicosis. (4 Interference with the oxygen carrying power of the blood. This can be caused by a poison (such as snake venom) which dissolves the red blood cells; an agent (such as *carbon monoxide*) which forms a soluble combination with haemoglobin in the red blood cells, preventing the formation of oxyhaemoglobin; anemia from hemorrhage, chronic illness, or any other cause. (5 Inadequacy of the heart muscle as a pump to push the blood around from the lungs ot the other organs and back again.

We see then that the poets are not far wrong when they speak of the "spark of life" or of an "inner fire". Breathing is just such a fire. Prevent combustion and death is the result.

The Doctor, The Patient and The Clinic

THE doctor sits in his office. He is trying to read some very interesting reports on seven cases of cancer of the lungs. In the middle of the third case figures begin to appear between the lines—figures that have nothing to do with cancer of the lungs. $70 for rent. $10 for the telephone bill. $65 on the next payment for the $900 fluroscope. All have to be paid within the next few days. And hardly any patients during the last two weeks. Maybe it would have been better not to have bought the fluroscope. But then you couldn't do good chest examinations without one. But then again, there weren't any patients coming into the office anyway.

Four long years of medical school at terrific cost for tuition, books, microscope. Hundreds of dollars that had been a tough job for his parents to raise. Then two years of interneship at the hospital. Long hours, riding the ambulance, making rounds doing all sorts of hard dirty work—without one cent pay. All in hopes of the great day, when he would open his office, filled with the most modern scientific equipment to take care of the flocks of patients during office hours—9 to 12 and 6 to 8.

Yes, he took care of flocks of patients, but not at his office. At the clinic, in the few hours between 2 and 5 in the afternoon, there were so many patients he could hardly examine them properly. They waited in long lines for hours until the call, "Next case." But he got nothing for his work at the clinic. His work was entirely free though the patients have to pay a fee for their cards and for medicine.

This story is repeated in the minds of thousands of doctors in America today. Bills that have to be met, and no money to meet them with. Expensive training, years of hard grinding work of preparation and study—and then no means of making a living. Is it any wonder that many doctors have come to feel that the clinics are robbing them, that the patients they treat there are cheating them out of a living?

The Patient

A long line of patients sits at the clinic waiting and waiting. When his turn finally comes around, he hardly has a chance to say what's the matter with him before the fatal words, "Next case" are bawled out. Everybody seems to look at him with suspicion. The eyes of the clerk who sells him his card seem to say, "You are a millionaire in disguise and you have no business here." The tone of his voice when he questions him about his earnings seems to say, "I know you are lying.'

The doctor doesn't treat him much better. He wishes that he had the two bucks to go to that same doctor's office, because he knows that he would be treated entirely differently. That same doctor who is so irritable and abrupt in the clinic would listen to him attentively and politely in his office. He wouldn't be made to feel that he is getting a great favor.

In the mind of the patient, the doctor becomes a cruel and brutal blood sucker. When you have money to pay, you are a patient; when you haven't, you become nothing more than a guinea pig.

With some variation in different cities, this is the situation in medicine in America today. Armies of doctors, trained and skilled, wasting their time in empty offices, then rushed to death in clinics that pay them nothing. Bigger armies of patients in need of the doctor's skill, getting only quick, casual examinations and treatments.

Some doctors cry: Close the clinics. They give too much competition. Others say: Clinics should be for paupers only. Make each patient sign a pauper's pledge. Do not treat the patient unless a social worker has investigated the case.

Still others say that the clinics are not the trouble, the trouble is that there are too many doctors. Their solution is to cut down the number of students admitted to the medical schools.

Doctors though they are, they confuse the symptom with the disease. They want to treat the cough and ignore the tuberculosis. Luckily, more and more doctors are seeing the problem more clearly.

There are not too many doctors for the number of people who *need* their services. In fact,

too many for the number of people who can *pay* for medical care.

The doctor must realize that he is closer to the worker than he generally thinks. He is exploited like the workers because he depends for a aliving on exploited workers. These workers cannot pay for his services. The doctor then works for nothing in the clinic.

He is unemployed as surely as the worker is unemployed. When he sits in his empty office, he thinks of himself as unfortunate but not as unemployed. Yet he is as unemployed as a worker whose place of work has closed down!

Here we have stated some of the problems of the doctor and the patient. The answer lies in energetic action on the part of doctors and patients for unemployment and health insurance.

We invite comment on this article from doctors and workers.

RESTING FOR STRENGTH (Continued from page 12)

body separately until you are able to do it with the whole body. Do this for ten minutes. You will be surprised at the feeling of exhileration at the end of the session. The first five exercises will not be necessary after the last one has been mastered.

An Ideal Body

These exercises are suggested only as a means of combatting that "tired feeling." The ideal body is one in which all parts work well. It is well nigh impossible to get such a body with long working hours, with economic insecurity and uncertainty. What is needed is shorter working hours, more rest periods, playgrounds, gymnasiums and rest homes. It is impossible to get an ideal body with a few exercises after spending some hours at a body deforming task.

It would be good, for instance, if in every plant, rest periods were so arranged that relaxing and corrective exercises could be done during the working day. We cannot discuss here corrective exercises but we wish to say a word about posture.

Posture

Good posture is that position which enables the body to move and work easily and without strain on any part of the body. The best posture for the average worker is as follows. Feet slightly parted and parallel to each other, toes pointing directly ahead. Head high with chin in. Chest high with stomach in. Back flat.

The posture should not be rigid. There must be no tenseness but rather perfect freedom. In walking, the weight should be borne mostly on the outside of the feet. In pulling the stomach in, the common mistake is to tilt the hips backward. The hips must be tilted forward. To do this, place the hands on hips with thumbs in front and other fingers on back of hips. Now push in with the thumbs and push forward the lower part of the hips with rest of fingers. This will pull in stomach, tilt hips forward and flatten the lower back.

The observance of the above, plus a brisk walk as often as possible, will take care of an otherwise normal person's posture.

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SCIENCE *Aids The* Third Degree

A new frame-up weapon

A RECENT news item stated:

"Major Lynn G. Adams, State Police Superintendent, announced today his department has accepted "truth serum" as another means of criminal investigation rapidly replacing the much criticized 'third degree" of the old-time police methods.

Satisfied with the first test made a few days ago in Bellefonte, in which a suspect was exonerated after receiving an injection of Scopolamine, Major Adams said the serum will be used "every time we have an opportunity."

The law requires the consent of the suspect, Adams explained. Given permission, the police call in a practicing physician to administer it.

But let us see what Sollman, the authority in Pharmacology says about Scopolamine in his Manual. "In man," he says, "doses of one-sixtieth of a grain to one-twentieth of a grain produce in ten or fifteen minutes, fatigue, drowsiness and natural dreamless sleep, lasting several hours. The response, however, is variable. In some sleep is preceded by hallucinations which may be rather pleasant with small doses but which become violent if dosage is increased." Further on he says that "one-three hundredth of a grain to one-seventy-fifth of a grain have produced serious poisoning with cardiac and respitatory collapse."

In discussing the uses of Scopolamine in twilight sleep in conjunction with morphine he states: "Its advocates do not claim that it abolishes pain, but they assert that it successfully removes the memory of the experience in the majority of cases. The serious objections are—excessive thirst, headaches, difficult control of patients with chance of infection, blurred vision, ghastly delirium, persisting for a long time."

It is not uncommon for physicians who have used Scopolamine and morphine in child-birth to find women who become delirious and irrational, go completely out of their heads. In such instances they may commit all sorts of indescribable and obscene actions. They may babble incoherently, words and sentences which have absolutely no rational meaning and recover many hours later to remember nothing at all of what they had said and done.

Scopolamine was introduced chiefly because the mother could not remember the terrible pains of child-birth if completely under the influence of this drug. Many institutions have discontinued its use because of the danger and unreliability of its action. In a legal sense it would be somewhat like a man getting so completely drunk that he did not know what he said or did and considering him as telling the truth. Whereas under the law a drunken man is considered irresponsible. Scopolamine is an alkaloid obtained from various plants of the Solanaceæ; occurs in colorless crystals freely soluble in water and alcohol.

Thus they begin to approach in America the dope-fiends of Nazi Germany. The Pennsylvania State Police could seize a workman, perhaps during a strike, accuse him of being a murderer or dynamiter. Then in the presence of two or three police witnesses and perhaps a "bought" doctor, the workman could be injected with the so-called "truth serum.' Driven out of his mind by the poison, he would perhaps answer questions of which he knew nothing at all and hours later could be confronted by the police with a so-called legal confession made to order and exactly what the police wanted. This would certainly simplify things and the police would not have to spend time beating and bulldozing the unfortunate captive, in old-fashioned third degree.

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Your Questions Answered

The Medical Advisory Board will answer in these columns questions of the greatest general interest. Questions will also be answered directly. Names will not be printed but all letters must be accompanied by full name and address.

Question

C. M. of Newark, N. J., writes: "I was very much interested in your article on the "safe period" in the April issue but there are some points I did not understand. Is the safe period completely a fake, isn't it medium safe? I was also puzzled by the diagram. My friends insist that the days appearing black are supposed to be safe, those appearing in white are supposed to be unsafe. I think it is just the reverse. Which is the safe period?"

Answer

The unsafeness of the safe period is due to the fact that it is impossible to tell in advance when the ovulation time will occur. The "safe period" is not safe. You cannot depend on it because you never know when it takes place. We did make an artistic error in the diagram and do not blame you for associating the color *black* with something which is dangerous,—in this case, unsafe. However, your friends are correct. It is the white area which is most unsafe. If you will look at the diagram again you will see that above the white area is the letter "0". This indicates the ovulation time, or the days when, most frequently, an egg is expelled from the ovary. Do not attach too much importance to the diagram.

Question

S. K. of New York City writes: "My boy of four has granulated eyelids. The Doctor called it conjunctivitis and gave me a medicine for it. The granulation has not gone away although the medicine has been given four times daily for two weeks. When the boy's eyes grow tired the lids are slightly red and swollen with little yellow beads of granulation on the lashes."

Answer

The condition you describe is that of an inflamation of the membrane lining the eye and lids, and also an inflammation of the lid margins. The latter inflammation produces the scales on the lids which you call granulations. It would be advisable to clean the eyelashes night and morning with a cotton applicator made out of a tooth pick and dipped in a solution of peroxide. Keep the eyes scrupulously clean with constant boric acid washes and continue to use the drops the doctor gave you.

Question

M. E. of Stamford, Connecticut, writes. "My work calls for the handling of grease, dirt, and gasoline daliy. I noticed my hands began to turn red. It is also noticeable that the redness stops where the hand is no longer exposed, that it, at the wrist. I am massaging the hands with cold cream but this does me no good. The skin is very dry and at times the hands become very hot."

Answer

Both grease and gasoline are causes of irritated skin. There are many case of dermatitis (inflammation of the skin) caused by these substances. In some states, as in New York, the State Compensation laws allow for such cases. If your skin is sensitive to either or both of these substances you will continue to have dermatitis as long as you continue at this work. We realize that we cannot advise you to quit your job under the present economic conditions. You might check up on the Connecticut compensation laws. Meanwhile, apply *Lassar's paste* to your hands at night and clean them with olive oil in the morning.

Question

Mrs. W. R. of Hartford, Connecticut, writes: "I would like to know whether embedded tonsils which have disappeared into the sides of the throat will be troublesome or poison the system."

Answer

When tonsils are small and lie deep in the folds of tissue in the throat, they may be referred to as embedded. Tonsils so situated may or may not be diseased. The tonsil tends to become smaller with increasing age, and small tonsils which lie deep may be perfectly healthy. Normal, healthy tonsils will not cause trouble or poison the system, regardless of their size. A diseased tonsil may be the cause of frequent sore throat, or the place where infection occurs in such diseases as neuritis or arthritis.

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