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THE BODY'S INNER LINE OF FORTIFICATIONS



HERE IS NOTHING WHICH SO FAR TRANSCENDS ALL HUMAN COMPREHENSION as the battle of the body against its invading germs. The air about us swarms with them, except under special circumstances. On the top of a mountain or high in a balloon, one might be above the germs, of course, but lower down, in our common, work-a-day life we are constantly subject to their attacks, and, if vitality be low, we become easy victims. If we are depressed, for instance—then is just the time for them to get in their work. Thus do germs attack us when we are low physically and when we are low geographically.

THE IMPORTANT THING is to keep ourselves high up; in a state of high vital resistance. By this means we may resist germs for a considerable length of time, but even then they

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master us at last—everyone falls a victim to them sooner or later. Which explains why we become old: old age is nothing more or less than the result of a battle between the body and harmful germs, in which the body is defeated. Nearly all chronic diseases, too, are due in one way or another to the failure of the body to succeed in its battle against germs.

ONE AWAKES of a morning with a “rich brown taste” in the mouth, say; the tongue is coated, and this coating is made up of germs. Not unlikely the person may have banqueted the evening before and taken a large excess of food—more than he needed, more than he could utilize, more than he could digest and quickly assimilate, with the result that the remains putrefied and lay about in the colon, swamping the body with their poisons so that they could no longer deal with the toxins produced. In consequence the fluids of the mouth, which normally are capable of preventing the growth of germs, became so saturated with the products of decomposition as to have lost their power, and instead became a culture medium for germs.

GERMS ARE ALWAYS TO BE FOUND IN THE MOUTH. Under ordinary conditions of health they do not grow and develop there, but when the fluids of the body become polluted the fluids of the mouth lose their antiseptic properties and can no longer act as a defense against them. The outcome is a luxuriant crop of germs in a very short time.

IF GERMS ARE SWALLOWED, the stomach has ready a natural means of defending itself—the gastric juice. For the gastric juice is highly acid in character, on account of its hydrochloric

acid, and is thus a powerful antiseptic. Seal an ounce of gastric juice in a bottle and it will keep indefinitely. Other secretions of the body will undergo putrefaction, but this one secretion, the gastric juice, is antiseptic; it will not putrefy, will not undergo change, but instead will arrest putrefaction. Here is a good illustration of this fact: a dog was killed an hour after he ate a piece of putrefying meat, and the contents of the stomach were as sweet and fresh as though the meat eaten had been from the body of an animal freshly killed and entirely free from taint. It is because of this disinfecting action of the gastric juice that one can eat finnan haddie and other corrupt things that are used as food. If the stomach lacked the power to disinfect it the prime beefsteak which one swallows would become in a few hours most horribly loathsome through putrefaction. The importance of this disinfecting property of the gastric juice is still more apparent when we recall that the intestine possesses very little if any antiseptic power. Thus the gastric juice stands as it were at the entrance of the intestinal canal and prevents the passage of disease producing organisms.

Typhoid fever, for example—when typhoid fever invades a community everybody does not get the disease. In a community of a thousand persons, probably not more than five hundred are capable of taking it. People with healthy stomachs who have plenty of strong, active gastric juice are not likely to become typhoid victims, because the gastric juice will destroy even typhoid fever germs.

A GAIN, THE CHOLERA GERM was first discovered by Professor Koch. He went to Egypt when cholera was raging there and, with an assistant, lived among cholera patients. He dissected the bodies after death and finally found the particular

germ that caused the disease. He carried some specimens with him to Germany. A professor in a German medical school was very skeptical, and pronounced Professor Koch's idea about the cholera being produced by the comma bacillus to be nonsense. "I will prove it," he said. He took some of Professor Koch's cholera germs and cultivated them in beef tea until the beef tea swarmed with them. Then he swallowed a portion of this cholera mixture and suffered no ill consequence whatever. One of the assistants in the laboratory, however, happened to get a few drops of the culture and had a very severe attack of cholera. Thus it was found there was a difference between the professor and the student. One had a sound stomach, the other had ruined his stomach by the use of liquor, beer and other things so that he could not resist cholera germs.

This incident makes plain why some people are subject to cholera while others are not; why some people take diarrhea, dysentery, typhoid fever and other diseases that infect the intestines while others do not. Those who are immune have still good gastric juice enough to digest the germs and to destroy them.

AFTER ALL, IT IS NOT THE GERMS THEMSELVES that do harm, but the poisons which they produce. It is a well known fact that the most deadly poisons may be put upon an intact skin without any bad effect, but if the skin is simply abraded, just a mere scratch, a poison put upon the raw surface will be quickly absorbed and deadly effects produced. The very same thing is true of the lining skin within the body. The mucous membrane has this same power to protect the body against poisons and germs. Germs ordinarily cannot get through the outside skin, nor do they usually penetrate the mucous mem-

brane, provided the person is in a state of health. When a mucous membrane is diseased, however, when it is raw, when it is congested, when it is swollen, or when it is in a state of irritation—as, for example, when a person has taken a medicinal cathartic which weakens and irritates the mucous membrane,—or when a person is subject to colitis, gastritis, enteritis or any such chronic infection, then the poisons pass through readily. The filtering power of the mucous membrane of the intestine has become lost. This explains why a person feels weak when suffering from diarrhea. It is the poisons that cause the feeling of weakness, not, as many suppose, a loss of food; it is simply the absorption of poisons that are present in the intestinal contents.

WE MENTION THIS because very often the chronic invalid when told he should have three bowel movements a day, says, “Oh, but wouldn’t it be weakening?” It would be weakening if it were induced by a poison, if one were to take a drug or a medicine to induce it, or if the frequent bowel movement were the result of infection from cholera, dysentery or anything of that sort, but frequent bowel movement induced by purely mechanical or physiologic means is a great blessing. One of the most important things that can happen to the chronic invalid, is to get the bowels into a state of activity. Three or more movements a day for a time, if induced in a physiologic way, will be of very great advantage, because they unload the poisons in the body. One does not become a chronic invalid as the result of intestinal toxemia until after his power to resist these poisons is broken down, until the intestinal filter is so damaged that the poisons flood through. This is the condition of a person who has colitis.

IF POISONS GET INTO THE BLOOD there is another defense set up against them there. Instead of being allowed to circulate through the blood and perform their mischievous work there they are all carried to the liver. By a special arrangement the blood which is distributed through the intestines, is carried through a large vessel, the portal vein, to the liver, which filters out the poisons and destroys a very considerable part of them.

When it is necessary to supply cities with water containing impurities a great filtering plant covering acres is provided and the water after passing through this comes forth pure. In a similar way the blood passing through the liver is purified. This is a most important fact. Under our ordinary conditions of living one could not survive a week if it were not for this filtering power of the liver. It is this that often saves life in typhoid fever. In this disease there are millions of germs growing in the intestines and producing typho-toxin, the poison that occasions the fever, and the weakness and the prostration and all the bad effects characteristic of the disease. The liver is active all the time to destroy this poison, and if one has but a very slight attack the liver may be able to destroy the poisons to such a degree that the patient will have very little sickness. People have been known to have typhoid fever and walk about during the entire course of the disease, not knowing they had it until after an examination had shown them to have the germs about their bodies.

SOMETIMES ALL THE GERMS ARE NOT DESTROYED and some of them get through the intestinal walls. Whenever there is a raw or an inflamed surface in the intestine the germs can readily penetrate it and get into the blood. It is now known that many millions of germs are getting through the

mucous membrane into the blood all the time. Particularly after a meal are they likely to swarm into the blood. Among other ways this is indicated by an increase of certain blood-cells after a meal, as revealed by the microscope. There are red blood-cells and various kinds of white blood-cells. One particular kind, "neutrophiles," as they are called, disappear under certain conditions and are present in great numbers under certain other conditions. If a person has tapeworm, for example, great numbers of these neutrophiles are found in the blood. In the early stages of pneumonia one has few if any at all, but as the disease advances and the patient approaches a successful crisis these neutrophiles are found to increase. By an examination of the blood the physician is able to predict in a case of pneumonia whether the patient is improving or not. It is the duty of these white cells to fight germs. When disease germs are invading the body, getting into the blood, these white cells are found to increase, sometimes with most astonishing rapidity. They are found in every drop of blood in the proportion of about one in four to six hundred. When the blood of an appendicitis patient is examined three or four times that many will be found. This is how a surgeon knows when an operation is needed. If the examination of the blood shows the patient to have only seven or eight thousand of these white cells it is plain he has not an infected appendix. If, however, the blood-cells have increased to twenty or twenty-five thousand an immediate operation is indicated.

O THER CELLS KNOWN AS "MICROPHAGS," while not destroying germs, yet go up and down the highways of the body searching for foreign particles—body rubbish, we might call it—which they carry to the spleen to be destroyed.

A HEALTHY BODY IS ABLE TO COPE WITH GERMS in a great variety of ways, but when the system is deteriorated by wrong habits, such as improper eating, over-eating, the use of tea, coffee, tobacco and alcohol, the breathing of impure air, by sedentary habits and whatever serves to lower vitality and tissue activity—when, we say, the system is deteriorated the cells are no longer able to defend themselves and they permit the germs to enter and gain a foothold. And having entered the body, they may extend their ravages from point to point until every organ is involved.



WE HOPE the health officer who wrote the following report to an eastern State board of health is longer on hygiene than he is on spelling: "i am shore that all cases of measels ar not reported & all so hooping Coff thay aint even reported to a Fesitian thay ar in maney cases treeted at home buy thare parance."



Dangerousness of Indoor Sleeping

INDOOR SLEEPERS no longer have the excuse of lack of information as to the real dangerousness of bedroom habitation. Dr. Thomas R. Crowder has made investigations which show that an individual sitting quietly in a room will immediately rebreathe from one to two per cent of the air which he breathes out, while the rate is from four to ten per cent if he lies in bed. The danger from the re-inspiration of one's breath will be lessened if one keeps his windows open and has a good

cross ventilation that strikes the bed. Even this, however, is not a guarantee of fresh air, for even in the freshest of fresh-air breathing we constantly take into the lungs a certain proportion of the breath which we have just exhaled. One's aim should be to reduce this to a minimum, which in an ordinary home means a porch, a roof, or other unenclosed portion of the house fitted up in some way for sleeping purposes.

STUFFY BEDROOM SLEEPING has been given a severe jolt by Dr. Leonard Hill, an eminent London physiologist. Doctor Hill confined eight students in an air-tight chamber. Within forty-four minutes the wet-bulb temperature had reached 83° F. The students, who were laughing and joking when they entered the compartment, had become serious, and finally when the temperature reached 87° they were covered with sweat and their faces were congested. The amount of carbonic acid gas within the chamber had increased and the amount of dioxid had lessened. Three fans were then turned on, without the air being changed; the effect was immediate: the students felt comfortable, though when the fans stopped they suffered as acutely as before.

THIS EXPERIMENT of Doctor Hill's shows very conclusively that one cannot sleep in the ordinary bedroom with safety. It may be of the common type with a single window that absolutely prohibits circulation of the air within the room; again, the room may be more modernly equipped with two windows. If these, however, are on the same side of the room they do not permit of circulation; if they are placed in opposite sides of the room the sleeper probably has a fear of drafts, so pushes the bed in a far corner of the room where the air is motionless.

Even sleeping porches are not always beyond criticism in this respect. In the building of many sleeping alcoves, modesty and not hygiene dictates the style. In some types the walls are quite as effective as brick in affording an obstacle to moving air. Where an ordinary porch has been utilized it is customary to extend the heavy canvas wall from the floor up to a height of four or five feet, which also cuts off the room from air currents.

A SLEEPING PORCH should by all means have curtains which answer the purposes of propriety, but they should be equipped with devices that permit of their being lowered and raised at will, so that once in bed, one is, so far as circulation of air is concerned, absolutely out-of-doors.

THOSE OF OUR READERS who have not yet joined the army of outdoor sleepers but who are on the point of enlisting, let us urge to begin at once accustoming themselves to the outdoors. In many of the sanatoria of Switzerland it is a common sight to see children engaged in snow sports clad only in shoes and trunks. The secret lies in the gradual hardening of the skin to the cold and fresh air. In the same way any person who begins his outdoor sleeping in summer can carry it on through the winter with absolutely no discomfort, provided, of course, that adequate coverings are provided.



TO RELIEVE "GAS IN THE STOMACH": open the mouth wide and take five or six very deep breaths, and the discomfort will disappear.

ONE OF THE MOST ENCOURAGING SIGNS OF THE TIMES is the unanimity with which the press of America has endorsed Secretary of the Navy Daniels' "dry" order. Just the other day the *Philadelphia Record* made an editorial comment on the regulation that is quite typical of the stand taken by newspaper America: "There is no question whatever that it is too late in the world's history for any man to drink freely, and all employers, commercial and governmental, are increasingly opposed to men who drink at all. Several ships in the British navy are "dry," and there is some expectation of a general order to that effect. All alcoholic drinks have been barred from the Norwegian navy. The Kaiser is not drinking anything now and has commended total abstinence to the naval cadets, telling them that the next war would be won by the nation which drank the least. The Czar is discouraging the use of liquors among officers, and the Russian war ministry is trying to check the use of vodka. In France and Germany many scientists and government officials, civil and military, are devoting their influence and example to total abstinence."



Purdy-ized Pigs

A MEMBER OF THE STAFF of the *New York Globe* has recently unearthed at a hog farm near Ossining, New York, conditions so terrible that as soon as they were brought to the attention of the public both the entire stock of hogs and the owner, one Purdy, disappeared almost over night. The hogs were fattened on all manner of garbage, including dead animals. Actual photographs have been produced showing hogs half

buried in the carcasses of horses. As a result of this kind of feeding hog cholera has been frequently epidemic in that part of the State, and, according to the owner of a farm adjoining Purdy's, "when a hog drops dead in the woods it is the signal to slaughter all the others and make them ready for the butchers of Ossining and other nearby places. The owners of the hogs that are fed on diseased animals know that if they are not killed immediately after the first sign of sickness they will be unfit for sale in forty-eight hours, because of their blotched and bloated condition, and so they don't wait until the disease develops sufficiently to break out over all the stock. They take it in time to make a profit on their wretched business.

“**O**NLY LAST FALL the brewery at Ossining lost two horses. I saw their dead bodies, terribly bloated and swollen, dragged up to the Purdy pig pen on his wagon. I have seen as many as five and six dead horses a day hauled up the road and thrown to these hogs. Last fall two cows that had died of disease were brought to the farm. Within a few hours two physicians, dressed in white suits, came to my house by mistake, thinking it was Purdy's, and asked where the cows were. They said they were medical students sent to make a post-mortem. I pointed to the farm across the fence, and when they arrived the cows had been completely consumed by the hogs and there was nothing left on which to make their post-mortem.”

THE PEOPLE WHO ATE PURDY'S PIGS felt quite as assured that they were getting clean, wholesomely produced pork as do you, dear reader, that the hogs from which your pork comes have been fattened on nothing worse than slops and grain. Purdy-ized pork is so common, however, that we know

of only two ways of making certain of even fairly clean bacon—either to convert your dooryard into a pig sty and your cellar into an abattoir and make your own meat, or to insist on your dealer giving you a moving picture film of the pig from birth to delivery at your door.



SINCE the publication of the paragraph in the August GOOD HEALTH about blood-letting, we have come across an interesting paragraph in the chap-book of Diana Bosville, who was a contemporary of Doctor Johnson's. "Doctor Martinez," she states, "says Galen's practice of bleeding in putrid fevers has killed more men than gunpowder." Inasmuch as blood-letting was an orthodox remedy in the eighteenth century, it must have been very heretical for Doctor Martinez to take this position—just as heretical as it is in modern times to abandon the use of medicine in favor of natural methods.



The Typhoid Fly

ASIDE FROM THE MOSQUITO, the fly is the most active of all the insect pest as a conveyer of disease germs. Next to sewage contamination in water the fly is the most active source of infection with typhoid fever germs. The fly acquires the germs by contact with excreta of typhoid patients that have not been properly disposed of, and then depositing the germs upon the food which has not been properly protected against such contacts. The excreta of such flies (fly specks) are found to be abounding in living typhoid fever germs and their bodies are covered with the dangerous microbes.

AT THE TIME OF THE SPANISH WAR more than ten times as many persons were killed by camp diseases as perished from Spanish bullets. Fourteen men in every hundred of our soldiers contracted typhoid fever in the army camps and fifteen in every thousand died of this filthy disease, all as the result of improper disposal of excreta, which allowed free contact of flies.



DIANA'S CHAP-BOOK, too, contains, an anecdote pertaining to Charles II which we cannot forbear passing on. It was introduced apropos of the fact that "among all our political expedients no one should yet have proposed a tax on Doctors of Physic, which being the most numerous professional tribe among us the tax must consequently be the most productive." Sir R. Killigrew, says the chap-book, "once laid Charles II a considerable sum that there were more doctors in England than any other class of men whatsoever, adding that almost every man was a doctor some time or the other, especially when he took upon him to prescribe medicine. Charles, at that time not observing the drift of the humorist, accepted the wager. On next coming to Court, Killigrew appeared muffled about the neck, and the King inquiring what was his complaint, the wiley Courtier replied sadly—'A severe sore throat,'—'Gargle your throat with cold water,' says the King.—'I've won my wager!' cries Killigrew. 'Your Majesty's a doctor among the rest!'"



PEOPLE RARELY SUFFER FROM OVERWORK except overwork at the dinner table.

THE JUNE *American Magazine* contains a most remarkable "human interest" story—told by Convict No. 6606, of how he became a slave to the use of opium, and how it dragged him from a position of influence and honor to the depths of degradation, and finally to the penitentiary. The story closes with this profound appeal: "And now one final word. If ever you are invited to try a pill of opium or to still a pain with morphine, or, most important of all, to give your children any medicine, patent or otherwise, that contains opium, morphine, laudanum, heroin or any of their kindred alkaloids, remember the old Chinese lying beside his opium layout and mumbling his warning. 'You no quit. . . . You smoke one time, then smoke two time, then smoke tlee time, then smoke allee time. . . . You no quit. I heap sabe. Bimeby you see.' That, reader, will be as bitterly true for you as it has been for me if you ever try that fatal first pill."



Typhoid Carriers

IT IS IMPORTANT THAT ONE BE CAREFUL IN HIS ASSOCIATIONS with persons who have recently recovered from typhoid fever. About ten per cent of recovered patients carry typhoid germs with them for a long time. The writer once performed an operation upon a gall-bladder which contained a great amount of thick tar-like bile, which was found upon examination to be swarming with typhoid fever germs, although the attack of typhoid fever had occurred fifteen years before, and all this time the patient had been carrying these germs.

THIS, HOWEVER, IS NOT EQUAL TO THE CASE OF A WOMAN KNOWN AS "TYPHOID MARY," who was found in New York some years ago. This remarkable case had typhoid fever fifty years before, and during that time she had worked as a servant in many places, sometimes in bakeries, sometimes in restaurants, and sometimes as cook, or maid—and in every place where she worked there developed cases of typhoid fever. Her gall bladder was examined, and found to be swarming with typhoid fever germs that for fifty years had been thrown out in great quantities daily.

BECAUSE THE GERMS ARE SO FREQUENTLY CARRIED for a long time, it is important that one be not too intimate in his associations with one who has very recently recovered from the disease, and especially should one be careful in kissing.



THE EUROPEAN WAR reminds us of an interesting and valuable feature of the German army drills—open-air singing. Singing relieves the monotony of marching and inspirits the troops. It does more than this: it has a valuable physiologic effect upon the lungs and the heart especially. The deep breathing which it promotes makes for increased chest expansion, promoting the functional activity of all parts of the lungs, particularly the apices, where tuberculosis gets its foothold. Doctor Barth, of Koslin, has made extended researches which show that singing not only improves the functioning of the lungs, the circulation and quality of the blood, and the general health, but also increase metabolism and has a beneficial effect upon the work of the digestive organs.

Worn Out and Diseased Kidneys

WHEN THE UNITED STATES GOVERNMENT, or some society for the promotion of some theory or other, issues startling figures, the statement is immediately made that they are inaccurate, or are the deductions of some long-haired theorist. But let a life insurance company, whose statistics are the last word in accuracy, and which is not interested in the promulgation of visionary ideas, but in the very practical business of securing insurance risks, no one can discount the importance of their word. Thus, when the Equitable Life Insurance Company says, as it does in a recent statement, that "last year approximately 100,000 Americans died from Bright's and other diseases of the kidneys," it is time that the Americans who escaped began to take an interest in their health—especially when we consider the statement in connection with two important facts, as stated by the Equitable:

"(1) Fully sixty per cent, or sixty thousand of these deaths could have been prevented or postponed for years if the presence of the disease had been discovered in its early stages.

"(2) The death-rate from these diseases is increasing at an abnormal rate—seventy-two per cent in twenty years and twenty-three per cent in the last ten years (in the registration area)."

AND THE PHYSIOLOGY OF THE EQUITABLE is as reliable as are its statistics: "The kidneys," it says, "are the hardest-worked organs of the body and receive perhaps the least consideration and protection from the average individual.

"They work day and night in an effort to protect the blood and the body from the ever-increasing quantity of poisonous substances which come to them, and they perform their function

of filtration faithfully and persistently. They do this even after they have begun to degenerate from the exhaustion due to abuse and overwork.

“**I**N most cases the breaking down of the kidneys occurs slowly and painlessly, and without the knowledge of the individual for whom they are toiling. When they do announce their trouble the impairment is often beyond the hope of correction.”

FROM THE STANDPOINT OF THE STATISTICIAN, a great remedy is to be found in the more frequent application of proper analyses, by which means disorders of the kidneys can be discovered and checked. To the hygienist, however, the work could go farther and be directed to removing the causes that produce overwork of the kidneys—that is to say, in the first place diet must be reformed so that a minimum of “poisonous substances” shall come to them, and also there must be abundant exercise and other means of improving the eliminative power of the excretory organs—the liver, the kidneys, the skin, and the lungs.



THE BODY'S OUTER LINE OF FORTIFICATIONS

A NUMBER OF YEARS AGO the writer paid a visit to the Indian school at Yuma, New Mexico. At that time the Indians lived in a very primitive manner. There was not a civilized garment in their native community. The diet consisted of roasted pumpkin seeds, musquite beans, roots, grains, and

fruits. Their life was simple, their needs few; they were stalwart and erect of carriage, fine specimens of the human race. They were ignorant, of course, as to book lore and some good Catholic sisters with a view to bettering their condition had established a school for their children. It was built on an elevation and comprised several buildings for housing, feeding and educating the little folks. There the children were clothed, taught manners and books and in the generally accepted sense were excellently well cared for. Notwithstanding all these advantages the parents appeared reluctant to place their children in the school. When asked their reason, it was explained that the older Indians thought school life endangered the children's health. It seemed that many of those who attended got catarrh and sore throats and bad colds. These troubles the Indians attributed to their wearing clothes. Down on the river bottom where the Indian encampment was located the children's mates were running around in the warm southern climate in a state of Edenic happiness and health. Not being accustomed to clothing the children's skins were overheated in hot weather and became so sensitive to changes of the weather that they caught colds. When they wore no clothing their well-trained skins protected them from colds and skin ailments.

TO KEEP THE SKIN IN GOOD CONDITION is more essential to health than almost any other form of body culture. It may almost be asserted that a person whose skin is kept in a thoroughly healthy condition may defy any disease. A carefully trained skin is therefore most important to every one. Children especially should have much attention paid to the maintenance of the health of the skin.

The daily morning tonic bath, either of cold water or cold air, should begin the day. This kind of bath is a

real exercise or vasomotor gymnastics for the skin. When it is taken daily, the nerves and vessels of the skin are maintained in so vigorous a state that they can quickly react when exposed to the cold, thus avoiding the injurious effects which often follow slight exposures.

We need, too, to have our bodies continually bathed in light. For this reason it is important to wear garments that are light in color and of porous texture to allow both light and air to get in contact with the skin.

UNQUESTIONABLY THE CIVILIZED PORTION OF THE HUMAN RACE suffers greatly because of their exclusion from the influence of the sun's rays through the wearing of thick and dark colored clothing and by dwelling so much indoors. The remedy is more outdoor life; frequent exposure of as large a portion of the body as possible to the active influence of the sun's rays; swimming in the open air; the air bath; and the sand bath.

AN OUTDOOR GYMNASIUM FOR EVERY HOME would be most advantageous for both old and young. For the little folks similar benefits may be in a measure realized by dressing them in thin, sleeveless and legless garments for their outdoor play in warm weather. Let them have a sand box in the back yard as a substitute for the sea shore. On hot days start the sprinkler upon the lawn and permit them to play "out in the rain." Various games and sports can be better played in such a garb. Of course intense heat and too prolonged exposure must be carefully guarded against. To get the skin sunburned is not necessary but is harmless, and a good coat of tan all over the body is the best kind of health insurance.

RECIPE FOR APPETITE: Take half a lemon, squeeze a little of the juice slowly onto the tongue fifteen minutes before meal time. This will start the saliva flowing and create an appetite. Pawlow says that appetite means gastric juice, and conversely gastric juice creates appetite. If you have one you have the other.



Ending an Old Controversy about Intestinal Germs

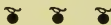
PASTEUR, the founder of bacteriology, supposed germs to be essential to human and plant life as well as to the life of all animals, but one of his students, Doctor Roux, proved by experiments with beans that vegetables may grow in a sterile soil. Subsequent experiments, indeed, have shown that fertility of soils may be doubled by sterilizing the earth, the infertility of many soils being due to the growth of pernicious germs that are disadvantageous to the proper development of the crop. Later Nuttall and Thierfelder experimented with guinea pigs, and proved that they could live and grow without bacteria. Experiments made by other investigators with chickens and other animals seemed to show that animals fed with food and water containing germs developed more rapidly than animals that were kept in a sterile condition, but Levin studied many species of animals at Spitzbergen and found that in the Arctic region most animals are free from bacteria and in that region the water and air is practically free from bacterial life.

MORE RECENTLY, PROFESSOR COHENDY, one of the savants of the Pasteur Institute, has made a careful study of this subject and after numerous experiments upon fowls and

guinea pigs has proven definitely and beyond controversy that animals not only live and develop when kept entirely free from bacteria, but that they thrive much better when kept in a sterile condition than when allowed to become infected with germs.

ACCORDING TO RECENT DISPATCHES, "Doctor Cohendy fed his guinea pigs from birth on food completely microbe free and living in sterilized glass boxes, into which he allowed to filter only sterilized air. At the end of the test period the animals were considerably more healthy than another set living a common or garden microbial existence. "The sterilized guinea pigs, reports Doctor Cohendy, augmented in weight during the period of observation from twenty to thirty-three per cent, while the others increased only from eight to twenty-four per cent."

DOCTOR COHENDY IS AN AUTHORITY OF WORLD-WIDE REPUTE, and after exhaustive researches on this subject which he has conducted during the last three years has shown the fallacy of other investigations and has himself reached definite and positive conclusions which cannot be disputed. It may be believed that this controversy is finally ended and that it is an established fact that intestinal bacteria in man and animals in general are not only unnecessary for maintenance of human life but are a source of injury, and, as Metchnikoff has shown, are the cause of premature old age and lessening of longevity.



THE PALATE ought not to be employed as a mere shovel to the stomach.—*Doctor Kitchiner, 1828.*

A MEAL RULE: take the last meal of the day not less than four hours before you go to bed, if you want to have good sleep and good digestion. Sleep semi-paralyzes the stomach, so that it works slowly, just as the rest of the body functions—the other body muscles rest, so why should not the stomach? The result is that food remains too long in the stomach and by its long contact with the gastric juice the stomach is damaged more or less.



The Cancer Peril

THE REPORTS OF THE UNITED STATES CENSUS BUREAU show that of the million and a half of persons who die in this country every year, one in twenty falls a victim of that most horrible malady, cancer. More than seventy-five thousand people die in the United States alone of this terrible disease and for every person who dies each year there are several who are suffering and dying. There are probably not less than three hundred thousand persons in the United States alone who are at the present moment being slowly consumed by this awful disease, and this in despite of all the effort made for the rescue of these unfortunate victims through surgery, radium, x-ray, and the various other means which modern science has shown to be possessed of more or less value in combating this monster malady.

STATISTICS SHOW THAT THE MORTALITY RATE of the disease has increased nearly seven hundred per cent in the last sixty years. At the present time, of all women who die above the age of thirty-five years, one in seven dies of cancer.

IT IS ENCOURAGING TO NOTE that at last this terrible evil is coming to be recognized and is being combated as a menace to the very existence of the human race. There has recently been organized a "Society for the Control of Cancer" which consists of prominent surgeons, statisticians, and specialists in cancer research. Statistics recently published by the Society show the evident need of a national movement having for its object the control and suppression of this devastating disease. Each year shows an increase in the death-rate from cancer. The disease is found to be increasing at an especially rapid rate in our larger cities. In every city of the United States the death rate is much larger at the present time than five years ago. New York City, for example, has an annual death-rate from cancer of 82 per 100,000; Pittsburg, 79 per 100,000; Boston, 118; Baltimore 105; Philadelphia 95; Chicago 86; and St. Louis 9. The death-rate for the whole United States is 75.

CANCER IS A DISEASE OF CIVILIZATION. Its growing prevalence is one of the evidences of race degeneracy which are manifesting themselves in many ways in every civilized land. The control of this malady through the discovery and suppression of its causes is a work which must command the serious attention of sanitarians and scientific investigators through the world.



The Smoker's Eye

MANY PERSONS WHO ARE ACCUSTOMED TO SMOKING endeavor to make themselves believe they are receiving no harm therefrom. The following simple experiment is a test

that will demonstrate in a very ample manner the poisonous effects of the drug:

SAY TO THE SMOKER, "Look out the window; now shut your eyes and look over against the wall." He sees a picture of the window, but the colors are reversed. He sees the complementary colors. If he is looking at blue, for example, when he shuts his eyes he will see red, or some shade of red or green. Now observe how long it takes those colors to disappear from the eye; how long it takes the picture of the window that is in the eye to disappear. It ought to disappear in a few seconds, but if one has been smoking, it takes sometimes as long as fifteen minutes. The reason for this is that the smoker's eye is paralyzed in such a way that the picture remains an excessively long time. The smallest amount of tobacco is a poison.



The Simple Life

THE "SIMPLE LIFE" IS NOT A MODERN INVENTION. It is the old fashioned life, the real life. All along through the ages we have been getting farther away from that beautiful simple life that our ancestors led.

We may look back and see what this life was when God made Adam, and put him, not in a house, but in a garden in the beautiful out-of-doors. There is a wonderful influence in this out-of-doors. One cannot but feel, when he is in contact with Nature, that there is something there that is holy, sweet and good. The power that is in the grass, causing it to shoot up out of the ground, the power that is in the buds, that bursts

open their sepals and spreads out the blossoms, that paints the flowers and the sky, reveals to us an infinitely behind it all.

THE SIMPLE, THE NATURAL LIFE is the divine order of life. Little children are perfectly natural; they are as God made them, until they have had time to degenerate. A healthy little one born under fair conditions shows the beauty and perfection that God put into the human face and form. A few years later, however, we find marks of degeneracy, wan cheeks, and sallow skins. Still later at thirty, forty, or fifty years of age, wrinkles and changes and various deformities evidence degeneracy and departure from the simple, natural way.

IN THE SLUMS OF OUR GREAT CITIES we find many cases of extreme departure from the natural way. In all heathendom there is nothing so bad. This is because in our civilized life we have departed farther from nature than has the uncivilized man. We have in our civilization the greatest truth, the greatest privileges and advantages, and the highest ideals; and at the same time we have the most awful vices and the most terrible criminals.

THE REAL WONDER IS THAT THE CIVILIZED PART OF THE HUMAN RACE IS ALIVE, in view of the distance we have traveled away from Nature, of the abnormal habits we have formed. We eat too much; we eat wrong things. Uncivilized people usually live in simple houses and dress in a simple way, the fashions for which do not change with every new moon. Those who live in hot countries wear white garments, which are cooler than those of a dark color. Their easy flowing robes give opportunity for the free movement of

every organ. The uncivilized woman has a shapely foot that has never been compressed in a tight shoe until its ligaments are weakened and its natural contour destroyed. She gets plenty of physical culture in outdoor labor.

SOME YEARS AGO when visiting Egypt the writer was walking along by the side of the Nile one day, and observed two little girls at play in the yard about their home, each with a tin pan that she was constantly balancing upon her head. When they got down on the ground they took care that these articles did not fall off. We said to our dragoman, "What kind of a game is this? Are these children merely playing with those pans they are balancing?" "Oh, no," he said, "their mother requires them to do it, so they will be straight."

While going down from Jerusalem, we met a company of Arabs on camelback. Each, as he sat swaying back and forth as if he were adjusted with a hinge at his hips, was as straight as an arrow. Never did his back curve nor his head bow: he was perfectly upright. I said to an American gentleman, who had lived a number of years among the Arabs and was familiar with their language, "How is it these Arabs are so straight? Are they naturally so?" He replied that Arab parents are constantly training the young to sit, stand and walk straight, so that in time they acquire a perfectly erect carriage.

THUS IT IS EVIDENT THAT THE PRIMITIVE EGYPTIAN, living by the Nile, and the Arab have more self-respect than the average American. The average American seems to care little whether he is round shouldered or not; whether he carries his chest behind or in front. If only his coat is cut right it makes little difference what is under it.

To grow up in a simple, natural way, gives opportunity for the development of that natural beauty of face and figure with which the Creator endowed man when He made him in His own image, but which has become so far lost that a large part of the work of the medical profession today is correcting deformities, removing excrescences and trying to change misshapen parts, the result of our artificial life.



They Do It Better in Morocco

THE EVIL EFFECTS OF ALCOHOLISM are probably no more in evidence in Morocco than in America, but there politics cannot prevent righteous legislation. When the ravages of the drug began to be felt, the Protectorate, following the example of the Ivory Coast, resorted to the simple expedient of absolutely interdicting absinthe, both to Europeans and natives. A decree by the Sultan, we learn from Paris correspondence of the *Journal of the American Medical Association*, prohibits the importation, manufacture, circulation, sale, or detention with a view to selling, of absinthe and similar products in the French portion of the country. Absinthe and similar products may not be made or sold except by pharmacists, under the classification of medicinal products. Every infraction of this decree is punishable by a fine of from 300 to 3,000 francs. For a repeated offense the penalty is imprisonment for from three months to three years. Moreover, any public house in which the sale of absinthe and similar alcoholics is permitted will be closed for six months, aside from the penalty imposed on the proprietor. In case the offense is repeated, the establishment will be closed permanently.

AND THIS GOES DOUBLE if the boy uses tobacco: in a delightful essayette on the heart, a recent number of *Life* says that it "performs probably the most useful service for the body, in the long run, of all the organs. It supplies primal energy, which enables the machine and its parts to produce. If you bought a motor-car and put into it a large part of your capital, would you select the steepest hill in your vicinity and then see how much you could strain your engine by forcing your car up that hill on high gear? That is about what college boys do in a boat race. In half an hour's time a boy may injure his heart permanently by overstrain, for an immediate glory that is almost forgotten in nine days. He may reek with brains, but brains will do him little good with a knocked-out, oar-stricken heart."



The Fatality of City Life

THE INCREASE OF THE CITY POPULATION in the last century in civilized countries is recognized as one of the great causes for the increase of mortality from chronic diseases. Modern sanitation has greatly lessened the evils of city dwelling, yet there can be no doubt that the evil conditions of life in the city causes the premature death of many millions during the last century. According to Doctor Kitchiner, an eminent English physician, who a hundred years ago, wrote a work on "The Art of Prolonging Life," the mortality in the large cities at that time was about one person in twenty, or fifty to the thousand, while in the country and country villages the death-rate at the same time was only twenty to the thousand, and in one notable instance sixteen to the thousand. These figures indicate that there has been very little change in the death-rate of country communities.

THIS IS THE WAY criminals feel about it: "Rum is directly responsible for seventy per cent of us being here," says the editor of the *Umpire*, a paper edited and published by convicts in the Eastern penitentiary in Pennsylvania. "It is responsible for eighty-five per cent of parole violations. It is a wife's woe and a child's sorrow. If decent manhood asserts itself at the next legislature the cures will be ended." Out of a total of 1,478 prisoners in the Eastern penitentiary, 1,008 have signed a petition for state-wide prohibition.



About the Anti-Faddist

THE EDITOR of the Adrian (Michigan) *Daily Telegram* devotes a column and a half of his paper to informing his readers that the Michigan anti-cigarette act is "a foolish, useless, short-sighted, and cowardly law" and "a disgrace to Michigan." And then he closes his attack of the law with this message to the boys: "And meanwhile, boys, cut out the cigarette. They are bad for you. They are bad for your health, and they will interfere with your getting a good job. Many employers simply won't hire a boy who smokes cigarettes. And they really do hurt the health, boys. And what is more, they hurt your health now much more than they will after you get your full growth. This is no mollycoddle idea. It's straight goods, boys—it's the honest truth. Be wise and cut them out."

THE EDITOR OF THE *Telegram* bases his attack on a recent ruling of the Michigan Attorney General that any minor may be arrested if caught in the act of smoking. If this were

the only result of the law, and expressed the real spirit back of the act, no one would be prepared to defend it. In his zeal against what he takes for narrowness, however, we fear the Adrian editor has isolated a minor incident of the working of the law and made it the sole aim and purpose of the law. For no boy has yet been arrested and none will be—if the tobacco dealers and cigarette manufacturers try honestly to assist the State of Michigan in the protection of its youth.

AND AFTER ALL, the tobacco trade is responsible for results which, if produced by any agency other than tobacco or liquor, would cause widespread protest and agitation. Just the other day a city magistrate made the statement "that out of three hundred boys brought before him charged with various crimes, two hundred ninety-five were cigarette smokers." There is the further fact, cited by a recent writer, that Harvard "for fifty years not one tobacco used has stood at the head of his class, although five out of six (83 per cent) Harvard students used the weed." Professor Dennis, of Cornell University Medical School, raises the further objection to cigarettes "that the tendency of beer-drinking is greatly strengthened by cigarette smoking, because this habit becomes almost constant, causing a dryness of the throat and fauces, and hence irritating the throat."

Every thoughtful observer, indeed, every one whose distrust of prohibitive legislation is not misplaced, acknowledges the baleful influences of the cigarette, and favors laws in some form that will keep boys, during the growing period, from getting it. If legislation incidently includes a feature that might possibly work a hardship, we must consider whether a minor inconvenience is not more than offset by the great benefits ac-

cruing to boyhood at large. In the case of the Michigan law, the enactment has everything in its favor, inasmuch as the objection raised is based on a hardship that, as we have already stated, is proving hypothetical.

IT IS OUR IMPRESSION that the editor of the *Telegram* was influenced, not so much by his desire for fair play for the boys as a prejudice against the anti-cigarette crusade itself, for he closes his article with the statement "that the faddist has no sense of proportion. He looks through the wrong end of the telescope. That is what makes him a faddist." We commend to the editor a statement recently made by Mrs. Huntington Wilson, to the effect that she was not an anti-anything, her great fear being that she might become an anti-anti.



How Infection is Conveyed

THE TRAINED NURSE AND SURGEON are about the only persons who have a proper appreciation of the meaning of the term "asepsis." Infection is constantly taking place in a thousand ways which are commonly overlooked. Some of these methods by which infection is conveyed are graphically described by Dr. C. V. Chapin, in his instructive work, "The Sources and Modes of Infection."

"PROBABLY THE CHIEF VEHICLE for the conveyance of nasal and oral secretions from one to another is the fingers," says Doctor Chapin. "If one takes the trouble to watch for a short time his neighbors, or even himself, unless he

has been particularly trained in such matters, he will be surprised to note the number of times that the fingers go to the mouth and the nose. Not only is the saliva made use of for a great variety of purposes, and numberless articles are for one reason or another placed in the mouth, but for no reason whatever, and all unconsciously, the fingers are with great frequency raised to the lips or the nose. Who can doubt that if the salivary glands secreted indigo the fingers would continually be stained a deep blue, and who can doubt that if the nasal and oral secretions contain the germs of disease these germs will be almost as constantly found upon the fingers? All successful commerce is reciprocal, and in this universal trade in human saliva the fingers not only bring foreign secretions to the mouth of their owner, but there exchanging them for his own, distribute the latter to everything that the hand touches. This happens not once but scores and hundreds of times during the day's round of the individual. The cook spreads his saliva on the muffins and rolls, the waitress infects the glasses and spoons, the moistened fingers of the peddler arrange his fruit, the thumb of the milkman is in his measure, the reader moistens the pages of his book, the conductor his transfer tickets, the lady the fingers of her glove. Every one is busily engaged in this distribution of saliva, so that the end of each day finds this secretion freely distributed on the doors, window sills, furniture and playthings in the home, the straps of trolley cars, the rails and counter and desks of shops and public buildings, and indeed upon everything that the hands of man touch. What avails it if the pathogens do die quickly? A fresh supply is furnished each day."

The Prevalence of Disease Among Food Animals

PROFESSOR C. E. A. WINSLOW, of the American Museum of Natural History, New York, an authority of international reputation, in an interesting paper published in the *Popular Science Monthly* on "Man and the Microbe," remarks that it is fortunate that most processes of cookery destroy most disease germs and their toxins "because the ideally healthy animal is as rare as the perfect human being."

THE STEADY INCREASE OF THE PRICE OF MEAT which has been going on for sometime and which will doubtless continue, naturally tends to the lowering of the standards by which animals are condemned as use for food.

PROFESSOR WINSLOW intimates that nearly all animals used for food are more or less diseased. The statement quite agrees with that of the chief of the United States Inspection Service who stated before a congressional committee a year or two ago that if all diseased animals were rejected, not more than one in a hundred would be judged suitable for food. It does not require much imagination to lead one to the conclusion that foodstuffs as liable to disease as beef, mutton and pork must be conceded to be unnatural and dangerous.



The Short Life of Microbes

DOCTOR HOUSTON, of London, has demonstrated by numerous experiments that those microbes which are most dangerous to human life thrive only in the human body or in a

similar host. Outside of the body they do not find the conditions of life favorable for growth and development. Immersion in plain water is almost as fatal to typhoid bacteria as to man. Doctor Houston demonstrated this by drinking half a pint of water which had been infected a few weeks before with a large quantity of virulent typhoid bacilli. It is this fact alone that prevents the development of ordinary pathological bacteria to such proportions as to render the earth uninhabitable. The air and light are Nature's disinfectants. Hence the importance of admitting to our houses as much light and air as possible.



Keeping the Teeth in Health

THE EDITOR of *Oral Hygiene*, a most valuable journal devoted to hygiene of the mouth, quotes a recent GOOD HEALTH article on dental hygiene and adds these valuable suggestions: "Bad teeth are an effect as well as a cause. They are a result of lowered vitality, and indicate that the body health is not up to the standard. On this account, diligent attention should be given to the general health. Indigestion, biliousness, constipation and other disturbances of the digestive tract are a prolific source of dental ill-health, and hence those measures of diet advocated from month to month in GOOD HEALTH must be rigidly applied, paying special attention to the question of constipation and other conditions which encourage the growth in the colon of malevolent bacteria.

"Exercise is also important. Walking, horseback riding, tennis (in cases where tennis is not too strenuous), golf—these and all other outdoor pursuits are most beneficial forms of exercise.

“**A**LSO CONDUCTIVE TO INCREASED VITALITY AND GENERAL BODY RESISTANCE is fresh-air sleeping. The market now supplies so many ingenious devices for procuring fresh air for the sleeper in the form of window tents, porch beds, etc., that no excuse is offered for unventilated sleeping apartments. Too, the man or woman who would keep the mind and body at concert pitch will secure plenty of rest and sleep. The healthy body needs at least eight hours' sleep a day, and besides this, plenty of recreation and rest—which need not, however, involve absolute cessation of employment, but may take the form of hobbies.”



Russian Prince Says Meat-Eating is Disgusting

ONE of our readers sends us an interview with Prince Paul Troubetsky, which appeared in the *Philadelphia Evening Bulletin*, when the great Russian sculptor visited that city a few week since. Prince Troubetsky is more than a mere artist—he is a profound thinker and a keen observer, and is, as every one knows, a vegetarian. Asked as to his reasons for the non-use of meat he said: “Why don't I eat meat? Oh, just because it's disgusting, and it isn't normal. I told a lady that last night. She started at me. Then I told her—ha, ha!—I told her that if a tiger met her in the middle of a desert with a pig that the tiger would eat the pig as the more desirable of the two. That's true.

“Do you know that any tiger foolish enough to eat a man always suffers afterward from poisoning? That's what they tell me in India. The tiger loses his hair. And he will not eat anybody or anything unless he is hungry. There is the

one great point of superiority that all other animals have over us. We go out and kill them for fun and all the rest of the time we walk about with our stomach full of decaying pieces of them, like walking cemeteries.

“**Y**ET THAT ISN'T THE WORST OF IT AT ALL. I don't believe any man is moral unless he has some perception of beauty. I think almost any animal is better to look at than a man is. They're cleaner in their habits. I quit eating meat fifteen years ago after I had seen an Italian butcher kill some lambs. I'm not squeamish—but it made me sick in more ways than one. It was destructive and horrible and unnecessary.

“**T**HEY TOLD ME AT THE CLUB last night that the shape and form of teeth in the human animal indicates that he is carnivorous naturally. Ho, ho! Shows what they don't know about sculpture or natural history. We have the teeth of the vegetable eating animals and we haven't anything else. I have made a sketch to show them.”



Let the Spray do It

MOST PEOPLE WILL BE SURPRISED to know that we do not know how to bathe properly, yet Lillian Russell, who is doing syndicate articles on health and beauty for prominent American newspapers, will have it that most of us have something to learn—that is, those who prefer tub bathing to the spray. For, says Miss Russell, “there is no question but the shower bath is more sanitary than the tub bath. It is simply a case of reasoning to prove that the tub, no matter how clean, still gives you a soiled bath. You sit and lie down in a

tub, after you have given yourself a scrub with soap. No matter how clean the water or how pure the soap, a scum gathers over the top of the water; as you arise from the water that scum remains upon the body. Even if you let the cold water run into the tub, it only stirs the scum around and around, and mixes it with the water you are sponging off with.

“To take a sanitary bath, the water should all be run out after thoroughly scrubbing the body, the tub thoroughly cleansed, then fresh water run in, using no soap nor bath salt. This procedure might cause you to take cold.

“**A**LL WILL AGREE that a shower bath is in every way more sanitary. Stand under a warm shower until you are thoroughly warm, then step aside while you scrub your whole body with a regular sponge or flesh brush, using only pure soap. When the whole body is covered with a lather, step under the shower and let the force of the warm water clear off the soap, then let the water gradually cool, while you are standing under the shower, by turning on the cold faucet and turning off the warm faucet gradually. You will be able to stand the coldest shower bath in that manner.

“Every drop of water that touches your body is fresh from the tap, unmixed with soap, salt, or emanations from your skin. Nothing could be cleaner.”



Hypothyroidism

MORE THAN A QUARTER OF A CENTURY AGO the pathologists worked out the symptoms-complex of a curious disease to which the name “myxedema” was given. The char-

acteristic symptoms of this disease were peculiar thickening of the skin, accompanied by a very marked pallor; a clumsiness of movement; dullness and confusion of thought, with an expression suggesting mental depreciation. It was found that the cause of myxedema was degeneration of the thyroid gland, the probable cause of which has in recent years been shown to be chronic intestinal toxemia or the absorption into the blood of poisons resulting from putrefactive processes in the intestines.

DOCTOR HERTOGHE, of Antwerp, has recently shown as a result of research that while myxedema in its severe form is a comparatively rare disease, a mild form of myxedema is exceedingly common as a result of varying degrees of deficiency of the thyroid gland. The deficiency of the thyroid gland is due to the accumulation in its structure of waste matter in the form of fat or mucin. This material is ordinarily eliminated through the kidneys and other excretory organs after having been burned by the oxidation processes of the body. The result of diminished oxidation and elimination is crippling of the gland and the interference with its functions.

Among the important functions of the thyroid gland Doctor Hertoghe mentions the following:

- 1.** The ferment produced by the thyroid gland is known to stimulate growth. When the gland is congenitally deficient, a condition sometimes observed in children, growth and development are arrested. In such cases improvement is produced by the feeding of the dry thyroid gland of the sheep.
- 2.** The thyroid secretion somehow assists in the burning up and removal of tissue waste. In cases of thyroid de-

iciency waste substances accumulate and interfere with every bodily function.

3. The secretion of the thyroid aids the body in combating rheumatism, measles, scarlet fever, and other infectious diseases. Tuberculosis, malarial infection, alcohol and all vital depressants damage the thyroid. When the thyroid is deficient, permitting the accumulation of waste substances the injury is manifested in various ways, as follows:

a. Muscular pains with stiffness and slowness of action of the muscles.

b. Neuralgic pains and neuritis especially in the sciatic nerve.

c. General nervous symptoms such as migraine, noises in the ears, giddiness, loss of memory, mental depression, and in extreme cases, loss of balancing power and even coma.

d. Dryness of the skin; dryness and falling of the hair.

e. Dryness of the joints, with creaking or grating sounds, especially in the knees and the neck joints.

DOCTOR HERTOGHE believes that thyroid deficiency is a hereditary condition and has observed that in families in which severe cases of myxedema occur mild cases of thyroid deficiency are certain to be found.



Cleansing Fresh Fruits

THE NECESSITY FOR CAREFULLY STERILIZING fresh fruits purchased in the markets before placing on the table is shown by a report recently made by the North Dakota Experi-

ment Station as the result of the bacteriological examination of grapes and other fresh fruits. Grapes that had been exposed in a basket on a sidewalk in front of a store had an average of three million bacteria on each grape on the outside of the cluster and seven hundred and eighty thousand on grapes on the inside.

THE GRAPES FROM THE OUTSIDE OF THE CLUSTER were found to contain colon bacilli, approximately, five per cc. of the washing water, or one hundred colon bacilli per grape. The presence of intestinal bacilli gathered from the street dust shows the danger to which one is subjected when eating fruit of this kind, as in a common practice especially among younger children."



Enlarged Tonsils

IT IS A COMMON SUPPOSITION that enlargement of the tonsils in a child calls for their removal. There is no doubt that the growth of children is somewhat influenced by the tonsils. In an instance where the tonsils have become badly diseased they cease to be of value any longer in promoting growth and it is better that they should be removed. It should not be supposed, however, that because the tonsils are enlarged slightly that they are diseased because this enlargement is a natural process during the period of early and rapid growth and it disappears when the child attains its growth but if the tonsils in addition to being enlarged interferes with breathing, if they are frequently inflamed and have little pockets in them which are filled with pus or with germs, with cheesy matter, they ought to be removed. It is better, however, to guard against such need, and to keep the child's throat in a healthy condition.

IT IS FAR MORE IMPORTANT to keep the inside of the body in a thoroughly clean and sanitary condition than the outside. For after all, the outside will take care of itself. The outer skin is made up of tiny scales which are continually being shed and when the scales shed off they carry off the dirt with them. If one wore no clothing, and exposed the skin to the air very freely, and took plenty of exercise, in other words disinfecting the skin by the aid of the sun, the light and air, it is doubtful whether a bath would be absolutely necessary during a life time.



Dieting for Inebriacy

MRS. BRAMWELL BOOTH, wife of General Bramwell Booth, of the Salvation Army, writes recently of her experience with a non-meat diet in the treatment of alcoholism. The diet is used in two homes for women and victims of inebriety. It has been used in one for eight years, and in the other since the home was opened, and was adopted on the principal that one "evil appetite fights another, and what is food for one passion adds strength to the rest." The value of the new diet showed itself immediately. "Prior to the change of diet there had been ten to eleven trays sent upstairs every morning for those who were not well enough to rise for the first meal; but very soon all in the home were found at the table together, bright and hungry for breakfast. When the drink-crave is strong upon a woman she is fed with grapes. At first she thinks she is being trifled with; but when she has been coaxed to eat a few, she always wants more, and they have a really soothing effect.

“ORANGES AND APPLES come second in value for this purpose; but all kinds of fruit are found good as regular items of diet. Stewed prunes and figs are, perhaps, as popular as anything and quantities of bananas are consumed, jams and marmalade also being freely used.

“CASES ARE FREQUENTLY RECEIVED in so bad a state that, under the old regime, we should have expected them to need bed and medicine for weeks before they could be pulled together; but now, with the aid of the diet, they are up and about in less than a fortnight. Many are much better in a day or two. This, of course, is a great advantage to all in the home.”



Early Symptoms of Cancer

THE INCREASING PREVALENCE of this terrible disease which now is responsible for the death of one in twenty who die in this country, claiming more than seventy-five thousand victims annually, renders highly important the education of the public to the early symptoms of the disease. It is especially important since cancer is in most cases curable in the early stages but becomes incurable whenever it has been allowed to reach an advanced stage.

WOMEN ARE MUCH MORE SUBJECT TO CANCER THAN MEN, and on this account it is highly important that they should be made acquainted with the following facts in relation to this horrible malady. A recent article published by the *International Journal of Surgery* says that women should know:

"1. That cancer of the uterus commonly arises between the ages of thirty and fifty.

"2. That the normal change of life is never marked by an increase in the menstrual flow. That loss of blood, however slight, between menstrual periods or after the establishment of the menopause, is presumptive evidence of cancer and calls for an immediate, searching examination.

"3. That a watery discharge is almost as suggestive as is hemorrhage when occurring late in life.

"4. That pain is a very unreliable guide and does not occur until the disease has advanced beyond the uterus, when it is too late to assure good results.

"5. That loss of flesh does not usually occur until the disease has run half its course.

"6. That pelvic complaints of whatever nature, arising late in life, should awaken a suspicion of a possible cancer.

"7. That cancer of the uterus may reach the inoperable stage without giving rise to a single symptom, hence the advisability of submitting to an examination at intervals during the period of life between thirty and fifty years, when the liability to cancer is the greatest.

"8. That the only hope for cure rests in early recognition and in early removal."



Microbe Carriers

DURING RECENT YEARS A MOST IMPORTANT CAUSE OF BACTERIAL INFECTION has been demonstrated by numerous experiments and observations. When a person suffers from pneumonia, scarlet fever, diphtheria, or typhoid fever, recovery,

if it takes place, is due to the development of immunity. That is, the tissues of the patient develops such a degree of tolerance for the infecting microbe that its presence is no longer capable of giving rise to serious symptoms. Typhoid, diphtheria or pneumonia patients do not recover because the bacteria which produce the disease have left the body but because the body has acquired ability to successfully combat the invading bacteria or to render its poisons innocuous.

NUMEROUS OBSERVATIONS have shown that in the case of typhoid fever about one out of twenty of the subjects of this disease continue to discharge daily from their intestines millions of typhoid fever germs for three months or more. A recent epidemic of typhoid in New York in which the infection was conveyed through milk was traced to infection by a typhoid carrier who had suffered from typhoid fever in the west some forty-six years previously.

A MOST REMARKABLE TYPHOID CARRIER is Mary Mallon, the famous "Typhoid Mary," a cook, who has carried typhoid germs about with her for more than fifty years, although it could not be learned that she herself had ever suffered from an attack of the disease. The probability is that she suffered from an attack of the disease in so light a form that its real nature was not discovered; nevertheless she was the cause of typhoid fever outbreaks in eight families in which she worked at different times. Although confined for a time, "Typhoid Mary" is now free and may be employed by some family as a cook.

Careful bacteriologic investigations have shown that in every community two or three persons out of every hundred carry

about with them, continually, diphtheria germs, while two or three in every thousand persons are typhoid carriers. This important fact explains the occasional occurrence of outbreaks of typhoid fever, diphtheria and other diseases that cannot be traced to direct infection from persons suffering from an acute attack of the same maladies.



Simple Dressing for Wounds

DR. D. H. STEWART recommends ordinary granulated sugar as an excellent dressing for wounds. If the wound has been made with some dirty instrument it should be first washed with salt water, a teaspoonful of salt to the pint, and then bathed with an alcoholic solution of iodine, one part of ordinary tincture to three parts of alcohol, then the wound should be quickly covered with granulated sugar. Dry, clean dressings should be applied. If there is pain in the wound a fomentation may be applied over the dressings. The warm steam will find its way through the dressing and by contact with the skin will afford relief.



Too Much Civilized

WE ARE BECOMING CIVILIZED ALMOST TO DEATH. The human race is fast hurrying down the hill of race deterioration and to certain race extinction unless by some means changes are brought about.

WHEN WE LOOK INTO THE SITUATION we find in this country alone a million and a half people dying every year. That is an enormous yearly loss from our population

of only one hundred millions. In some countries, and in some parts of this country, the death-rate exceeds the birth-rate. In France for a whole generation the death-rate was ahead of the birth-rate until the government set a premium on babies, offering special favors and advantages for large families. This brought the birth rate up to the death-rate, a fact over which there was great jubilation until the people discovered recently that the death-rate again is in excess of the birth-rate.

AND NOT ONLY IS THE DEATH-RATE ENORMOUS, but insanity has greatly increased, in fifty years to the extent of three hundred per cent. Intellectual activity is the highest manifestation we have of human life. When we find the brain failing in man, it is evidence that the whole body is failing. The body fights to maintain its functions; it labors to the very last to maintain the integrity of its highest functions. The brain receives more blood than any other organ in the body in proportion to its size. The brain maintains its integrity after every other organ of the body has begun to deteriorate in advancing age. You often find a man of eighty with his brain as clear and his mind as active as it was when he was forty. Even though his limbs are withered, his liver and stomach shrivelled and his arteries beginning to show evidence of hardening, his brain is as vigorous as ever, of which we had a splendid example in Gladstone.

WHEN WE FIND EVIDENCE of a marked increase of mental degeneracy from year to year, then, it is evidence that the physical stamina of the race is certainly depreciating. There are no imbeciles or idiots among our native Indians. These people are practically free from idiocy and lunacy. They get crazy sometimes under the influence of the white man's fire water, but they are not born crazy or feeble minded.

THERE ARE OTHER MARKED EVIDENCES OF DETERIORATION. For one thing, the civilized man has almost entirely lost his sense of smell, whereas the savage has a keen smell. It is said that certain tribes of South America can scent members of other communities rods away. Think what a marvelous sense of smell the dog has! His master passes through a crowded street into some place where hundreds of human feet have passed over his master's tracks, on hard pavements or a polished floor, yet the dog will surely follow them. And there are certain tribes in Africa that have nearly the same acuteness of smell.

TOO, THE MAN WHO LIVES IN THE COUNTRY is apt to have a far keener vision than the city dweller, while defective eye-sight is growing more and more common among civilized people. The average boy becomes far-sighted or near-sighted before he leaves school—about ten per cent of children begin school with defective vision, but when they get up to high school, seventy-five per cent of them have some deficiencies of the eyes.

MOREOVER THE SAVAGE IS ABLE TO HEAR FAR BETTER THAN THE CIVILIZED MAN, while his sense of taste is superior. The savage, wandering through a forest, knows as soon as he plucks a berry or other fruit and touches it to his tongue whether or not it is fit to eat. The civilized man sitting down to a hotel table gives little consideration as to the suitability of the food on the menu. He eats it because it is there, because he enjoys the smell and flavor of it, because it looks dainty, or perhaps because it has the right sort of French name. The civilized man may get sick from his indulgence, the savage runs less risk.

THE ENDURANCE OF THE SAVAGE IS ALSO INCOMPARABLY ABOVE THAT OF CIVILIZED MAN. A few years ago at the Hague Peace Conference there was a discussion respecting the use of dum-dum bullets, bullets that tear the flesh and make horrible, ragged wounds. Most of the nations at the Hague were ready to discontinue their use, but England would not agree to this, because "the savages that we have to combat in our colonies have such toughness of constitution, such enormous vitality we cannot destroy them with ordinary bullets," and they told the story of how a savage chief charged upon an English officer. Although one hundred feet distant at the outset and receiving during his progress seven bullets in his own body he did not stop until he had accomplished his purpose. Because of their extraordinary vitality these savages recover from wounds that would prove fatal to a man with habits customary with civilized people.

A SAVAGE RARELY DIES OF BLOOD POISONING, for he lives on a natural dietary. Captain Sanderson, the famous elephant hunter, says, in his interesting book, "Fourteen years in the Jungle," "If you wound a lion, no matter where, although he may live some considerable time, he will sooner or later die of blood poisoning resulting from it. But you may see a bison going along with an enormous tear in the flesh or with several suppurating sores where some lion or leopard has injured it, yet it appears in good health and it gets well after a time. This is due to the difference in diet. The diet of one fills the blood with impurities, while the diet of the other leaves the blood pure and with all its recuperative power."

THE LIFE TO WHICH CIVILIZATION HAS ACCUSTOMED MANKIND is not the natural life. It very speedily works havoc with the natural man. Some years ago the United States

government began the process of civilizing the American Indians. They gave them land to till, supplied them with tools for farming, and built them comfortable houses in which to dwell. At one station in the northwest, shortly after the Indians were settled in their new abodes the agent in charge was called for a time to another place. When he returned two years later he was greatly surprised to find the Indians had all returned to their wigwams, while the houses he had taken such pains to erect for them were being used as storage places for their farming implements. When asked why such a change had been made the chief's ingenious answer was, "Too much house!" He said that when they dwelt in the houses they became sick and some of them spit blood. When they went back to their wigwams they got well. Very naturally they preferred health to houses. Recent statistics show the Indians after the civilizing of the last few decades are rapidly succumbing to that "house disease"—tuberculosis.

MAN IS BY NATURE AN OUTDOOR ANIMAL. It is just as natural for him to live outdoors as for any other creature. It is a good thing to remember this at this time of year, for if we get accustomed to living out-of-doors during the summer we may perhaps enjoy more outdoor life at other seasons.



OUR PIOUS ANCESTORS enacted a law that suicides should be buried where four roads meet, and that a cart load of stones should be thrown upon the body. Yet when gentlemen and ladies commit suicide, not by cord or steel, but through disobeying Nature's known laws, they are buried in consecrated ground and under the auspices of the church, and the public are not ashamed to read an epitaph upon their tombstones false enough to make the marble blush.—*Horace Mann.*



Book Review



Social Forces in England and America

SOME one has said of H. G. Wells, the English novelist, that if he were asked to give the chemical formula for the reaction of sulphuric acid on zinc, he would include in his answer at least two paragraphs on the unsatisfactory conditions of human society as at present organized, with means for possible betterment in the future. The present volume, composed of papers published in the contemporary periodical press, fully warrants the epigram. There are twenty-eight chapters, covering every subject of human interest, from airships to the possible collapse of civilization, from doctors to the ideal city. On every page appear imaginary panaceas for tangible ills, workable panaceas for imaginary ills, with real panaceas for real ills that everyone must admit are sound. He is wonderfully sane, too, when he advocates the organization of our medical forces. "I cannot hide from myself, and I do not intend to hide from anyone else," he says, "my firm persuasion that the services the general practitioner is able to render us are not one-tenth so effectual as they might be if, instead of his being a private adventurer, he were a member of a sanely organized public machine. Consider what his training and equipment are, consider the peculiar difficulties of his work, and then consider for a moment what better conditions might be invented, and perhaps you will not think my estimate of one-tenth an excessive understatement in this matter." There is no question, he says, that "so long as a doctor is learning or adding knowledge, he earns nothing, and the common, unintelligent man does not see why he should earn anything. So that a doctor who has no religious passion for poverty and self-devotion gets through the minimum of training and learning as quickly and as cheaply as possible, and does all he can to fill up the rest of his time in passing rapidly from case to case. The busier he keeps, the less his leisure for thought and learning, the richer he grows, and the more he is esteemed. His four or five years of hasty, crowded study are supposed to give him a complete and final knowledge of the treatment of every sort of disease, and he goes on year after year, often without cooperation, working mechanically in the common incidents of practise, births, cases of measles

and whooping-cough, and so forth, and blundering more or less in whatever else turns up." It is certain that were every doctor a member "of one good organization for the public health, with all or most of their income guaranteed to them," and furthermore, "with opportunity and leisure for frequent periods of study, one would hear no more of his inefficiency; the fee splitting nuisance would be a thing of the past; neglect of one patient because of the doctor's anxiety to get to another and better paying patient—these and other evils would be unknown."

But every chapter is full of stimulating discussion. The literarily inclined will find of particular interest the chapters on "The Contemporary Novel" and "The Philosopher's Public Library." The book is, indeed, one that, not only every reader of Wells, but every one interested in the discussion of present-day problems, will wish to have in his library.

"Social Forces in England and America." By H. G. Wells. New York: Harper and Brothers.

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The Beauty Book

THE aim of the author has been to give simple directions for creating real and lasting beauty through the development of good health, and not by the application of artificial methods. Some of the subjects discussed are, reducing and putting on weight, hygiene of the hair, eyes, face and skin, breathing exercises, sleeping, and eating, with an excellent chapter on the relation of right thinking to the subject of beauty.

"The Beauty Book." By Roxana Rion. Holyoke, Massachusetts: The Elizabeth Towne Company.

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Better Rural Schools

IT IS one thing to criticize American educational systems, and quite another to offer sane, practical suggestions for their improvement. During the past few years thousands of books of the former class have been published, the result very often of misspent energy, while we have had too few of the latter class. Among the really constructive works which have been published in the present, which addresses itself to the subject of

rural schools. It is an attempt to interpret the rising tide of interest in the rural school (we quote from the authors' prefatory note), and in addition to offer whatever help it may in guiding the energy in fruitful lines. It is written especially for rural teachers and administrators in their reading circles, normal schools and study classes. For, while others may plan and project, it is the teachers and their official guides who must finally put these plans and projects into execution. They are the ones who are in immediate contact with the rural school and its problems; they meet pupils and patrons face to face and know their attitudes and modes of thought. And reforms are not carried out by resolutions or legislative decrees, but by individual influence and personal effort.

The book is written in an easy style, so that it makes easy and attractive reading. It contains much of illustration, incident and application, that it may be immediately helpful. It touches on such questions as the teacher must daily meet, that it may be practical. It represents many pictures of school conditions, that certain lessons may be doubly enforced.

Fully a quarter of the book is devoted to school-room problems that the teacher is called upon to solve, while of the most intense interest are those chapters devoted to the "consolidated schools." School hygiene is also covered thoroughly—and here again we see the beneficent result of the consolidated school, since consolidation makes possible better janitor service and better sanitation. The subject of sports is also given adequate treatment, as also that allied problem of how to keep the young people on the land. The authors have produced a book that it will be difficult to over-praise and one that deserves careful study by every one interested in American methods of education. The book is profusely illustrated with photographs and charts.

"Better Rural Schools." By George Herbert Betts and Otis Earle Hall. Indianapolis: The Bobbs-Merrill Company.



Eat and Grow Thin

VANCE THOMPSON contributes an introduction to the present volume that will be read with delight by all thin men and consternation by fat ones. In one passage, for example, he points to the fact that "there is strength and kinship between obesity and financial crime—almost all embezzlers are fat." He says, too, that the cheerfulness of fat men is

forced—in their heart of hearts they are miserable. As love-makers and as statesmen (Napoleon, a case in point, from a corporal became corpulent) they are positive failures. Most fat people have tried obesity cures, putting themselves on a starvation diet, when the secret, says Thompson, lies in this formula, "Eat and grow thin." It is the purpose of the present volume to make available the "Mahdah" menus, which are based upon this fact, that carbohydrates and fats make for stoutness, and therefore should be omitted as largely as possible from the reducing diet, and those vegetables and other foods which are low in food value, but which satisfy the appetite, used in their place.

"Eat and Grow Thin." By Vance Thompson. \$1.00 net. New York: E. P. Dutton and Company.



Markets For the People

THE author brought special fitness to the writing of the present book. For several years there were given to him for examination and criticism the numerous projects devised for reducing the cost of living offered at the Washington headquarters of the Trade Union of America, together with reports, official and otherwise, of the many lands. He also has studied first-hand the market systems of Europe, especially of Paris, London, Berlin and Antwerp. In his book he aims to give the public the results of his studies, both in this country and abroad, setting forth not only the theory of municipal and cooperative market, but also the practical out-working of those theories as illustrated in the great centers of Europe. Regarding metropolitan marketing, the author thus sums up his belief:

1. Ambulant street vending, free to all comers, limited in range only by necessary health laws and any higher social exigencies of other traffic.

2. Open-air markets, to be held for a few hours semi-weekly or tri-weekly, in street or park or other public space, where bodies of consumers may demand them; free to all vendors either of foodstuffs or manufactured articles of household or personal use.

3. Existing public markets to be used to the fullest extent through modern methods—auctioning, licensing the market commission men, selling by sample, ordering from producers for direct delivery, encouraging the attendance of local producers.

These principles ought to be fundamental, yet to most people they are strange doctrine, an ignorance, says the author, that is stimulated by sinister interests: "Why the open-air market is not so common throughout the United States as the public square, or even the public thoroughfare, need not long puzzle students of this phase of economics. Immediate and definite private interests have stood in the way of a distantly attainable public good. In both small and large communities the local retailers want all the provision and grocery trade, and unitedly discourage the opening of public markets."

Even the despised pushcart should play a prominent part in our city marketing: "Pushcart vendors if made free in New York might be expected to rise in worth and efficiency of service to the level at which their similars stand in London and Paris. Men having the pride of free citizens would in increasing numbers enter the occupation; they would learn to cooperate—in buying, in maintaining trade discipline, in bettering their stock and increasing its varieties. To sell in New York's streets is now criminal; it ought in justice to be respectable."

Mr. Sullivan has given us one of the most practical and illuminating books which has yet appeared on the subject, a work that is bound to be of vast service to the growing movement for marketing of the people by the people and for the people.

"Markets for the People: The Consumer's Part." By J. W. Sullivan. \$1.25 net. New York: The Macmillan Company.



Health Through Diet

THE author of the present volume, a son of Dr. Alexander Haig, founder of what has become famous as the "Haig diet," has aimed to set forth a practical guide to his father's theory of the uric-acid origin of many of the commoner diseases. The central feature of the Haig Diet is, of course, the exclusion of those foods which contain large proportions of uric-acid, four groups of which the author gives in the following order of their uric-acid content:

1. Tea, coffee, meat soup and extracts, sweetbread, liver, kidney.
2. The pulses.
3. Meat, fish, fowl, etc.
4. Cocoa and chocolate, egg.

The inclusion of tea in this list is of interest, and is explained by the author as follows: "The treachery of tea lies in the fact that it makes people feel better at the moment, for it is a powerful stimulant, and therefore, they think from their feelings that it must be doing them good. The insidious depression next morning or during other times of the day is not attributed to the tea at all, because taking more drives the depression away, yet the tea is the true cause of that depression, and must be taken ever stronger and stronger in order to drive the increasing depression away.

"A cup of coffee," says the author, "may be considered equally poisonous with a cup of tea, for although weight for weight tea is more poisonous than coffee, yet the coffee in this country is usually taken stronger than tea. A cup of cocoa or chocolate is not so poisonous as a cup of tea."

A great deal is to be said for the Haig diet. The chief criticism to be urged against it is that it overemphasizes the value of protein; indeed, it attributes to uric-acid many of the defects which may be placed directly to the putrefaction of protein substances in the colon. At the same time, the rejection of meat, tea, coffee, and other poisonous substances is of the greatest interest: it leads, indeed, to a non-meat diet, whether the diet is approached from the standpoint of uric-acid or the reduction of the amount of protein.

"Health Through Diet: A Practical Guide to the Uric-Acid-Free Diet, Founded on Eighteen Years' Personal Experience." By Kenneth G. Haig, L.R.C.P. (London), M.R.C.S., England. Philadelphia: J. B. Lippincott Company.



Adventurings in the Psychological

MANY of our readers will remember the present author's "The Riddle of Personality," published something like five or six years ago, which reviewed the results of modern psychological research in the realm of the abnormal for the special purpose of making clear their relation to the problem of nature and possibilities of the human spirit. The present volume might be termed a sequel to the earlier work. The author has aimed to reinforce the view of personality previously set forth, and to contribute towards a wider knowledge of the progress which science is making in "the naturalization of the supernatural. "Especially have I,"

(Continued on page 18, Advertising Section)