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THE NATIONAL HEALTH MAGAZINE

DECEMBER

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THIS ISSUE

HEREDITY is a powerful factor in determining the future of a child, physically, mentally, and morally, but it is not everything. Environment and training may increase or diminish the effects of hereditary tendencies. The storyette by Dr. Lauretta Kress, "The Experiences of Two Mothers," shows in an entertaining way the difference between right and wrong methods in the rearing of children. This is the second of a series begun in the November issue, but each article of the series is complete in itself.

We are all acquainted with the properties of sugar — and a few of us have a weakness that way, that is, in the matter of a "sweet tooth." The story by C. M. Dexter, "The Sweetest Place on Earth," tells in an entertaining manner how sugar is grown and prepared.

Mary Alden Carver gives the third of her series relating to the seasons. This month her message, "Out-of-Doors in Winter," contains suggestions which, if read and *heeded*, will make the winter more enjoyable, and will add largely to the physical vigor.

The matter of the combination of foods is one that does not always receive the attention it deserves. The opinion is prevalent that any two or more foods which are in themselves wholesome ought not to cause disturbance when eaten at the same meal. Dr. R. S. Ingersoll, formerly superintendent of the Washington (D. C.) Sanitarium, gives careful consideration of this topic.

The work of the International Conference on Opium has made prominent the fact that China is not by any means the worst opium-cursed country in the world. The United States actually consumes more opium per capita than does China. The article by Dr. D. H. Kress, "The Opium and Morphin Vice," considers the present status of this growing vice, and suggests the steps necessary to stay this tide of evil.

The Next Issue

George Wharton James, "The Benediction of the Snow," the first of a series of Out-of-Doors papers.

Henry H. Goddard, M. D., "The Significance of Feeble-Mindedness," a very timely paper.

Dr. Lauretta Kress gives the third and last of her enlightening series, "The Experiences of Two Mothers."

Carl D. Thompson tells how the Socialist Administration of Milwaukee is meeting public health problems.

F. W. Fitzpatrick answers the question, "What Is True Success?" from a new and somewhat startling standpoint.

George E. Cornforth furnishes an article on the much-vaunted "Paper-Bag Cookery."

CONTENTS FOR DECEMBER

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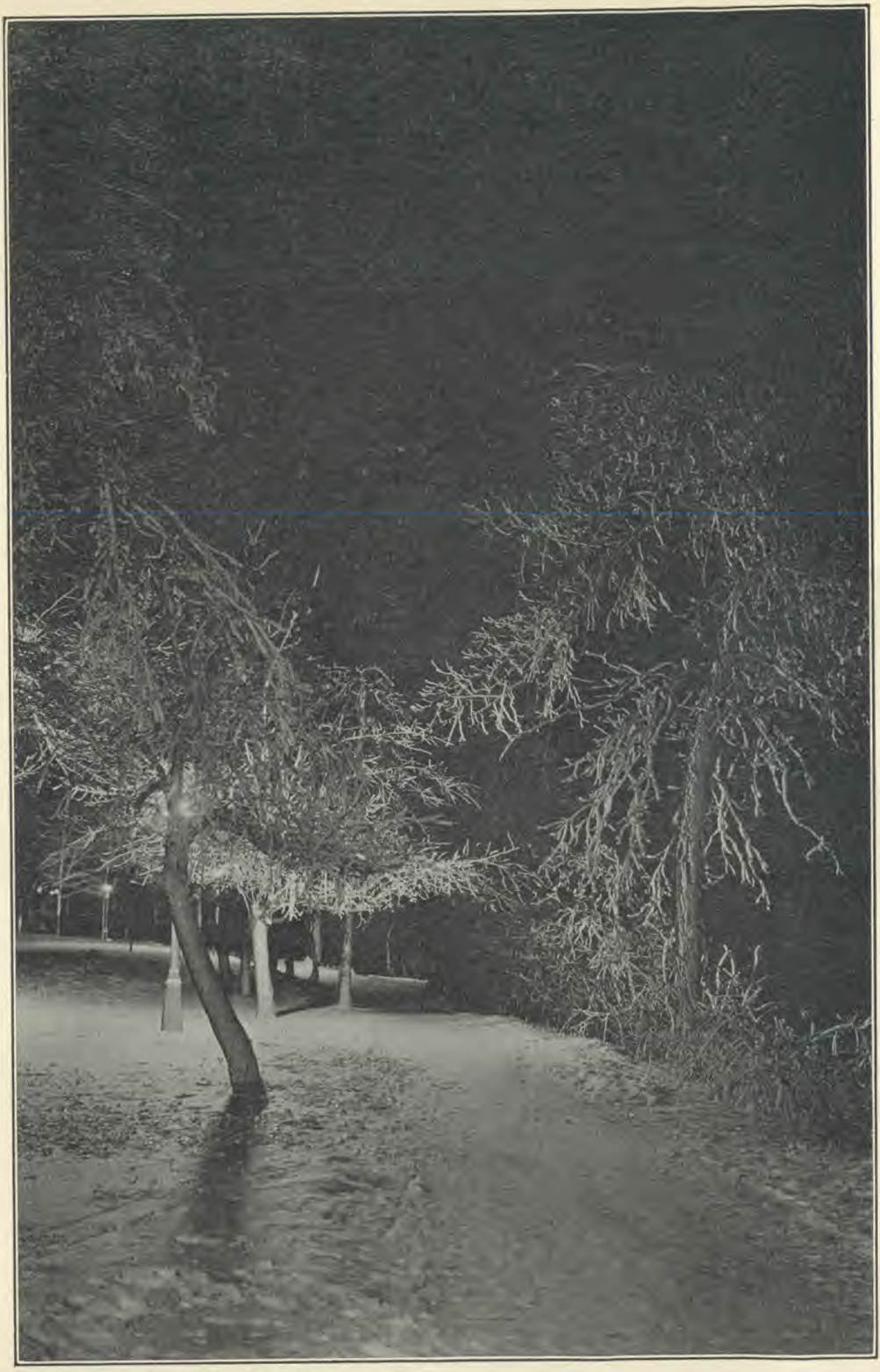

A WINTER NIGHT IN THE PARK

VOL. XXVI
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LIFE & HEALTH

THE NATIONAL HEALTH MAGAZINE

DECEMBER
1911

AIM: To assist in the physical, mental, and moral uplift of humanity through the individual and the home.

Published Monthly GEORGE HENRY HEALD, M. D., EDITOR Washington, D. C.

Announcement for 1912

WE extend to our readers our heartfelt thanks for their cordial support and for the many encouraging words that they have sent in during the past year. No less thankful are we for friendly criticisms, though the attempt to put them all in practise might make us the third term of the father-son-and-donkey fable; but where we find what seems to be a general desire on the part of our readers, we want to meet it.

Numerous requests have been received to reestablish the Questions and Answers department. We have heretofore hesitated to do so for several reasons: —

1. Many of the questions sent in are of a personal nature, and the answers can interest only the writer of the question.

2. Many of the questions are long and necessitate lengthy answers.

3. Many requests come for directions to treat some particular patient whose symptoms are described in the letter.

These can not furnish matter of interest to the majority of readers, and are better answered by personal letter. The third is also open to the objection that it is unwise to attempt to treat a person at a distance on the basis of symptoms some one else has observed; and, anyhow, the patient would likely be well or dead by the time the answer appeared in the magazine.

But after laying such questions aside, it is possible that sufficient matter of general interest can be gathered to justify such a department, and we are planning to make a beginning with the January issue.

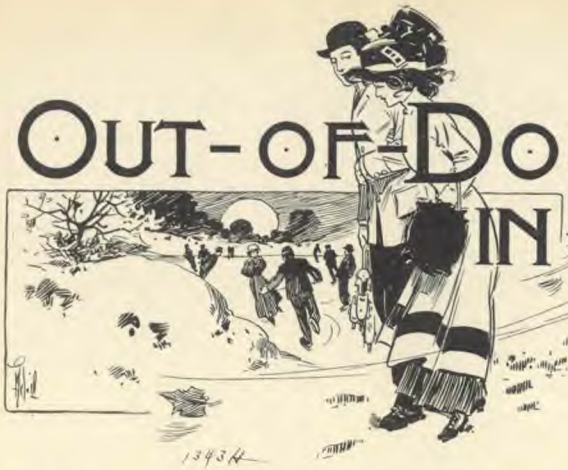
It should be remembered, however, that only questions of general interest will be answered in the magazine.

They must await their turn and be used according to the available space, so may not appear for months after they have been sent in.

For this reason questions should *always* be accompanied by postage for reply. All letters from subscribers enclosing postage will receive prompt personal reply, whether they are afterward used in the Questions and Answers department or not.

If you send in a question and no answer appears, either by mail or in the magazine, you will know that you forgot to enclose postage.

OUT-OF-DOORS IN WINTER



MARY ALDEN CARVER

IN his introduction to "The Famine" Longfellow gives us in his "Hiawatha" a scene that most people, especially in the Northern regions, mentally picture as a true portrayal of the winter situation. A vast majority weakly abandon themselves to a semi-torpid life during the winter months, through which existence must be endured until the barren season of cold in past, and spring returns.

> "O, the long and dreary winter! O, the cold and cruel winter!
> Ever thicker, thicker, thicker, froze the ice o'er lake and river;
> Ever deeper, deeper, deeper, fell the snow o'er all the landscape."

There is a tendency on the part of too many to make of winter a season of lethargy and inaction. This is especially true where the winter months span a period of severe or inclement weather.

Perhaps it is partly the reaction from the exertion and overstimulation of the autumn life, when everything in nature seems conducive to intensity of effort and the strenuous manner of living. Whatever the cause, the listless mode of winter existence is deplorable. There is positively no plausible excuse for hybernating from the time the autumn leaves fall until the early crocus rears its head. If one is brave enough to battle with the first inclement weather, more than half the battle is won; for the winter thereafter comes on apparently in comparatively easy stages.

There is too much of an inclination to seal up the doors and windows when cold weather comes, and sit huddled about a comfortable fire.

There is too much of an inclination to seal up the doors and windows when cold weather comes, and sit huddled about a comfortable fire or with the back or feet against a hot radiator. Then one wonders why there is such a tendency to catch cold in the winter, and complains that the climate is too rigorous. There is no reason why the winter should not be an en-

joyable and invigorating succession of days. In order that this may be the case it is advisable to bear in mind a few essential facts.

First of all, the question of clothing plays a conspicuous part. In this connection it is well to remember the old-time suggestion about keeping the feet warm and the head cool. Woolen underwear is an effectual barrier between the sudden extremes of temperature that exist in the warm interior of a dwelling-house and the piercing chill of a bleak Northern wind. Wool is a poor conductor of heat, and conserves the natural heat of the body without being influenced by the temperature round about it. Too much heavy clothing has a tendency toward enervation.

A bright morning after a snow-storm.

The feet, if warm and sensibly clad, will repay the attention bestowed upon them by abstaining from chilblains and frost-bite disturbances. Warm garments for outdoor wear are a prime requisite. These wraps should not be so weighty as to become cumbersome, but should effectually equalize the temperature of the outside and indoor air.

The attitude of mind and body with reference to the winter air will have a great deal to do with the manner in which one endures the most bitter wintry weather. If one briskly hurries about in the teeth of midwinter blasts, alert and fearless, the cold will prove but a stimulant and an effective tonic.

Deep breathing should be practised, and the breath should be drawn into the lungs through the nostrils. This is the rule for all seasons, but should be more assiduously practised in winter than in any other season. It spares the lungs the shock of great quantities of pneumonia-breeding, ice-cold air, and frequently overcomes a tendency to sore throat and catarrhal difficulties.

Sometimes a small silk scarf or other covering worn over the face will assist in the breathing, and still give access to plenty of fresh air. It is well to cover the ears so as to turn aside the cold winds that would penetrate their sensitive canals. One man who has a tendency to earache is compelled to do considerable driving in winter. He has found that he may successfully combat his old enemy by placing a small bit of cotton in each ear before going on a cross-country journey.

A small quantity of good cold cream rubbed well into the lips before venturing forth often vetoes the coldsore proposition, and drives away any possibility of trouble from cracked lips. Wich-hazel ointment answers the same purpose.

With proper dress and due precautions, a person should pursue a line of outdoor sports or recreations and be as comfortable while living out-of-doors as if some other season were reigning. Winter is the banner time for strenuous exercise. Skates, skees, and sleds call imperatively for a maximum of physical exertion. Walking in winter may be in-

dulged in with new zest and most pleasurable results. The more passive forms of exercise — such as riding and driving — can be enjoyed to the utmost at this season.

When planning an outdoor excursion in winter, the thought should be constantly borne in mind that it is much easier to keep warm than it is to get warm after once becoming chilly. The greatest difficulty is always to keep Jack Frost from attacking the nose, toes, and fingers.

When the wind is keen and piercing, a newspaper over the chest and across the shoulders will dull the edge of the breeze, and stop its onward course. The paper is exceedingly light, and makes an appeal from the standpoint of economy.

Puzzle: find the walkers.

In driving, there are many expedients to keep the toes warm. Jugs of hot water at the feet are good, as they retain a high temperature for a considerable length of time. Hot bricks or blocks of wood or stone are also excellent. Some resort to the use of the lighted lantern as a foot-stove. The caution must always be borne in mind to beware of fire in such instances.

If one is merely riding, it is not exceedingly difficult to keep the fingers warm. But when driving, woolen gloves or mittens should be worn underneath fur gloves or mittens.

When walking in winter, particular care must be taken to avoid getting the feet wet. Hence woolen hose are to be advocated, because they lessen the seriousness of consequences that otherwise might result in grave difficulties.

Short skirts are the necessity for the women who would be out-of-doors in winter. A long skirt wet from dragging through the snow, swishing about the ankles is a serious menace to the most robust constitution.

Stout leggings of wool or leather are excellent for both men and women; and rubbers should be the inevitable attendant for all who expect to benefit from walks over wintry highways.

The furnace at home is generally well provided with fuel in winter to keep the house at a comfortable temperature. So, the bodily furnace should be provided with such food as will produce heat and supply sufficient energy for conquering the cold.

The living-rooms should be well ventilated during winter. There is no reason why one should not sleep with open windows in winter as well as in summer. It is well to remember that cold air is not necessarily pure air. A family who would not think of going to a neglected garret for pure air in summer, will depend on the air from the same garret to replenish the vitiated air of the house in winter.

The old saying that doors and windows should be kept closed in order that the fuel supply shall not be utilized to "heat up the whole outdoors" is a fallacy. It takes fewer heat units to warm crisp, pure air than it does to heat air that is reeking with dust particles and moisture.

One has a new zest for life if he gets outdoors every day in winter. Life seems bigger and better when one knows it is not measured by the narrow confines

of the walls that bound the ordinary dwelling-house. Life in a steam-heated flat is more endurable after a few whiffs of outdoor air have been drawn down deep into the lungs.

One who is accustomed to the woods in the warmer seasons will find a new world spread out for his delectation if he seeks out his favorite haunts in January.

Wonderful kodak possibilities abound, and great opportunities for the sketch-book and note-book may be found.

The worth-while life is the life that is brave and enduring — that is strenuous and full of delight. And this is more easily realized out-of-doors than when playing the mollycoddle game in an overheated room. It takes nerve and will-power, bodily exertion, and self-assertion, to battle with the frost spirits, and beard them in their outdoor lairs when the mercury hovers a long way below the zero mark. But if one gains in purposeful existence and scores a healthful triumph for mind and body it is a struggle well worth everything it costs.

Wonderful kodak possibilities abound.

BETTER THAN SITTING OVER A STOVE

THE SWEETEST PLACE ON EARTH

—THE STORY of SUGAR

CLAUDE M. DEXTER

"BOUT a mile yander, ef you-all takes that pahth through the cane," the native had directed us upon our inquiry as to the most direct route to the plantation. But under the influence of the hot Southern sun, that mile of cane field had seemed to stretch to a dozen miles.

We were a party of colonist tourists who had come down from Baton Rouge to inspect some reclaimed bottom-lands; and being in the vicinity of Bayou la Fourche, and knowing the reception Southern hospitality always accords, I had freely invited a few of my fellow travelers to surprise an old college chum of mine by a visit to his plantation.

Most of the party had gone by wagon, that they might view the luxuriant vegetation for which that section of Louisiana is famous, while a friend and I had determined to brave the heat of the sun in a walk through the cane fields that our guide had so obligingly claimed extended only "'bout a mile."

A narrow roadway ran through the cane field, the sugar-cane growing to a height of nearly ten feet, and as dense as the forests of the Red River, though shading the sun but scantily. The air was full of sweet scent, and was still, except for the occasional whir of a startled bird. Away aloft floated a buzzard, seemingly without wing motion, but lazily circling in the heavens. A gopher scuttled into his hole at our approach, while ahead on the path a road-runner "soldiered" along in search of his favorite meal — a rattlesnake.

As we progressed, we became aware of the sound of a deep bass voice singing that most plaintive of Southern melodies, "Old Black Joe," and presently we came to the clearing, where on a knoll rested the plantation home of my chum.

We were greeted cordially and heartily welcomed, and the fact that others were on the way did not disconcert the host a particle, as is the case in all the South; the doors are always open and guests are never a surprise.

Not one of that party will ever forget the delicious meal set before us that evening by the lumbering, beturbaned old mammy, whose delight was unbounded at the recommendation our voracious appetites gave her cooking.

Then we adjourned to the mosquito-protected porch, where we found pleasure in swapping stories and reminiscences of bygone days.

"What a magnificent place this is!" exclaimed one of the party. "Never in my life have I seen such trees — lofty cypress so wonderfully festooned with Spanish moss; and the flowers — fields upon fields of the most beautiful flowers I have ever imagined."

"Yes," responded the owner, "we do have some beautiful vegetation. The

flowers you saw were jasmines and roses; and of course you saw the magnolia-trees, with their mammoth white blossoms."

"But tell us," spoke up another, "something of the sugar-cane. I confess I know but little of the matter, and my keenest interest is aroused; I ask for the sake of information rather than through mere curiosity."

"That's all right," answered our host. Then after a moment's hesitation he resumed, "Louisiana, as you no doubt know, is probably the greatest sugar-cane-raising State in the Union, though Texas frequently claims the title. In my estimation Louisiana leads, and, I may add (pardon my seeming pride), the locality you are now in might aptly be designated as 'the sweetest place on earth,' as it is the largest of all single plantations in the State.

"But sugar-cane did not originate in Louisiana. It was known to the ancients. Originally it came from India, and was brought to Europe by the Venetians about the time of the Crusades. Commerce in sugar passed into the hands of the Portuguese with the discovery of the Cape of Good Hope and the maritime route to the East Indies.

"This sugar-cane, called scientifically *Saccharum officinarum*, is a member of the grass family, and is grown in many tropical and subtropical countries for the production of sugar.

"The stalks frequently grow from eight to fifteen feet high, but usually they recline at maturity. These stalks, or canes, are cylindrical and composed of several joints, and are covered with a whitish substance called cerosin. The leaves are alternate and about three feet long.

"Now soil conditions are important, of course," continued the owner. "The largest Louisiana cane fields are nearly all of alluvial formation, because of the demand for rich soil and large water capacity.

"The land is generally plowed in the early fall, and ridged to facilitate drainage. The canes are planted in the middle of the ridges. Crops are propagated from entire canes, or sections of stalks, which are covered with three or four inches of soil. The cane harvest begins about the first of November."

"But I always supposed sugar-cane grew from the seeds, the same as any other field product," interrupted one of the party.

"No," replied our host, "though in recent years it has been demonstrated that cane seed is fertile, and many valuable seedling varieties have been originated; but the method of growth from seed is not at all practical.

"Because of the great demand for moisture, a slight drought causes great loss of cane sometimes, but, thank fortune, droughts are of great infrequency. I remember once — but here, gentlemen, let me treat you to a piece of genuine darky superstition.

"Here, Kato," called the owner to a white-haired Negro who just then crossed the porch, "come tell us about Ma-to-mah."

"Yas, sah, boss," acquiesced the old darky. "'Deed, boss, yo'-all don' 'member ol' voodoo; but Ah does, chile; 'deed Ah 'members him. Uh, huh, boss, ol' voodoo Ma-to-mah mighty bad nigger.

"In de fall we-all plant a mighty lot of cane, and yo' paw, boss, he done tell us what a lot of sugar he done get sometime. De cane grow and grow mighty fine till it's bigger dan 'at cypress yander.

"Well, ol' Ma-to-mah, him live many moons down in de bottom ob de bayou wit' de 'gators. He sleep, sleep all de time, and snore so loud it make other voodoos keep away from his place. But, pretty soon, when de cane was just full ob juice, ol' voodoo wake up.

"And he mighty hungry, and thirsty, too, white folks. So, he take two, free long steps right into de middle ob de cane field, and he suck all de juice right out ob de cane, and it all die deader'n a dead nigger. Den he go back, and sleep again fo' 'nother long time."

"That's a good one," congratulated my friend. "But tell us, Kato, is it really a true story?"

"Gospel truf, sah, sho's Ah'm bohn. Ah done seen him wif mah own eyes, sah."

The old Negro ambled off dolefully shaking his head at the shout of laughter that followed his story. The plantation owner then took up the thread of his story and told us many more interesting facts about sugar.

"Sugar," he said, "is a term applied generically to many sweet-tasting compounds of the carbohydrate class, of which cane-sugar, or sucrose, is one. And sugar is valuable as a sweetening agent to render other foods palatable and attractive, and though it is not a complete food in itself, it forms a very useful component of foods, being easily assimilable; and it is rarely adulterated.

"Only the juice of the cane is used in making sugar. The cane is chopped up, and the juice extracted by means of rollers. The residual fiber, or bagasse, is carried to the furnaces to be used as fuel; in fact, few well-regulated factories require any other fuel to generate their steam.

"The juice is treated with milk of lime to neutralize its natural acidity and to precipitate all impurities. Then the juice is evaporated in vacuum-pans, which separates the crystals from the molasses. When the crystals are separated in a centrifugal machine, the raw sugar is called centrifugal sugar. Molasses sugar obtained by further boiling, crystallizing, and spinning, is of a lower purity.

"The various forms of granulation are produced by the grinding machines. Loaf, or cube, sugar is made by putting the massecuite (a mixture of sugar and sirup) into molds, washing out the sirup with pure sugar liquor, draining, and warming in ovens till thoroughly dry and hard, then cutting into small pieces of suitable size.

"Cane-sugar," the narrator continued, "melts at 100°, solidifying on cooling to a glassy mass known as barley-sugar, while at higher temperature it changes to a dark-brown product called caramel, which is used for coloring purposes.

"I understand that the United States uses about eight billion pounds of sugar a year, and that practically all of this sugar is refined in our own country. This includes, of course, the beet-sugar, which is produced from the sugar-beet, and also maple-sugar and sorghum."

"O papa," said our host's little daughter, who had been a quiet listener to the talk, "tell me all about 'soak 'em.'"

"No, child, not soak 'em — sorghum," replied the father. "Sorghum is, like sugar-cane, a genus of grasses and includes many varieties — some saccharine, some non-saccharine. The saccharines are characterized by their sweet juice, from which sirup and molasses are made.

"The conditions of growth are about the same as for corn; it grows well in the corn belt, and requires about the same care that corn does."

THE EXPERIENCES of TWO MOTHERS

LAURETTA KRESS, M.D.

[As a result of regularity in feeding her baby and of carefulness in other details, "Mrs. Lake was cheerful, fat, and rosy — the baby a bouncing boy." Her neighbor, Mrs. Franklin, through lack of proper knowledge, was herself dragged out, and had a sick, peevish baby on her hands. The November issue tells how Mrs. Lake gave Mrs. Franklin her first lesson in the care of the baby.]

THE wind was blowing cold and bleak. It was one of those days when one feels like sitting close to the fire. Mr. Franklin was hurrying home to his little cottage to enjoy its warmth and comfort. As he neared his home, he heard the baby crying, and hastened his pace to see what had taken place. He found his poor wife with her head done up, and he knew, without asking, that she had one of those headaches she had so frequently. Dinner was not ready, and baby was crying. His wife looked the picture of despair. Her hair was in disorder, and her wrapper soiled. The whole house was disorderly, and the poor man hardly knew what to do first. He had seen his home like this many times. His wife did not know how to manage her housework so as to keep things orderly; and as he stood in the kitchen and viewed the scene, he was about to say something when his wife spoke.

Dinner was not ready, and baby was crying. His wife looked the picture of despair. Her hair was in disorder, and her wrapper soiled. The whole house was disorderly. "George, you will have to get some one to get your dinner, and to mind the baby. I'm too ill to do anything."

"George, you will have to get some one to get your dinner, and to mind the baby; I'm too ill to do anything."

"Well, wife, why don't you get something to cure these headaches? You have had them ever since we were married, and instead of getting fewer, they come more frequently. Get yourself ready, and go to see a doctor."

"O!" said Mrs. Franklin, "I am too ill now. I wish Mrs. Lake could come over to see me. She would know just what to do for baby, and for me, too."

"I will go over and see her if you wish, and ask her to come over." So saying, he left the house.

Mrs. Franklin, once more alone, groaned with the pain, but finally arose to tidy the house a little before Mrs. Lake would arrive.

It seemed but a short time when the door opened, and in walked Mrs. Lake with baby Harold. Mrs. Lake saw at a glance that Mrs. Franklin was unable physically to be doing housework. So, as soon as she had taken off her wraps, and got baby comfortably fixed in a big arm-chair, she donned an apron, and began with a will to right matters. Mrs. Franklin was put to bed, with a hot-water bottle at her feet, a small mustard plaster on the back of her neck, and a cool compress on her forehead and temples. Baby Franklin was taken from his bed, given a warm bath, dressed in clean, warm clothes, and then given a good drink of warm water. Mrs. Lake placed him in his crib, raised his clothes so he could kick, and in a few moments both children and Mrs. Franklin were asleep. Mrs. Lake next turned her attention to Mr. Franklin, who had assisted all he could by keeping a good fire. A nice luncheon was soon set for him on the dining-table. While he was eating it, Mrs. Lake made every moment count in making the house tidy.

Mrs. Franklin awoke after a sleep of two hours, and found Mrs. Lake sitting beside her. "I'm so thankful to you for coming over; I am feeling so much better. Where is baby? O, he is sleeping quietly in his crib."

Everything was done so quickly and neatly that when Mrs. Franklin awoke after a sleep of two hours, she found Mrs. Lake sitting beside her, looking rosy and happy.

"I'm so thankful to you for coming over; I am feeling so much better. Where is baby? O, he is sleeping quietly in his crib! But I have not nursed him for ever so long," said Mrs. Franklin.

"He is better for it. I gave him a good drink of hot water, and he went to sleep soon after his bath. When you have such a headache, your milk does him little good. He would be much better if he had water occasionally instead of your milk, and you would be less worn out."

"I confess I don't know just how to manage him; and I am willing now to have you teach me, for such an experience as I have had the last three months I don't want to repeat."

"I am glad, Mrs. Franklin, to hear you say you are willing, for I am feeling so well myself I would like to tell you my own experience, and perhaps it may help you.

"In the first place, I feed Harold regularly by the clock. He now has his food once in four hours. I never vary unless he sleeps over his time. If he cries or worries at all, I try to find the cause and relieve it. A few sips of hot water will bring gas off the stomach. This can be given with a spoon, or taken with a nursing-bottle. I give him his bath regularly, not too warm, about 100° F., without soap, except one morning each week, when he has a wash with best castile soap. His flannel petticoat, and also his white one, has a little waist with

long sleeves; and these with his little dress are all he wears. I have long stockings of wool, and bootees for his feet. I never feed him just before his bath, because taking a bath so close to his meal interferes with the digestion of it. He sleeps nearly five hours after his bath; but in the afternoon, shorter naps. At half past five o'clock each evening I undress him, rub his back well, and put on his night-dress, which is made of soft outing flannel. Then he goes to sleep for the night. He awakes at ten o'clock, and not again till five or six o'clock in the morning. Every morning after his bath I wash out all the diapers used during the day, and his night-dress. I never think of using the same ones twice without washing them. Thus he keeps free from chafing. For myself, I am usually busy. I have comfortable nights, and in the morning feel refreshed, and ready for my work."

At this moment Mr. Franklin entered the room, and said: "Well, wife, Mrs. Lake has wrought a miracle for you. I wish you could learn what she does to keep in health."

"I wish I could feel like that. I am never rested. I feel dragged out from morning till night."

"That, Mrs. Franklin, I feel sure is due to your eating. You use tea and white bread and butter mostly, do you not?"

"Yes," said Mrs. Franklin. "I do not drink very strong tea, but I must drink some, or I would have no milk for baby."

"That helps to cause your headaches, and keeps baby cross. I have never touched a cup of tea, coffee, or cocoa since long before baby was born, and I have all the milk that my baby needs."

"What do you eat?" asked Mrs. Franklin.

"For breakfast, which we have about eight o'clock, I eat granose flakes toasted carefully in the oven until crisp, with a teaspoonful of ground walnuts sprinkled over them, or some sweet cream; two or more pieces of zwieback made of white bread cut in slices and baked in the oven until slightly browned; a small plate of wheatena, cream of wheat, or granola porridge made rather thick and boiled a long time until thoroughly done, and over this I turn a little milk, and eat my zwieback with it. To close the meal, I have fresh fruit or stewed fruit. For dinner, which comes at 2 P. M., I have granose flakes and zwieback again, browned rice (made by browning the rice in the oven before cooking it), or a mealy baked potato, poached or scrambled egg, and more fresh fruit. I take these two meals only, and find they are all I need for my own and baby's nourishment."

"And your baby is a perfect picture of health!" said Mrs. Franklin. "My own is much thinner, and I eat about five meals a day. He is never satisfied, nor am I. I must try your way of living and see if I can't get rid of these headaches, and ——" At this moment Mr. Franklin entered the room, and said: —

"Well, wife, Mrs. Lake has wrought a miracle for you. I wish you could learn what she does to keep in health."

(*Concluded in January number*)

The Opium and Morphine Vice

D. H. Kress, M.D.

NEXT to cocain, opium and its derivatives are classed among the most dangerous drugs. For many years England maintained the opium traffic in India and China. With her it was a matter of pounds and pence. The frightful ravages wrought among the people of China finally led to the famous antiopium decree of Sept. 20, 1906, the purpose of which was to eradicate this evil. The Chinese government was determined that the sale of the drug should cease, even though it was deriving an annual revenue from the drug of over thirty million dollars. At present in many a province not a poppy-seed sprouts from one year to another. Ninety-five per cent of the officials who were formerly opium-smokers have quit the use of opium, while the other five per cent are forced to indulge in secret, for fear of losing their office.

The use of this drug is not confined to China. It has found its way into all civilized lands, and is at present as freely used per capita in the United States as it is in China, with the same sad results. Over four hundred thousand pounds were consumed in the United States last year alone. The demand is steadily increasing. In 1902 there was an increase in the importation of opium of fifty-seven thousand pounds over the previous year.

While the drug is not smoked so freely, it is employed in the more dangerous form of morphin and its salts. These are usually employed hypodermically. About seventy-five per cent of the opium is manufactured into morphin and its derivatives. One hundred sixty thousand pounds of the salts of morphin were consumed in the United States during the year 1903 — more than twice as much as the amount for 1901. It is estimated that there are probably one million drug fiends in this country, and that fully seventy-five per cent of these are addicted to the use of morphin or opium. Its use is most prevalent among doctors, other professional men, and society women. One half of the morphin fiends began the use of the drug in order to obtain freedom from pain or other annoying symptoms. After its narcotic effect has worn off, the nerves shriek out louder than before, and another hypodermic injection is taken. In order to keep free from the undesirable symptoms, it is necessary to continue the employment of the drug. Professional men and society women begin its use in order to bridge over some difficult or unpleasant task, or to stimulate their flagging energies that they may appear well in society.

Among recent products, none is more freely and widely used than heroin, an opium salt, which many employ with the idea that it is a harmless substitute for morphin. On the contrary, "it has all the dangers of morphin salts in general, and additional dangers of its own." Especially dangerous are the trade preparations containing heroin. These are widely advertised as cough-sirups, asthma cures, etc. The drug has found

its way into many of the patent medicines. Many find themselves slaves to these medicines, not knowing that they are really slaves to the morphin habit.

The dire effects of the many so-called "soothing sirups" upon thousands of innocent babes can scarcely be imagined. The awful crime of Herod, who slew the little ones of Bethlehem, does not compare with the evil wrought by these drugs upon the infants in civilized countries. The essential ingredient of these sirups is invariably some form of opium. To its influence the tender infants are especially susceptible. Soothing sirups soothe the restless, suffering babe, not by removing the cause of the pain nor by healing the disease, but by simply deadening the nerves and benumbing the delicate cells of the brain. The sleep produced is unnatural. It is a stupor from which the child may or may not awake. Serious injury is always sustained by the little ones, although the full results may not be seen until later in life. Shattered constitutions, demanding drugs later in life, are frequently traceable to the drugs administered by a well-meaning mother to her helpless babe. Better by far to let it suffer than to quiet it in such a manner.

Opium, we are told, was at first used exclusively by the mandarins of China, in order to secure a certain energy of manner, and a keener gusto either for pleasure or toil. It was at first innocently offered to visitors as a mark of respect, as many in civilized countries now serve a cup of tea. The flattered caller was almost forced to partake of it as an act of courtesy. In this way the habit spread, at first among the well-to-do, the nobility, and those who were brought in contact with the mandarins. Afterward the drug found its way to the lower classes, under the name of "polite tobacco," and by them was first smoked with a desire to imitate the example of the nobility. Habit finally established a love for it, and bound them with bands that they were unable to break. Its use became so general that there was not a district in the Chinese empire free from this curse.

Once the habit of taking opium is acquired, the craving is irresistible, and the effort to abandon its use is followed with intense suffering, which the devotee, for lack of will-power, is unwilling to endure. Thus he often remains a hopeless slave to the habit.

In China the smoking of opium by the youth has always been discouraged, just as in America the use of tobacco has been discouraged among boys and women, and for the same reasons. As it has now been fully demonstrated that if a certain quantity is capable of killing a boy of seventy-five pounds, twice this quantity will kill a man of one hundred fifty pounds, China is ready to discard opium altogether. In this she is a step in advance of America.

The Chinese begin when about twenty years of age to smoke a pipeful a day. By smoking only from one to three pipes a day, they may live for twenty or thirty years. Many, however, lose all self-control, and fall victims to the drug completely, using from six to eight pipes a day. Such live only from five to six years after the habit is acquired.

It is a deceptive drug. The victim imagines that he can not live without it; for does he not feel nervous, and in every way worse, when attempting to do so? Many also suppose that it possesses the power of imparting mental and physical strength, and of increasing one's pleasures and usefulness. This delusion is wide-spread among the ignorant classes, who for this reason fall an easy prey to the habit.

The chief constituent that causes the stimulation, or feeling of exhilaration and well-being experienced by the opium

fiend, is a poisonous alkaloid known as morphin. This alkaloid is almost identical with alkaloids found in other products that are as freely used in civilized countries as opium is in China. The action of the alkaloids found in the poppy, the cacao seed, tobacco leaves, the coffee-berry, and tea-leaves is very similar. They all act upon the nervous system in such a manner that one dose tempts the second, the second creates a craving for the third, and the third *demands* the fourth. Thus these habits become fixed, and men and women do not realize their slavery until an effort is made to give them up. Naturally the milder narcotics pave the way for the stronger ones. The user of tea, coffee, or tobacco is more likely to develop the morphin habit than the non-user of these.

Various cures are advertised. Frequently these contain the identical drug the use of which the habitué is trying to discontinue, or sometimes a drug still more dangerous; many times they free him from one drug habit by establishing another. Some marvelous "cures" are thus wrought.

In a preparation put up by a concern at Memphis, Tenn., to cure the opium or morphin habit, Dr. Kebler, of the United States Bureau of Chemistry, found twenty-four grains of morphin to the ounce.

"There was enough morphin in that one ounce to kill about twenty persons," he said, "yet that product, under our present laws, may be sent into every home without even a label actually to indicate its poisonous nature. A similar preparation, also for the opium and morphin habit, put up by a concern at Houston, Texas, at the head of which is a physician of supposed good standing, as in the case of the Memphis establishment, contains twenty-two grains of morphin to the ounce."

In abandoning the use of the drug, there will be some suffering. This must be expected. But this may be greatly minimized by treatments. To give up the use of opium or any other narcotic drug, take a period of rest, say two or three days. Eat nothing the first day, but drink hot water, with a little milk added, frequently during the day. The juice of oranges, apples, peaches, pears, or grapes may be taken whenever desired. A well-beaten fresh egg may be taken in fruit-juice or in milk. On the second day, begin the use of some simple foods, such as poached or boiled eggs, and bread, with fresh fruit at the close of the meal. By the end of the second day the headache and extreme nervousness and feeling of prostration will probably have greatly subsided, or perhaps have disappeared. Continue to live upon simple foods, using fruits freely, even after a cure has been established.

The treatment of the morphia and allied habits becomes a comparatively simple matter in a well-equipped sanitarium, where the physician has at hand the appliances for the administration of rational treatment. An important requisite is a thoroughly trained nurse who can cooperate with the physician in

everything that pertains to the welfare of the patient. After obtaining the co-operation of the patient, and placing him in charge of a competent nurse, the drug may be withdrawn at once, provided a physiological sedative is substituted for the artificial one. Hydrotherapy, electrotherapy, and massage are the greatest agencies that can be employed in palliating disagreeable symptoms as they arise, and in aiding the patient to make a speedy recovery.

The rapidity with which nearly all cases are relieved of all the distressing symptoms — from twenty-four to forty-eight hours — is remarkable. Many a one who had given up all hope of recovery has, through the employment of rational methods of treatment, been restored to health and to a useful place in the community. It is necessary for those who are cured to continue to live upon a non-irritating and non-stimulating diet the remainder of their lives. Meat, tea, coffee, and alcohol, if again used by the patient, frequently lead to the use of morphin again. The most successful way of giving up one narcotic drug is by giving up all, and by forever abandoning the use of those foods and drinks which create a craving for these drugs.

Better than sitting over a stove

FOOD COMBINATIONS

R. S. INGERSOLL, M.D., M.R.C.S. (ENG)

IN this day of fads, the question of what and what not to eat has been the subject of more discussion than almost any other. There is scarcely an article of food that has not been tabooed by one, and lauded to the skies by another of equal repute. While there are articles to be preferred, there are still questions of equal or greater importance to be considered.

We have, from childhood, been taught that we should not eat between meals, but the combination which is made at the meal is not given the thought it deserves. It is not an uncommon thing for an individual to say, "O, I can eat anything." It may be possible for one to eat "anything" and continue to do so for a long time, if he takes only a few things at a given meal, and leads an active life continually, rather than a sedentary one.

In the olden times, the farmer ate bread, butter, and salt pork day after day, and felt well. Using only a small variety, his stomach was equal to the task. But when he and his children became more prosperous, and could afford a greater variety, they departed from the limited menu, and found trouble. As a matter of fact, we are better able to eat anything than we are to eat everything. A few fundamental rules along the line of food combinations, if borne in mind, will prevent much indigestion and many associated troubles.

In view of this fact the question of the proper combination of foods is one which should interest both those who are apparently well and those who recognize themselves as ill. After considerable observation along this line, the writer is convinced that in this age of general knowledge concerning good foods there should be more emphasis placed upon the combination than there is.

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In a small family, with unanimity of purpose, the matter of combination can be regulated quite well by the cook. In an institution, hotel, school, or sanitarium, the large variety of appetites to be catered to, makes it necessary that the individual possess the knowledge of what is

the best combination, in order that he may make a selection of articles of diet that will not disagree when brought in close company with one another in his stomach.

In order that we may understand better this question of combinations, let us look for a few moments at the physiology of digestion, as this will give us fundamental principles from which to draw our conclusions. All the food that is necessary for the maintenance of animal organisms, whether human or subhuman, may be classified under five heads. Of these five classes only three contain materials which have to be changed before they can be made use of by the body. The other two, salts and water, are taken into the system and used in the same chemical condition as found in nature.

The three which have to be digested are (1) carbohydrates, or starches and sugars; (2) proteids, often spoken of as protein, which include the albuminous substances, such as the white of egg, the lean portion of meat, and the glutinous portion of flour; and (3) the fats and oils.

These three classes should be digested in three distinct parts of the alimentary canal. The starch of the first group should be largely digested by the secretion that is found in the mouth; foods belonging to the second group are digested largely by the gastric juice; and the fats are changed after the food has passed from the stomach into the intestine. The starch is digested in a mild alkaline or neutral condition only. If there is acid present, it interferes with the action of the saliva. The proteids are digested in an acid medium, as the pepsin of the stomach does its work best in an acid solution. The fats and oils are changed in an alkaline medium into an emulsion or cream-like condition. From this it is seen that a mixture of these three food classes in order to be properly digested, must be first alkaline or neutral in reaction, next acid, and finally alkaline.

Normally, when the digestion is not going on actively, the mouth is alkaline; the stomach, acid; the bowel, alkaline. Since it takes a short time for the chemical changes to take place, the food must be in an alkaline condition sufficiently long for the starch to be digested. In the case of an ordinary meal, this will be about half an hour. It is self-evident that we can not keep the food in the mouth for thirty minutes in order that the starch may be changed into sugar. Neither is there any provision whereby we can bring the food back into the mouth and finish its digestion. What does happen is this: The alkali of the saliva is sufficient to neutralize the acid in the stomach, and to keep it neutralized for about thirty minutes. In this time the digestion of the starch has made good progress, and action begins on the albuminous substances.

The work of digesting the second class of foods continues for a variable length of time in the normal stomach. Some foods digest in one hour, others require three or four hours. Articles containing a large amount of fibrous tissue require a longer time than others. The process is at its height about two hours after the food is taken.

The saliva comes from three sets of glands, which are located in the order of their size, one on each side of the face, as follows: parotid glands, just back of the angle of the lower jaw, between it and the ear, discharging their secretion through Stenson's duct, which opens on the inside of the cheek, just opposite the second upper molar tooth; the submaxillary glands underneath, and about three fourths of an inch in front of, the angle of the jaw, which discharge their secretion into the mouth at the side and under-

neath the tongue, through Wharton's duct; the sublingual glands, which open by a number of short ducts under the tongue. The secretion is stimulated by the sight, smell, taste, or even thought of any desirable article of diet. It is not an uncommon occurrence for the saliva to be forced from the mouth when the glands are stimulated in this way.

The ferments of the stomach, liver, and pancreas are also stimulated in like manner through the nervous system. The gastric juice comes from thousands of small glands in the mucous membrane of the stomach, which open upon the inner surface of the stomach. Its active principle is pepsin, which acts best when there is two-tenths of one per cent of hydrochloric acid present. As soon as the food passes through the pylorus, or gateway out of the stomach, its presence in the duodenum, or first portion of the small intestine, stimulates the flow of the bile, which has been stored in the gall-bladder. This fluid, being quite alkaline in reaction, neutralizes the acid which has come from the stomach, and makes the reaction of the food alkaline once more.

Through the same opening, along with the bile which is poured into the intestines there comes from the pancreas, fluid containing a number of active principles that enable it to finish off the work begun in the mouth and stomach. These ferments are amylopsin, which, like ptyalin of the saliva, has the power to change starch into sugar; steapsin, which acts upon the fats to break them up; and trypsin, which digests the proteid or albuminous substances. This is a wise provision of nature. The Creator evidently knew that we would not take the proper time to masticate our food, and so provided us with an extra outfit of digestive ferments.

The digestion of the fats and oils is interesting, as it compares chemically to a large manufacturing industry. What really happens to the fats and oils is the breaking up of some of the oil by the action of the potash and soda salts of the bile, resulting in the formation of a small amount of soap. This then acts upon the remaining fats and oils in the intestines in the same way that soap does upon oil on our hands. It forms a fine emulsion, like milk in appearance. In this form it can be taken up by the absorbents of the intestines, and made use of by the blood in supplying nutrition to the tissues of the body.[1] Practically no absorption takes place in the mouth or in the stomach, and very little in the upper part of the small intestine. This work is principally accomplished in the lower part of the small intestine and in the colon. The fact is, man really eats with his small intestine, and drinks with his colon.

Having thus briefly gone over the digestive processes, let us see how we can safeguard the interests of the different departments of digestion, as it were, by proper combinations. First, let us consider a combination of fruits and starches. In order to digest the starch, the mouth should be alkaline; hence we should not take very acid fruits with cereals or vegetables. For the same reason, namely, that the mixture of acid foods with starch-containing foods interferes with the work of ptyalin in the mouth, pickles should not be taken. Strongly acid food also renders the stomach acid in a shorter time than is desirable. The period for starch digestion in the stomach is accordingly shortened, and fermentation is likely to result.

It can also be readily seen that the use of acid fruits, such as grape-fruit, tart oranges, etc., at the beginning of the

[1] Probably most of the fat is absorbed as soap, and reconverted to fat in the intestinal wall.— ED.

meal, even if taken entirely by themselves, will shorten the time that starch digestion may continue in the stomach. If we postpone the eating of the acid fruits till the close of the meal, the stomach is then acid in reaction, and it is proper to introduce the acid, so far as the starches are concerned.

Let us bear in mind the fact that when food in the stomach is not being properly digested, the conditions are very favorable for fermentation, especially if the stomach is a bit under normal in its digestive power. The germs are introduced along with the food, the stomach is warm and moist, and the food materials make good nutrition for germs. Unless the digestive ferments are strong enough to destroy the germs, conditions in the stomach favor fermentation and its accompanying evil effects.

Vegetables require from two to four hours for their digestion. Fruits, if ripe, require only about an hour; but while they digest quickly, they also ferment quickly. Now, to take fruit into the stomach along with vegetables will cause trouble, for the fruit can not be separated from the vegetables. Hence both are retained in the warm, moist stomach, where conditions are most favorable for the growth of germs that cause fermentation. The result is that the germs grow, causing gas formation and distressing symptoms on the part of the stomach, unless stomach digestion is unusually good.[1]

What is said in regard to fruits and vegetables will apply also to the combination of fruits and meats; but the symptoms are less distressing for the reason that when fruit ferments, it produces acids, and when meats ferment, they produce alkaline substances, which combine with and neutralize the acid to a degree, thus minimizing the symptoms. In the case of fruits and vegetables, both produce acids when they ferment, and thus more marked symptoms are produced from the same degree of fermentation. There are a few fruits which have digestive value when taken with nitrogenous foods. This is exceptional, however. These fruits are the pineapple, cranberry, grapefruit, and papaw.

The mere combination of fat with other foods is not harmful, but the manner of preparing the combined food is of importance. Fat in emulsion, as found in milk, is the best form possible. In this form it combines well with other foods. Unemulsified fat, as butter, the fat of animals, and vegetable oils, when mixed thoroughly with starches or proteids, coats over the food so that the ptyalin can not digest the starch, and the pepsin can not affect the proteids. This is readily understood when we remember that the fats and oils are not acted upon until they reach the intestine, where the fat is dissolved off of the food, and the digestive ferments found there have a chance to do their work. This, however, is not the place where starch and proteid foods can be digested to the best advantage, and intestinal fermentation is liable to result. This is especially true if a hearty meal has been eaten.

Trouble from the combination of fats and other foods may be greatly increased by raising the temperature of the combination to a great height, as is done in frying foods. This process has the effect not only of coating over the mass as a whole, but of causing the oil to permeate and cover every particle of the food, so that it is as effectually protected against digestion in the mouth and stomach as if it had a rubber coat. There is also one other result from the raising of fats

[1] The editor believes that in view of recent observations on the action of the stomach, some other explanation is needed for the incompatibility of fruits and vegetables. The stomach discharges its contents, not at one time, but at frequent intervals.

to a high temperature, as is done in the frying of foods. This is the breaking up of the fats with the formation of butyric acid, which, although to some it has an agreeable flavor, is irritating and injurious to the stomach.

The combination of sugar and milk is in many cases the cause of catarrh of the stomach as well as of biliousness. The bad taste in the mouth in the morning can often be attributed to this union. The sugar must be changed after its absorption before it can be made use of by the body. This is done in the liver. To perform this function the liver must be supplied with oxygen by the blood. Hence, if an excess of sugar is eaten, the liver must be supplied with a large amount of blood, and congestion of that organ, and also of closely related organs, as the stomach, is likely to occur. This condition we call biliousness. The use of sugar or milk, each by itself, on cereals, if the sugar is not used in excess, is all right, but evil results follow the combination.

Drinking water with the meal is to be discouraged for the following reasons: It limits the flow of saliva, and also dilutes what does flow, so that starch digestion is interfered with; it dilutes the gastric juice, and renders it less efficient. If the fluid is very cold, it drives the blood away from the stomach, and delays the secretion of the digestive ferments, thus retarding digestion.

In order to avoid the necessity of drinking with the meal, a drink may be taken an hour before meal-time, and another two hours after the meal. This should be done regularly, as most people drink far too little water. If, however, one is very thirsty at meal-time, small sips of water will be found to satisfy, and are not so harmful as a larger quantity. It is better, however, to form the habit of taking no more water with the meal than that which is contained in the food.

When we look to nature, we find suggestions relative to food combinations. The all-wise Creator knew what was best, and in nature we do not find starches and acids combined in the same food when it is allowed to ripen naturally under the influence of the sun's rays. The banana comes to us containing a certain amount of acid and starch, as it is ripened artificially rather than on the plant in the sun. The olive contains fat and a certain amount of phosphoric acid. This particular combination, however, is a good one.

Very rarely, if at all, do we find proteids and acids combined in nature. Let us, then, observe nature and her laws in both the vegetable and animal kingdoms, and live as far as possible in harmony with the same. This means simplicity of living, which, after all, brings the greatest enjoyment as the days go by, and the possibility of added days in which to enjoy life.

MAKING for ILLNESS or HEALTH

G. H. HEALD, M.D.

Food Classification

WE eat a great variety of foods, but so far as the organic constituents are concerned, these come in three great classifications,— proteids, fats, and carbohydrates.

Proteids we may define for our purpose as foods capable of being built up into tissue. They contain three principal elements, carbon, hydrogen, and nitrogen. They are sometimes called nitrogenous or albuminous foods. The principal sources of proteid are lean meat, white of eggs, the casein, or curd, of milk, the gluten of grains, the vegetable casein of beans and other leguminous plants. All plants have some proteid, but as a rule this substance is found most abundantly in the animal kingdom. In the plant kingdom, it is most abundant in grains, nuts, and legumes. It is an important constituent of food, and life can not be maintained without it. By the action of the digestive juices, the proteids are changed into substances capable of being absorbed by the intestinal wall.

Carbohydrates, consisting of starches and sugars, come almost entirely from the vegetable kingdom. They are transformed in the digestive tube into simple sugars capable of penetrating the intestinal wall.

Fats or oils come from both the animal and the plant kingdom. In the intestine they are changed largely into soaps, to facilitate passage through the intestinal wall.

All these substances, after they have passed out of the intestinal tube, are subject to further changes, which do not interest us here.

The proteids, whether in the intestinal tube or out of it, are subject to putrefactive changes with the formation of poisonous compounds, accompanied by offensive odors. Decomposition of a piece of meat is a familiar example. The carbohydrates are subject to fermentative changes with the formation of acids. The souring of canned fruit is a familiar example. Fats are subject to certain fermentative changes, as when butter becomes rancid. These putrefactive and fermentative changes in foods, the most serious being those of the proteids, are brought about by the action of germs.

Air and Ventilation

The record of man's creation states that God "breathed into his nostrils the breath of life," and "man became a living soul." While we may live for a considerable period without food or water, we die almost instantly without air. Unquestionably, few realize the great advantage of an abundance of fresh, pure air, not only outside the body, but *in the body*. It does one no good to have the pure air of the middle of the ocean if he does not breathe. Hence there are two essentials in the proper oxygenation of the body,— proper ventilation and proper breathing.

The ventilation of summer is likely to be adequate; for one then opens the windows and doors for the sake of comfort; but in winter the temptation is to economize heat by shutting out the cold air. This course may conserve the dollars, but it certainly does not conserve health. In some way there should be fresh air winter and summer. The practise of

sleeping out-of-doors is excellent. The outdoor life has accomplished wonders in tuberculosis, pneumonia, and other diseases, simply because it builds up the natural resistance of the body, and then the body defenses themselves take care of the invading army of germs.

But ventilation and outdoor life, without proper breathing, accomplish comparatively little. We all have a tendency to eat too much and to breathe too little. Few use the respiratory muscles as much as they ought. Our modern sedentary life has caused us to fall into a habit of neglecting to breathe deeply; very many use only a small part of the lungs; and with some the chest walls have grown inflexible, and it is practically impossible to take in a full breath. One who is accustomed to quiet work should habituate himself to take a number of deep breaths several times a day, filling the lungs to their capacity and raising the chest. He should also take deep breaths with vigorous use of the abdominal muscles. The deep breathing oxygenates the blood, and, as has been proved, is an actual vital stimulant of both muscular and mental powers. The exercise of the chest keeps it in a condition of flexibility, and the exercise of the abdominal muscles strengthens them, and at the same time gives needed massage to the abdominal organs, increasing their functional activity.

If one finds himself bloating with gas, the result of fermentation in the intestines, he may stop the process by vigorous abdominal breathing and abdominal massage. Germs grow best when the medium is in a condition of quiet. Moreover, the deep breathing and massage stimulate the secreting glands, and digestive fluids capable of exerting a hindering influence on germ growth are probably secreted as a result; at any rate, this simple procedure will often prevent an attack of flatulence.

Exercise

Our modern life tends practically to eliminate physical exercise from the lives of many, to their great disadvantage. Even the morning walk to the office has been replaced by the ride by trolley or auto. Whether we are dealing in securities or managing a business, sitting at a desk or standing behind a counter, most of us are "too busy" to take invigorating, refreshing, outdoor exercise. In fact, many are "too dead tired," when night comes, to make any exertions in that direction.

Anything like systematic exercise bores us. We dread clubs, bells, gymnastic movements, and the like. We prefer to settle down to something which is different from our daily work, but which requires no physical exertion; in fact, physical exertion is irksome.

That is just it! and that is the very indication that by all means we need exercise. One who is in good condition enjoys exercise, as a hungry boy enjoys a meal; and if we do not enjoy exercise, it is a danger signal we should attend to. When we begin deep breathing exercises, we detest them; but as we continue, we come gradually to enjoy them, and finally we would not go without our regular times of deep breathing. So with exercise.

But let us not think of some set forms of exercise. Let us take up something in which we can have a lively interest, but which calls into play practically all the muscles. Gardening may be suggested to those who are so fortunate as to have a patch of land. The bicycle, now much neglected, is an excellent means of enjoyable exercise. Horseback riding is especially valuable for the abdominal muscles. Rowing and canoeing have their advantages, especially when a beautiful body of water calls to the sport. Among games there is none more valuable than tennis or handball, though cro-

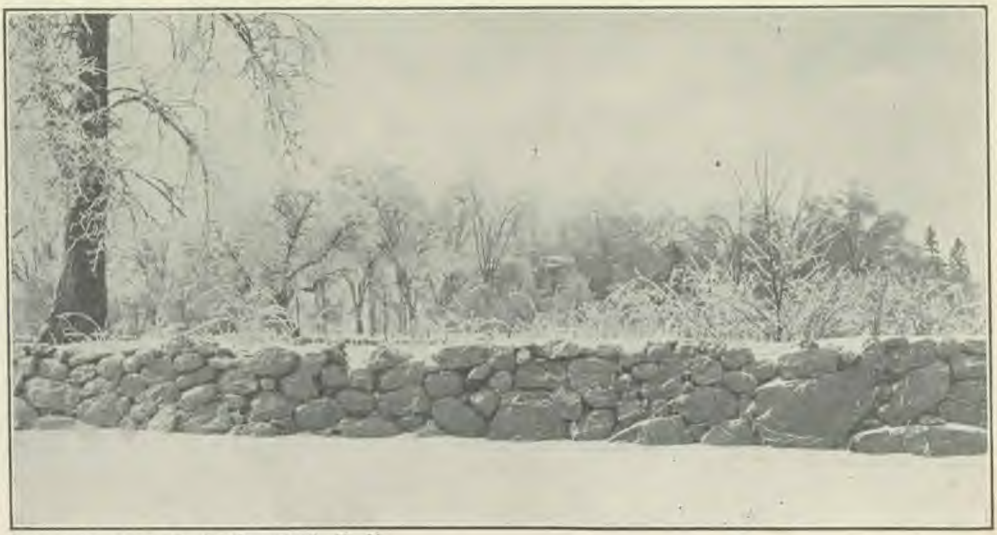
quet is better adapted as a more moderate exercise, for those who do not feel prepared to undertake the more vigorous games. Cross-country jaunts with kodak, or accompanied by a friend or by an intelligent animal,— for alone one soon tires of such trips,— are excellent.

Rest and Sleep

If one has been turning day into night and night into day by " burning midnight oil," and then sleeping until eight or nine in the morning, it is well to get back to a more rational program. The activities that come late at night do not, as a rule, make for a better or cleaner life. One can well afford to cut out the theater and late suppers and the like, and retire approximately at nine, or not later than ten. And the habit, once formed, of arising early, before six, and exercising freely in the open air before breakfast, will bring such a sense of well-being and satisfaction that it is not likely to be abandoned.

If there is disordered sleep, a tendency to be awake, this is often increased by worry, by the fear that the sleeplessness will bring on some grave disorder. Settle it once for all that the amount of sleep needed varies greatly with individuals, and at different times. One may remain in good health indefinitely on two or three hours' sleep a night. If there is a period of wakefulness, one should relax, and content himself that he is getting all the rest he needs. When one ceases to worry about not sleeping and about his business, sleep will come if he needs more sleep — unless there is some physical cause of wakefulness, such as an overloaded stomach, or indigestible food, or perhaps a loaded colon or bladder. Before retiring, one should be sure that there is no such factor to disturb sleep. In some cases an empty stomach makes for wakefulness, and a light, simple lunch conduces to sleep.

This is the last of a series of articles on the intestine and health, begun in the September issue. *Intestinal autointoxication is one of the most potent causes of ill health.* Those who have not read the previous articles should obtain them. The three issues, September, October, and November, will be sent, while they last, for 25 cents. Stamps received. Address LIFE AND HEALTH, Takoma Park, Washington, D. C.



" They make their hedges of stone."

JELLY MAKING

George E. Cornforth

JELLIES contain too much sugar to be wholesome if used in more than small quantities. They should be treated as confections rather than as foods. The health-giving properties of fruit-juices are really spoiled when made into jelly. We can not sanction the action of some mothers who allow their children to eat freely of bread and jelly and that even between meals. We could not advise our readers to spend much time in putting up quantities of jelly. However, it may be permissible to make a little of a variety of kinds to be used as a dainty or tidbit or as an accompaniment to proteid foods, which seem to require as a sauce something which is stimulating to the stomach; and jellies in small quantities may have a peptogenic effect.

"Housekeeping ranks among the professions as truly as any other occupation."—*Bertha M. Terrill, A. M.*

The property that fruit-juices have of setting into a jelly after being boiled is due to the presence of pectose. The juices of some fruits contain a sufficient amount of this substance so that they may be made into jelly without the addition of sugar; while others, like peaches and cherries, contain so little that they can not be made into a firm jelly even with sugar. Pectose is a carbohydrate substance somewhat similar to starch or dextrin. Fruits contain pectose in largest amount when just ripe, and their jelly-making qualities deteriorate with age, therefore overripe fruit should not be chosen for making jelly. The skins and cores of the fruit should be used, because these contain a larger proportion of pectose than the flesh of the fruit. Jelly can be made from peelings that are left after preparing fruit for sauce or canning.

It is very convenient to have a sirup-gage to use in making jelly, because that does away with all uncertainty. That jelly may properly set, the mixture of fruit-juice and sugar should be boiled to such a density that it tests at from 24 to 30 at the boiling temperature as tested by the hydrometer or sirup-gage. Its boiling-point will be from 217° F. to 222° F. The proper density will depend upon the kind of jelly. The more pectose the fruit contains, the lower the density may be to make perfect jelly; and the less pectose, the higher the density to which the sirup must be boiled. Too long boiling will so change the gelatinizing power of the pectose that the jelly will not properly form and the flavor will be impaired. If a sirup-gage is not used, the jelly must be tested by dropping on a cold plate to see if the sirup has been boiled sufficiently. Equal measures of juice and sugar are usually used in making jelly, but jelly can be made with

three fourths or one half as much sugar as juice. With most fruits I use three fourths as much sugar as juice. The purpose of boiling jelly is to evaporate the moisture; so it should be boiled in a granite-ware or aluminum kettle large enough so that the sirup will be shallow.

There are two methods of making jelly. By the first method measure the juice, and put on to boil. Spread in a pan three fourths as much sugar as you have juice, and put it in the oven to heat. While the juice is boiling, let the sugar get very hot, but do not allow it to brown. Boil the juice until it is reduced one half, then add the hot sugar. Let it boil up, skim, and pour into glasses placed in a pan of hot water. When the juice is cold and set, cover with melted paraffin.

By the second method add the sugar to the cold juice. Heat slowly and boil to the proper density as tested by the sirup-gage or by dropping a little on a cold plate, skimming off any froth that rises. It is convenient in using the second method to keep a thermometer in the sirup while it is boiling. When the temperature is 217° F., it is time to begin to test the jelly. Perhaps the first method is preferable where no sirup-gage is used, but the second method gives a more perfect jelly because the sirup is boiled just to the jellying-point but no longer.

A jelly-bag is necessary to drain the juice from the fruit. This can be made from either linen, cotton and wool flannel, or two thicknesses of cheese-cloth. Fold together two opposite corners of a square piece of the cloth, and sew up to form a cornucopia. Cut off the long side at the top and sew the top around a wire hoop or an embroidery hoop. Fasten coarse twine to the hoop at four points by which to suspend the bag.

Apple Jelly

Wash and quarter or slice nice tart apples, but unless wormy do not remove the cores. Put them into a granite-ware or aluminum kettle, and add sufficient cold water to come nearly to the top of the apples. Cook slowly till the apples are thoroughly softened. Turn into the jelly-bag and allow to drain. When all the juice has drained out that will do so without pressure, measure the juice, use three fourths as much sugar as juice, and proceed according to the general directions given. If a sirup-gage is used, boil to 25% as tested by the sirup-gage at boiling temperature. The remainder of the juice may be squeezed out of the jelly-bag, which will make a second-quality jelly.

Quince Jelly

Follow directions for making apple jelly. The seeds of quinces contain considerable gelatinous substance, and should be cooked with the fruit. Jelly may be made from the parings and cores when the fruit is prepared for sauce or for canning. An equal proportion of either sweet or sour apples may be used with quinces which makes a jelly of even more agreeable flavor; or more apples than quinces may be used.

Crab-Apple Jelly

Follow recipe given for making apple jelly.

Plum Jelly

Use green-gages or damsons. Wash and stem them, cutting a slit in each one. Put them into a stone jar. Cover the jar, set it into a kettle of boiling water, and boil three or four hours till all the juice is extracted. Or the fruit may be started to cook in a double boiler, and when sufficient juice has been drawn out, it may be boiled directly over the stove. Drain and proceed as in making apple jelly, boiling to 30% if using the sirup-gage. A few apples may be used with the plums. They will be a help, as plums contain a comparatively small proportion of pectose.

Cherry Jelly

Follow the recipe for plum jelly, using a few apples with the cherries.

Currant Jelly

Pick over and wash the currants. Put them into a kettle, crushing them to extract sufficient juice to start them cooking. Heat slowly, and boil till well softened. Drain and proceed as in making apple jelly. Raspberry jelly is made in the same way. Equal parts of currants and raspberries make a better jelly than either alone. These jellies may require boiling to a higher density than a 25% sirup.

Grape Jelly

Grape-juice contains too much water to make the best jelly, unless it is boiled down more than the other juices are. There are

two ways of accomplishing this. By the first method boil down two quarts of juice to one pint. Add three fourths quart of sugar that has been heated in the oven. Let it boil up, and skim, and it is ready to be put into glasses.

By the second method, add three fourths quart of sugar to two quarts of cold juice. Heat slowly to boiling and boil to a 28% sirup as tested by the sirup-gage at the boiling temperature.

Barberry Jelly

It is best to pick the berries before the frost comes, while some of the berries are green. Put four quarts of berries to cook with one-half cup of water, allowing them to cook slowly so that they will not scorch. Make the same as currant jelly.

TABLE OF PROPORTIONS

George E. Cornforth

By the use of this table of proportions one need not be dependent upon recipes, but may improvise his own recipes.

Thickening Agents

1 tablespoonful flour to 1 qt. liquid for soups.
½ cup (measured before sifting) to 1 qt. liquid, for gravies.
3 qts. flour (measured after being sifted) to 1 qt. liquid, for doughs.
The thickening power of corn-starch is about twice that of flour.
4 tablespoonfuls corn-starch to 1 qt. milk for corn-starch mold or blanc-mange; that is, 1 part corn-starch to 8 parts milk.
The same proportion applies to farina in farina blanc-mange.
Double the proportion of corn-starch or farina is required for corn-starch or farina fruit mold.
Ordinarily, 1 egg to 1 cup of milk is required for custard.
1 oz. vegetable gelatin stiffens 3 qts. liquid.
1 part sago or tapioca to 6 parts water, in sago and tapioca fruit pudding.

Shortening

Pie crust No. 1: 5 cups sifted pastry flour, 1 cup oil, ½ cup water; or 1-5 as much oil as flour, and 1-10 as much water as flour.
Pie crust No. 2: 6 cups flour, 1 cup oil, ⅔ cup water; or 1-6 as much oil as flour, and ⅛ as much water as flour.

Flavoring; Salt

1 teaspoonful salt to 1½ qts. liquid, or 1 tablespoonful to 4 qts. liquid, in soups or gravies.
1 teaspoonful salt to 1½ qts., or 1 tablespoonful to 4 qts., total volume, in other foods, as vegetables.
1 tablespoonful salt to 6 qts. flour in doughs, or 1 teaspoonful to 2 qts. flour.
1 teaspoonful salt to 1 qt. water, or 1 teaspoonful to 3 qts. water, for cereals.
¼ teaspoonful salt to a 3-egg cake.
1 teaspoonful salt to 6 qts. liquid, in desserts.
½ to 1 teaspoonful flavoring extract to 1 qt. liquid.

Sugar

For frozen desserts, ice-cream, sherbets, gelées: 1 cup sugar to 1 qt. liquid.
For most puddings and custards: ½ cup sugar to 1 qt. liquid.
For blanc-mange and junket: ¼ cup of sugar to 1 qt. liquid.
For rhubarb pie: 1 cup sugar, ¼ cup flour, and a few grains salt to each pie.
For blueberry pie: ½ cup sugar, scant ¼ cup flour, and a few grains salt to each pie.
For squash and pumpkin pies: 1 qt. milk, ½ qt. squash or pumpkin, ¾ cup sugar, 3 eggs, few grains salt.

Miscellaneous

Cream rice pudding: 1 cup rice to 15 cups milk, ½ cup sugar to 1 qt. milk, 1 egg to 1 qt. milk.
Creamy rice pudding: 1 cup rice to 8 cups milk, ½ cup sugar to 1 qt. milk.
Nut bouillon soup: ¼ tomato-juice, ¾ water, 1 lb. soup stock, to 8 qts. soup.
Tomato bisque: ⅓ tomato-juice, ⅔ water, 1 lb. nut butter, to 6 qts. soup.
Cream rice and nut rice soup, and cream barley and nut barley soup: 1 part rice or barley to 32 parts liquid.
Tomato macaroni soup: 1 lb. macaroni to 16 qts. soup, or 1 oz. to 1 qt. soup.
Bread pudding: 1 qt. milk, 2½ cups diced bread, ¾ cup sugar, 1 whole egg, and 2 yolks. The 2 whites for meringue.
Pop-overs: 1 cup milk, 1 egg, 1 cup sifted flour, ⅛ teaspoonful salt.
Puffs: 1 cup milk, 1 egg, 1½ cups sifted flour, 1-6 teaspoonful salt.
Cream pea soup: 1 can peas to 1 qt. soup.
Bean soup, split pea soup, and lentil soup: 1 qt. dried beans, peas, or lentils to 4 qts. soup.

THE MEDICAL MISSIONARY AT WORK

JOTTINGS FROM SAMOA

Edith B. Howse

IT is now over eighteen months since we came to work in Samoa, and many and varied have been our experiences. Strangers in a strange land, among a people of a strange tongue, we felt very helpless; but we had come at the bidding of One who said, "Go, . . . teach all nations," and we knew we had a never-failing Helper.

At first we visited much, distributed many tracts, and by request taught many native choirs our hymn-tunes. In this way we became acquainted with many of the natives, and won their good will and friendship. Two of these, a man and his wife, now meet with us regularly, and are obedient to the truth. They are an intelligent couple. Since the first of the year we have had their oldest girl, aged sixteen years, with us. She is a great help to me, and promises to become a good and useful young woman.

A little over a year ago we took a child of seven years into our home. She now speaks, reads, and writes English readily, and is having a Christian experience according to her years. We also had a young man living with us for several months. He had elephantiasis in both legs, of a very painful and severe character. He rapidly improved on a vegetarian diet, with but two meals a day, so that from being able to walk only with pain and difficulty, he lost all pain and could walk and run with ease, and even climb coconut-trees, a thing he had not done for years. The swelling was also much reduced. Mr. Howse had Bible studies with him daily, and he accepted joyfully the added light and has since been faithful. He returned home after four months, and is doing missionary work for his own people. The family have all given up the use of tea.

Last February an epidemic of measles visited this place, the first in almost twenty years. Hundreds, mostly children and young people, took the disease, and a great many died through ignorance and gross living. It was truly a reign of gloom and death for some months. Children were buried daily; sometimes we would hear the bell toll as often as four times in one day.

Frequently we were sent for to minister to the sick or the dying, and in every instance God blessed the simple treatments we were able to give. At this time I had a school for the natives, but closed it for a month, as many of the children were ill. One of them, a bright girl of twelve, was brought very low through a relapse. We visited her daily, carrying nourishment, but one day we found her dying. She dearly loved her school, and had just been talking of it and of me, her mother said. We were asked to pray, and while we were praying she fell asleep in Jesus. The grief of the father and mother was sad to witness.

Another of my pupils, a child of seven, also had a relapse. Mr. Howse found her lying, weak and emaciated, in a room

foul with the odor of tobacco, and needing apparently only a little more time in such surroundings, to see her carried to the cemetery. We brought her to our home, and in less than a month sent her away a healthy, happy child.

These experiences brought us in close contact with the people, which we know has had an influence in favor of the truth.

When I reopened the school, the children flocked in until I soon had thirty-five of the most obedient, earnest, industrious young people one could wish to teach. They ranged in age all the way from six or seven to sixteen years. How they delighted to come! Each day we sensed the presence of the One who loves the children, and I could see that impressions were being made for eternity on each young heart and life.

But one day a government official came to investigate, and I was told to report the school. So Mr. Howse and I went to see the governor. He met us kindly, but said he must refuse permission for natives to be taught English, as the instruction must be given in Samoan; and if any foreign language was taught, it must be German.

So, very reluctantly, I closed the school. It was a sad morning indeed, for them and for me, when I had to dismiss all those dear children. When I have learned Samoan, I may keep school again. We find the language difficult, and long for the time when we shall be able to teach the truth unhindered.

Our little paper, *Tali Moni,* which began to be printed with the new year, is a boon to us. Mr. Howse much enjoys taking it to the natives, as they are so eager for it. Many are yearly subscribers. At present we get five hundred papers, and we could use many more.

A few weeks ago we were able to help another sick person, a fine girl of sixteen, one of my recent pupils. For weeks, she had been lying in much pain with a swelling on her back. She also had an ulcer on her arm. She was taking physic and pills six times a day, but was none the better for it. We brought her to our home, and simple treatments and healthful living cured all her maladies in a week, and she went home a very grateful girl. She was almost a slave to the tea habit, but has promised to discontinue its use entirely. She had been brought up a Catholic, or christened in that church; but while with us, she loved to read the Bible and "Christ Our Saviour" in Samoan. As a token of love and gratitude, she brought me the finest Samoan mat I ever saw.

These are a few of our experiences. At present I am holding Bible studies with an intelligent half-caste woman, whose babe Mr. Howse was called to bury when the measles prevailed. She and her husband are good people, and became interested in our gospel work through the labors of Brother Steed. Pray that this interest may deepen and ripen.

Another young woman, also a half-caste, comes to me twice a week for lessons in Bible and English. We have become much attached to each other, and I feel sure that she is gaining a real Christian experience.

Pray for us, brethren and sisters, in our work here, that God may use us abundantly to the glory of his name and the salvation of many precious souls.

THE ANTIALCOHOL CONGRESS

CONNECTED with The Hague by means of numerous electric and steam trams is the beach resort Scheveningen, on the North Sea, with its immense Kurhaus, excellent hotels, and long, smooth beach. Ordinarily this great watering resort is closed in September, but this year the Kurhaus and some of the hotels were kept open to accommodate the throng who came to attend the meetings of the Thirteenth International Congress Against Alcoholism, which was held from September 11 to 16.

At the opening of the congress 1,140 members had registered, and others came during the week. The opening session was occupied with reports showing the progress in the great struggle against alcoholism since the last International Congress, held in London, in 1909. The representatives from various countries gave cheering reports of progress, and expressed a strong determination to continue the warfare with unflagging zeal.

The president in his opening speech, after addressing the audience in German and French, said, in English, that the congress would not have been representative and international in character without the presence of the Americans and English, for it was in these countries that the great temperance movement had been inaugurated, and it was from them that the rest of the temperance world was getting its inspiration.

In response to a query as to the value of attending The Hague Congress, the reply was made last spring by a prominent antialcohol physician in America, "You will not get anything new there. In Europe they are fifty years behind us, and are still discussing the advisability of restricting or of prohibiting the liquor traffic. Our societies on this side have settled that question."

However, at The Hague we found just as earnest workers as in America, but they were laboring under vastly different conditions. Here, especially on the Continent, there has not been the tradition for abstinence implanted in young minds to the extent we have it in America. On the other hand, there is a most powerful tradition as to the harmlessness and wholesomeness of *moderate* amounts of light alcoholic drinks. Less often than in America does it follow that the drinker becomes the drunkard. There are fewer "horrible examples" of the evil effects of drink. The work is more insidious, the drinking is more "respectable," and abstinence is more "abnormal." Such is the Continental atmosphere.

In America, where it is the custom to experiment rather freely with new legislation, we have been somewhat committed to the principle that a law once on the statute-books will work a reform. In Europe it is more apparent that laws to be efficient should not be too far in advance of the experience and the education of that part of the population which constitutes "public opinion."

In America certain localities have practically adopted a policy of confiscation in relation to a business which is legally recognized by the federal government and by other local governments.

Such a clashing of laws to the financial ruin of individuals can but breed disrespect and defiance of law. England has, in localities at least, adopted a scheme of gradual reduction of licenses, with compensation to those whose business is forfeited.

It is these varying circumstances of national constitution and popular prejudices and tradition which make necessary the employment of varied means for the eradication of the drink evil. And it is the discussion of these various forms of regulation and restriction which doubtless caused our American friend to reply impatiently that the work in Europe is fifty years behind that in America.

At The Hague Congress there were men of all religions, professions, and political persuasions, who believe that the liquor traffic as it exists to-day is an evil. There was the Protestant, the Catholic priest or friar, and the unbeliever. The broad platform upon which all could stand was the necessity of lessening the consumption of alcohol. Some there were who believed alcohol to be injurious only when used in excess (whatever that may mean), and who favored "regulation" rather than prohibition. One of the tenets of the congress was that there should be no criticism or acrimonious discussion of one theory by those of the other side. The time of the meeting was not to be consumed by a family quarrel, but in waging warfare against the common enemy. This policy of uniting all workers, those favoring "regulation" as well as those favoring prohibition, in a friendly discussion would naturally result in conferences which to some of our more impatient workers might seem fifty years behind the times.

At The Hague Congress an incident occurred which showed the warm feeling by Continental Europeans for the American method of solving the liquor problem. During the congress the question of constitutional prohibition was again submitted to the voters of the State of Maine, after more than a quarter of a century. At one time it looked very dark for the temperance cause, and many papers announced the defeat of prohibition.

During a meeting of the World's Prohibition Federation, consisting quite largely of English and Americans who were in attendance at the congress, Rev. E. de Didwiddie, of Washington, D. C., was interrupted in order that the telegram stating that Maine had won constitutional prohibition might be read.

The hall rang with joyous shouts, then cheers, then one of the women began singing, "Praise God, from whom all blessings flow," in which all reverently and some tearfully joined. In a public meeting held by the International Order of Good Templars, the same cable was afterward read in three languages; and especially among the Germans was it enthusiastically cheered, giving evidence that the friends of prohibition are not confined to America.

In connection with the meeting of the congress, the following temperance bodies also held meetings: the Society of Protestant Abstainers; the International Catholic Union Against Alcoholism; the International Union of Catholic Priests; the International Union of Abstaining Physicians; the Society of Abstaining Teachers; the Society of Abstaining Students; the International Order of Good Templars; the International Order of Good Templars, Neutral (i. e., non-Christian); the Total Abstinence Society; the Dutch Temperance Union; the International Socialist Abstainers; the International Railway Total Abstinence Society; the International

Union Against Intemperance; the World's Prohibition Confederation; the International Moral and Social Commission.

It should not be so much a matter of regret that these bodies do not see alike nor work alike on all points, nor even on points that may seem essential, as it is a matter of rejoicing that they are firmly united on the fundamental doctrine that the liquor traffic is a terrific evil which should have the careful study, and if necessary the earnest opposition, of every lover of humanity.

There were governmental representatives to the congress from the United States, Canada, Denmark, France, Great Britain, Germany, Greece, Hungary, the Netherlands, Norway, Portugal, Rumania, Sweden, Switzerland, and Uruguay. The United States sent the greatest number of delegates, twelve in all, representing the various national bodies engaged in fighting the liquor traffic.

Many of the addresses were, of course, in German or French, but there were a number of stirring addresses in English, especially in the meetings of the World's Temperance Federation and of the International Order of Good Templars.

The program of the congress was divided into two general sections: "The State in the Struggle Against Alcoholism," occupying the forenoons, and "The Community in the Struggle Against Alcoholism," occupying the afternoons.

One morning was devoted to the consideration of the working of various liquor laws, as operative in Switzerland, Germany, Norway, and Finland; one, to the problems which confront those who have the control of colonies populated by nations, as in the East Indies and Africa; one, to the treatment of alcoholic patients by judges, that of Judge Pollard, of St. Louis (conditional sentence), being the most interesting; one, to the problem of securing legislation from governments and parliaments. One afternoon was devoted to the consideration of "Alcohol and Heredity," a topic on which we will later comment more fully; one was devoted to the treatment of inebriates in asylums, and by outside supervision; one, to the organization of temperance bodies; and one to various indirect methods, such as settlement work, garden cities, and housing.

To enter further into detail regarding the various papers would make the article too lengthy; we therefore will in future issues give abstracts of certain of the papers, with comments.

In connection with the congress there was an exhibition at The Hague, showing the literature and the progress of the temperance work in various countries. An interesting feature of this exhibition was a booth by the Dutch Vegetarian League, containing a tempting display of fruits, nuts, and vegetable oils. A small pamphlet was distributed at the booth, which was printed in several languages, and contained an article by Felix Ort, written to show that *underfeeding* and a *meat diet* are important predisposing causes of alcoholism, and that it is impossible to cure alcoholism in the individual and in the race without first doing away with these evils. A few of the words of this pamphlet are well worth quoting here: "But besides abstinence from meat," says Ort, "vegetarianism is attended by many other things that are conducive to health and that add to man's energy. Vegetarianism is the system which aims at the increase of health and happiness and the growth of civilization and humanity. As such, vegetarianism includes abstinence from strong drink and from stimulants," and we wish that he might have added "from tobacco."

Report of the Royal Tuberculosis Commission

THE Royal Commission Appointed to Inquire Into the Relations of Human and Animal Tuberculosis, made its final report to Parliament in June this year.

The report shows that there are at least three distinct types of tuberculosis bacillus, known commonly as the human, the bovine (or cattle), and the avian (or bird), types, of which there are numerous subtypes, and that these types and subtypes usually maintain their own characteristics after many transplantings on artificial media and after passage through various animals. There was not, in all the extensive investigations of the commission, any evidence of transformation from the human to the bovine or from the bovine to the human type.

There were, however, some tubercle bacilli from horses and some from cases of lupus[1] that under cultivation changed their characteristics, showing a marked increase in virulence. On the basis of this rather exceptional change in virulence the committee felt warranted in drawing the conclusion that types are not necessarily constant.

I would suggest that the types of tubercle bacilli would furnish an interesting topic for the consideration of students of heredity. There is strong evidence favoring the belief that modifications in species are not accomplished by gradual progressive changes, but by sudden variations in type, the variants being known as "sports."

These sports may transmit their peculiarities to their offspring, and in case the new variation is capable of adapting itself to its surroundings, it persists as a new variety.

Is it not possible that such sports coming from the original strain of pathogenic acid-fast bacillus (the supposed ancient ancestor of the tubercle bacilli), and finding good soil, one in man, another in birds, and still another in cattle, "breeding true" (if we may use such an expression of bacilli), would constitute the types we now have, and that later sports would account for the numerous subtypes? May it not, after all, be simply an example of discontinuous variation together with adaptation to surroundings such as we find among the higher animals?

We know that among human beings, each nationality is almost a law unto itself as regards its reaction to the tubercle bacillus, those nations being most susceptible that have been least exposed to its ravages in past generations.

If this view of the matter should prove to be correct, it would settle the question as to whether the equine and the lupus tubercle bacilli are separate types, or modifications of the human and the bovine types. The entire question requires further study from the standpoint of heredity.

This of course is a question entirely foreign to the inquiry of the commission, which was not dealing with theories, but with facts as they found them.

The general feeling in England that human and bovine tuberculosis are intercommunicable seems to have been strengthened by the report, though in our mind the report itself does not fully bear out this theory.

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[1] A tuberculosis skin disease of man, which may be caused in some cases by types of bacillus related to the human and in others by types related to the bovine.

As We See It

Beer Not So Harmless

In view of the publicity now being given to the beer interests through the efforts of the brewers, and the quasi-sanction they have gained for their work by securing the Secretary of Agriculture to preside at their recent meeting, it may be well to question their assertion that beer is a harmless and even beneficial drink.

Let us not judge too harshly the scientists who make such assertions, for the brewers have abundance of money, which they will gladly pay for any evidence as to the harmlessness of beer, and the true scientist, who for the sake of truth is trying to learn the real effects of alcohol, is apt to get little pay for his trouble, outside of an approving conscience. This is an age when the buttered side of the bread may not be without its influence in directing so-called scientific investigations.

We would submit to the reader the following *facts,* which the brewing interests and their paid writers attempt to deny: —

Beer *does not* lessen the drinking of stronger liquors. In Germany, where beer is drunk very freely, much more so than here, there has been an enormous increase in the consumption of beer during the last quarter of a century, and little if any decrease in the consumption of stronger drinks. In 1860 the consumption of beer was thirty-seven liters per capita; in 1903 it was over one hundred sixteen liters, or more than three times as much. The fact is, while there has been little if any decrease in the consumption of strong liquors, the increase in the consumption of beer has been such as to increase greatly the total amount of alcohol consumed. And it should be remembered that alcohol is alcohol, whether in beer or brandy, and the physiological effect of an ounce of alcohol is practically the same, irrespective of the drink which contains it.

It has been shown that while the pathological effects of beer-drinking are not always so dramatic,— there are not so many "horrible examples" as among whisky drinkers,— yet the regular consumers of beer are subject to diseases of the stomach and liver, cirrhosis, etc.; and not infrequently delirium tremens is seen in those who have been exclusively beer-drinkers. In inebriate asylums there are found many who are brought there by beer-drinking or beer- and wine-drinking.

Brewers' Organization

There are millions of dollars invested in breweries in this country, and it would be surprising if men who go extensively into such a business did not do all in their power to make the business pay. Indeed, it would be a wonder if, after having made it pay, they would not do their utmost to extend the business; that is, to find more regular customers, and to open new outlets for their product. All legitimate businesses involving the investment of large capital are conducted in this way.

This means, of course, that every effort must be made to show that beer is harmless, and even healthful. Boys must be encouraged early to drink beer. Families must be educated to the point where they will keep a quantity of bottled beer constantly in the house.

Brewers can, in fact, afford to give thousands of dollars to any scientist who will come out emphatically with anything purporting to prove that beer is a wholesome drink.

Of recent years brewers have realized the value of association. In these associations their combined brain power is devoted to the consideration of how the interest of the brewing business can be best advanced. It is not a matter of social uplift; it is simply a cold "How can we get more money out of the business?"

Of course it is shown that beer is a "temperance" drink; that where it is used, there is less drunkenness; that it is a "respectable" drink; and that there are not the associations around the beer saloon that one meets in the whisky saloon; etc.

They publish periodicals in the beer interest, which, while claiming to be favorable to so-called "temperance," take every opportunity to discredit true temperance, and attempt to prove that prohibition is a failure. Whether prohibition is a failure or not, there is one certain fact, that men behind the beer business and the whisky business *hate prohibition.* If it did not materially reduce their income, would they take that attitude?

Votes More Potent Than Prayers

THE dailies state that Secretary Wilson presided at the recent brewers' convention, notwithstanding the earnest prayers of temperance people who had strong convictions that such a step would hurt the temperance cause. It would seem that the news that people were praying for him affected the secretary's risibles. If he were in some office on the gift of the people, it is possible he would have more respect for the opinions of his constituents on a point that offends the taste of a very respectable portion of the community, especially as he would know that many of those who pray can vote.

It may seem presumptuous to criticize the acts of a man who has done so much for the people as has Secretary Wilson, but we can not help feeling that in his negative attitude toward clean and pure foods, and toward a clean nation unthrottled by a beer and whisky power, he has shown himself somewhat lacking.

Country Schools the Remedy

OUR readers will remember an article by Mr. F. W. Fitzpatrick which advocated the removal of schools from the crowded cities to the open country. From the following item sent from Berlin, September 30, it would appear that the Germans are slowly coming to appreciate the value of Mr. Fitzpatrick's suggestion:—

"Statistics produced by the municipal authorities of Berlin prove that more than a fifth of the schoolchildren are physical degenerates, and this alarming report is responsible for the project that all schools of the capital be transplanted to the country, so that the boys and girls may be educated in healthier environment. By such a scheme it is hoped to arrest the physical degeneration that has been so noticeable in recent years, and rear vigorous children to take the place of the sickly ones.

"Of 365,000 Berlin schoolchildren, 74,000 are in such a state of health that they are permanently under medical supervision. While it is admitted that heredity is partly to blame for the lack of vitality among the scholars, the parents of many having been guilty of alcoholic excesses, it can not be denied that the sanitary conditions under which the children live are not conducive to good health.

"It is contemplated having schools erected not merely outside the city, but placed in the midst of the green fields and forests, so that future generations of Germans may not only thus gain physical advantage, but may become imbued with a sense of artistic beauty and inspired with admiration for the works of divine creation. It is confidently believed that the realization of the gigantic scheme will produce a better and nobler race.

"The originators of the project point out the fact that the sites of the thousand schools in Berlin are so valuable that the money they would bring would be more than ample to

erect the schools in the country. It is also planned that special facilities be provided for the conveyance by rail of the scholars to and from the schools, and that the poorer children be furnished with the necessary funds."

We understand that Mr. Fitzpatrick advocated these measures in Europe some years ago, and that at that time they were not received with favor.

Ideas are plants of very slow growth. There must be a careful preparation of the soil.

Moral Education

THE importance of moral education, particularly that phase known as "sex hygiene," is becoming obvious, especially in the last decade. In Germany this subject has been taught for some time to graduating classes, with such satisfactory results that it is now recommended that instruction in sex hygiene shall be a part of the regular curriculum of the elementary schools. The work is given not only in the boys' schools but also in the girls' schools. In some schools the instruction is given by teachers of biology; in others, by physicians. In Switzerland the teaching of sex hygiene is official in the high schools.

Journals are being published, congresses are being held. In a certain congress there were nineteen papers read, the consensus of opinion being that the proper place for sex education is in the home. As soon as a child's curiosity is aroused to ask a question regarding its nature and origin, it should be truthfully and carefully answered; but the instruction should be graded, and as the child grows older should be supplemented by instruction in the school and by the family physician.

In the United States an organization was established in 1905 to study this matter. Since then organizations have been formed in Philadelphia, Baltimore, Chicago, Milwaukee, St. Louis, Denver, Portland, and Spokane.

Improve the Curriculum

THE demand for a more rational and useful curriculum in our elementary schools is becoming general. It is now appreciated that the university and high-school requirements should not shape the education of pupils who never advance beyond the grades. The *California Monthly Bulletin* in a recent issue says that five sixths of the pupils entering the grades now will be looking for jobs in 1920, and that the main requisite for success will be good health, and a knowledge of how to read and write and perform simple calculations, and continues: —

"The schools have these children eight years as an average, and the schools at present fail to give them the two great assets in starting their careers,—a practical knowledge of health preservation and practical training in some trade. To put this off until the high school is reached, means to miss eighty-five per cent of the children."

The *Bulletin* advises the separation of the boys and girls in the seventh and eighth grades, the boys to be placed under a strong, intelligent man, and the girls under a sensible, motherly woman. The book work should be materially cut down, the boys spending half the time learning some trade, and the girls spending a like time with domestic duties. We think the suggestion a good one.

A Study of Pellagra

DR. C. H. LAVINDER, of the United States Public Health and Marine Hospital Service, who has devoted much time to the study of pellagra, in the September 29 *Public Health Reports* gives a summary of what is known regarding pellagra as a disease of the masses. He refers to various theories, without expressing an opinion in favor of either. But he says that evidence is accumulating that the disease is one of locality, or place. It has frequently been noticed, even where the disease is very prevalent,

that it occurs in "spots." It is also largely rural and rarely urban. "It is the agricultural, rural classes, the poor peasants of Italy and other parts of Europe, who have borne the brunt of its ravages." But in the United States it is in the small mill towns and villages of the Southern States where the disease causes the most damage. It has long been noted that the disease attacks those who are "poorly housed, badly clothed, and miserably fed;" but in the United States this does not seem to be necessarily so. The disease does not always spare the well-to-do classes, even those living in the cities, in either America or Europe.

Attention is called to the relation of the disease to water. The general opinion of writers is that pellagra is in no sense contagious, though in the United States some have stated a belief that it may be transmissible. It is a remarkable fact that in most families where the disease is prevalent, only one member of the family has it. In 269 families, there were 274 pellagrins, only five of the families having two pellagrins. On the other hand, the disease is sometimes quite prevalent in an insane asylum or other public institution where the food and hygiene are above reproach, leading to the suspicion of some connection between the disease and the locality.

In Italy the disease is comparatively mild, but in the United States it is quite virulent, a fact which suggests that the Italians may have developed a partial immunity.

Dr. Lavinder gives these as a few of the somewhat discordant facts in our possession, with the hope that other facts may be gathered which will put us on the track of the true nature of pellagra. He is of the opinion that pellagra is one disease, and not several similar diseases.

A Pellagra Investigation

THE *Public Health Reports* for Sept. 22, 1911, reports an investigation of pellagra in southeast Kentucky, involving more than one hundred cases, with eighteen deaths. The general conditions noted were that practically every case occurred in poor families living in rather unhygienic surroundings, and that, so far as the investigator was able to learn, the victims all lived within five hundred feet of a watercourse. A number were living in houses built literally on the banks of the streams. Where he was able to inquire, corn products had invariably been part of the diet. In all cases where it could be ascertained what was the sources of the drinking-water where the disease was contracted, it was found to be surface water.

So this investigation might be supposed to bear out the corn theory of pellagra, and also the Sambon theory, which attributes it to the action of some small insect living along the watercourses.

Infantile Paralysis

IN July, 1911, a commission appointed by the French Academy of Medicine made a report on infantile paralysis, expressing full conviction, after careful investigation, that "poliomyelitis is not only infectious but contagious, and transmissible not only from patients and convalescents, but from healthy persons who may be carriers of the germs, and by means of objects which may have been in contact with patients. For unlike some of the contagious disease germs, the germs of spinal paralysis have been found to resist drying for fifteen days, and even as long as twenty-eight days; so that the disease may be carried by dust."

The commission calls attention to the fact that the disease is often transmitted

in schools, markets, fairs, and other public gatherings, and suggests that there should be a law requiring that notification should be sent to the health authorities of all cases of the disease, the same as for other infectious diseases; and that not only patients and convalescents, but their brothers, sisters, and playmates should be required to remain away from school.

Interested Science?

THERE is a *Journal of the Institute of Brewing,* which from time to time publishes reports of the "International Physiological Research Institute," founded for the purpose of carrying out investigations on the physiological effects of beer and other alcoholic beverages. Naturally, this "research institute" is "finding" many good things to report about beer, and some even of the medical journals are copying the stuff. Let us know, please, who finances this institute, and also the journal.

Approved Methods of Suicide

THE Monthly Bulletin of the California State Board of Health raises the query why the Americans make strenuous objection to suicide by self-poisoning, dropping off a ferry-boat, blowing out one's brains, etc. One may not even turn on the gas in his own house and die in peace, if he is detected. His friends step in, or the officers of the law, and he is forcibly prevented from carrying out his intentions. Yet if he is shortening his life by methods just as sure though a little less rapid,— that is, by means of tuberculosis or by the alcohol-syphilis method,— society looks on with the comment, "It's his own affair." Is "society" really interested in preserving the lives of its members, or does it just dislike the inconvenience of having blood and brains spattered about? If the latter, would not the effort to avoid the gruesome at least require that they do something to lessen the number of tuberculosis and syphilitic wrecks walking our streets, by preventive measures? Is it any more of an infringement of a man's liberty to say he must not expose himself to tuberculosis and syphilis than it is to say that he shall not spatter his brains on the carpet?

The Value of Public Health Officers

OUR friend Dr. C. O. Probst, the efficient secretary and executive officer of the Ohio State Board of Health, has called attention to the superiority of the public health system in England. To quote: —

> "The English schools some time ago created the degree of D. P. H., Doctor of Public Health. To attain this degree one has to have, first, a university degree; then a medical degree, after a four years' course, after which there is a year of special work in health subjects, and a final year of practical field work under the direction of a medical officer of health, who is himself a D. P. H. No man may be employed as health officer of any city of fifty thousand inhabitants or over in England unless he holds this degree. Once in office, if efficient, he is seldom removed. How different are conditions in this country! However, a beginning has been made. Harvard Medical College has this year established a D. P. H. course, and at a recent visit there I found six students enrolled."

Not only are physicians who have never had a special training in public health, employed as health officers, but the office not infrequently falls to men who have no medical training at all. When we are fully civilized, we shall pay more regard to the health of the people; for government is efficient in proportion as it guards the interests of the masses; and there is no interest more important than life and health.

CURRENT COMMENT

WHY CONSUMPTION IS NOT CURED

IN the month of May, Mr. Brown moved into a house in another part of the town from that where he had always lived. By fall he had contracted tuberculosis. It was learned later that several different families, which had occupied this same house in succession, had lost, in turn, several members from tuberculosis. No attempt had ever been made to disinfect the house.

Mr. Brown went at once to Arizona, pitched his tent on a certain spot, and never made any change from that one spot until his death. Note that fact. As a result, the soil over which he slept night after night, became saturated with the accumulated germs which he expelled in coughing, so that he was continually, at night, rebreathing into his system the very "seeds" which caused the disease. He was repoisoning himself nightly, and didn't know it. His system would have been able to throw off the original germ poison which it contracted, but it was not strong enough to withstand a new dose of the poison every night. Had he daily changed the location of his tent, he could have slept each night in an atmosphere practically germ-free.

There is a lesson in this. The open-air treatment is all right, but it must be carried out by right methods. All early cases of consumption which have failed to recover by outdoor treatment, must lay the blame to faulty treatment. Mr. Jones, who went to Arizona and recovered, did change his location every day, and in doing so, he avoided Mr. Brown's fatal mistake.

How about Smith? This case is of the greatest importance. He recovered his health in the West, and returned to his home feeling fine — back to what? — To the very same plague-ridden room in which he had first contracted the disease,— a room reeking with tubercular germ-life, which had been occupied, it was learned later, by five different consumptives at various times. The disease got a hold on him the second time for the simple reason that he came back to the original source of his disease. He should have sought new quarters; or else the house, and particularly the room he occupied, should have been disinfected before being occupied by him or by any one else.

These three cases cited are but typical instances. There are thousands upon thousands of Browns, and Joneses, and Smiths, living and dying this very day, whose story, if told in its true light, would match exactly the simple but pathetic histories of these three men.— *From "Throwing Death off the Trail," in Technical World Magazine.*

Rabies, or Hydrophobia

SKEPTICISM with reference to the existence and prevalence of rabies in animals, or hydrophobia in man, strange as it may seem, is still entertained by a few prominent professional men. Their contention shows an unwillingness to accept the work of reputable investigators with regard to this particular disease, al-

though other results obtained by the same investigators upon allied subjects are accepted and advocated. There is no greater galaxy of names associated with the study of any of the infectious diseases than is connected with the experimental investigation of rabies. The ablest scientists who have adorned the medical and veterinary professions, and to whom we owe the greatest deference for having advanced our knowledge of contagious diseases, have repeatedly shown by their experiments that rabies is a specific, communicable disease, preeminently affecting the canine race, although all warm-blooded animals, including man, are susceptible to it.

Many years of patient scientific research have been required to lead these investigators to a clear comprehension of the nature and characteristics of this disease. It was known and described several centuries prior to the beginning of the Christian era, and from the dawn of history the disease has been feared and dreaded. But it has been only in comparatively recent years that we have arrived at a tolerably clear understanding of the facts concerning this disease, which have to a certain degree displaced many of the fallacies and superstitions that have had a strong hold upon the public mind for many years. Indeed, it is still a widely prevalent belief that if persons or animals are bitten by a dog, they are liable to become rabid if the dog should contract the disease at any future time. There is no foundation for this impression, and it would be a great comfort to many people if the fallacy of this idea were appreciated. All experience, both scientific and practical, goes to show that rabies is transmitted only by animals that are actually diseased at the time the bite is inflicted.— *Farmers' Bulletin 449, United States Department of Agriculture.*

Does Alcohol Cause Insanity?

I AM not an abstainer, but the experiments and observations made in lunatic asylums almost persuade me to be an abstainer. Nowadays we have ceased to speak of alcohol as a cause but as a factor. Pearson has spoken of alcohol as a coefficient, or an antecedent. When a man leaves the asylum, and then has to be committed again after drinking half a glass of beer, I know that alcohol is a cause of insanity.

As a result of our extensive experience I feel free to tell my students that alcohol takes away from a man the three C's, courtesy, ceremony, and convention, without which one can not get along in society, and adds the three P's, paradox, persiflage, and pruriency.

Alcohol takes away the memory. The emotions, which regulate conduct, are greatly changed under the influence of alcohol. If you want to find an individual's weakest link, give him alcohol.— *Robert Jones, before the British Temperance League.*

The Cause of Warts

A SIMPLE injury may give rise to a wart provided the tissues are in a favorable condition. Moist heat, causing maceration of the epithelial cells, furnishes the favoring condition. The presence of warts on the soles of flat-footed people is quite frequent. These patients almost always have moist feet. Troubles do not come singly. First the broken arch, next the sweating feet, finally the warts to add to the agony.

But warm water alone may cause maceration of the cells. A patient with recurring warts on the soles of his feet was found to be in the habit of soaking his feet in warm water every night because of the pleasure it gave him. Removal of the warts and stoppage of the warm water application resulted in cure.

It is possible that an injury alone, especially among the young when the cells are more active, may cause warts.—*Douglas W. Montgomery, M. D., in Journal of American Medical Association.*

Individualized Diet

WHOEVER wrote the old nursery rhyme, "Jack Spratt could eat no fat, his wife could eat no lean," was a very observant person, who recognized that while Jack and his wife were both perfectly healthy individuals, they had personal peculiarities with reference to the kind of food which kept them in health.

As for our school of girls and boys, you will find all of them active, and all doing the same kind and amount of work, both physical and mental, regulated according to their ages; but while the majority digest and metabolize their food perfectly, a certain number do not thrive; they get headaches, their complexions become sallow, and they are deficient in the energy and happiness of childhood, and in winter suffer severely from cold, and are apt to have chilblains. Now as a matter of fact, personal experience with these children teaches us that if they receive individual attention in the matter of diet, getting less meat and more of the vegetable proteid foods, together with increased milk and fats, their health becomes immensely improved, and the types of disorder to which I have referred largely disappear. —*Charles J. McAlister, M. D., F. R. C. P., in Journal of the Royal Institute of Public Health.*

Fresh Fish in Copenhagen

WHEN a person buys fresh fish in Copenhagen, he really gets it. Boats full of live fishes come close to shore and right into the town by means of the salt-water canals. In this manner the smaller fishes are kept alive until the moment they are sold. Wooden boats are pierced with holes and filled with fishes. These boats float on the surface of the water, and the living fish is taken out of them when wanted. But as every one can not go to the water's edge to buy fish, there are water-tanks on wheels, and the live fishes are brought to the doors of the houses. The principal fish-market was built by the municipality, and is let to a wholesale fish salesman. It is a delight to see how clean and bright these premises are kept. There is no spreading of the fishes on slabs, where dust and dirt may settle on them. Neat tessellated tile tanks are filled with running water, and here the smaller fishes swim about. The larger fishes, such as cod and halibut, are too cumbersome to keep alive, and are therefore placed in the cold-storage rooms.

Not only are the fish fresh but they are generally well cooked. At Copenhagen the domestic servants' trade-union has instituted a school, where members of the union are taught how to be clean and neat, how to sew, to wash and starch, and above all, how to cook. A little restaurant is attached to this school, where any one can have a cheap meal, thus giving the pupils an opportunity to exercise their art.—*London Lancet.*

In this department, articles written for the profession, and public lectures on hygiene, which contain matter of interest to LIFE AND HEALTH readers, are given in abbreviated form. Sometimes the words of the author are given, but more often the passage is abbreviated, or else paraphrased in popular language. Technical matters and portions of articles having no popular interest are omitted. Credit the authors for what is good, and blame "us" for the rest.

THE HEALTH OF SCHOOLCHILDREN

DISEASE is not a thing apart; men are sick as they deserve to be sick. At one time the principal work of the physician was to go to the bedside, learn what he could about the case, and write a prescription. The chief work of the physician now is to teach people how to live.

The same evolution has taken place in the work of the health department. Once this work was to control contagious diseases. Now it is realized that communities have consumption as they have deserved it, and it is the duty of the health department to see that the community changes its wrong living to right living.

We have come to realize that the physical education of the child is no less important than the mental education. School inspectors were not long in recognizing that enlarged glands, hypertrophied tonsils, adenoids, and defective teeth are greater menaces to pupils physically and mentally than the contagious diseases, so that the work of school inspection, which at first was intended merely to prevent the transmission of contagious diseases, was supplemented by a thorough physical examination of the pupils.

In 1910 there were 14,685 exclusions for contagious diseases from the Chicago schools. There were 120,000 physical examinations made in 1910; out of this number there were found defective, 53,000, or nearly forty-five per cent. Nearly 44,000 had defective teeth, 24,000 had diseased tonsils, nearly 19,000 had failing vision, and more than 16,000 had swollen glands. All these troubles were serious enough to affect health, growth, mentality, and future usefulness.

Of course the parents are thankful to be reminded of these conditions so that they can be remedied? — As a matter of fact, they often resent the information given by the doctor. Often the remedies suggested are not heeded. These children are defective because of the ignorance and the indifference of their parents. For this reason, the department of health has found it necessary to have a follow-up system. Here comes in the work of the school nurse. The school nurse is useful in very many ways. She assists in the discovery of cases of contagion. She treats minor troubles, such as vermin and skin diseases. She visits families, and sees that prescriptions are properly carried out; and in some cases she does the work herself, in a room assigned to her in the school.

Care of the Teeth of Children in School

Of the nearly 44,000 children found with defective teeth in 1910, only 1,207 had their teeth treated. Next to mouth-breathing, defective teeth constitute the most serious defect the schoolchild is likely to have. We have come to realize

that it is not clothing and other things which transmit contagious diseases, but the people themselves; and there is no surer way of keeping alive the germs of contagious diseases than the presence of uncared-for cavities in the teeth.

During school age the child should double his weight, and for this purpose he requires splendid powers of digestion. The problem for the child is to assimilate enough food to build up a healthy body. This entails a great strain on the digestive apparatus. In order that the digestive system may not be burdened, it must be in good condition. Any bad mouth condition, such as decayed teeth, will act disastrously on the digestion.

Chicago now furnishes five free dental clinics for schoolchildren, convenient to the schools. It is able to do this by the courtesy of the dental associations.

The first open-air school in Chicago was opened about two years ago on the roof of a building. It has just issued a most interesting report.

There are three types of schools,— the open-air school, the cold-room school, and the ordinary school. The open-air school is devised for students who are diseased or subnormal, tubercular, or from houses in which there is so much tubercular infection that the students are probably infected. For more than a year the nurses have been going to houses from which deaths from tuberculosis have been reported, to teach the people how to live in order that they may escape the disease. They try to persuade them to be examined. In the average home a considerable number of the survivors are found to have the disease in a latent or active form. A large proportion of those who are with the patient during the last ninety days are infected. Children from these homes who are not apparently tubercular, probably have the disease in a latent form. These children we get into the open-air schools.

The open-air school has no protection from the temperature except the windshield; but the children have extra clothing, such as wraps and felt boots. They also have additional nourishing food, and are given periods of rest in a reclining position during the day. The open-air school is of immense educational value, teaching the people that *air makes well,* that nature's method of cure is God's method of cure. A large proportion of those who observe will learn the lesson that if air is good for these exceptional pupils, it is good for every-day life. Perhaps, after all, that is the most important educational function of the open-air school.

The cold-air or open-window school has a larger influence. It is the ordinary schoolroom with the usual radiation, but with the windows wide open. The temperature is generally from forty to fifty degrees during the winter. Any "backward" child is usually able to generate sufficient heat to stand this temperature. The children are allowed to wear their wraps. They study for a moderate length of time. If cold, they are allowed to play in order to warm up. In this way they learn more than they would in the closed rooms. The food furnished at home is usually sufficient in these cases. This method is applicable to more than half of the children, and can be applied to practically all our schoolrooms. There is very little extra expense for clothes or food.

As a result of these experiments we learn that our ordinary room temperature of seventy-two degrees is entirely too warm for the well-being of the children, and accordingly we are working the temperature of all the rooms down to sixty-eight degrees.

Another thing we are learning. When a large number of people are gathered together, it is necessary that the rooms be thoroughly blown out occasionally by

throwing open all the windows, and allowing a free circulation. When fresh air comes into the room at an ordinary rate, it makes practically no diminution in the bacterial count of the room air; but when the room is thoroughly blown out in this way, the bacteria are practically eliminated.

Another thing we have learned is the need of more humidity in the air. Dry air injures the mucous membranes so that they do not respond to the action of bacteria, and as a result we have bacterial infection, diseased glands, and mental inferiority.

Some will say that children of school age never die. Why is it necessary to make so much fuss about school hygiene? The answer is that the children are exceedingly impressionable. At this age, the future physical, mental, and moral state of the pupil is largely decided. There is a relationship between large glands and mouth-breathing and the criminality of later years. The neglected child, pigeon-breasted, a mouth-breather, with adenoids, hypertrophied tonsils, and enlarged glands, becomes a man with mind and soul as well as body distorted. And it is this class that afterward helps to make our laws and the future of our nation. As a nation, we can never be better than our electors permit us to be; hence the future of our nation depends very largely on the health that we vouchsafe to our school-children.—*Address by W. A. Evans, M. D., Commissioner of Health, Chicago, before the Monday Evening Club, Washington, D. C.*

Prevention of Intemperance by Housing

THERE are two ways to combat intemperance. The direct method attempts to root out the weeds. The indirect method introduces sturdy plants which will eventually dislodge the weeds. Both methods are good, but the best results come from a combination of the two. The direct method, that of absolute prohibition, in often impracticable, or the time is not yet ripe for such a measure. It is not possible effectually to close the public houses [saloons] if the majority of the people want them.

In order to get rid of the desire for the public house, the most practical plan is to encourage healthy desires for social activities which will take the place of the public house; in short, we must overcome evil with good. The best way to keep evil out of the mind is so to fill the mind with wholesome thoughts that evil can not enter.

That was a wise man who said, "Let me make the songs of the people and I care not who makes its laws;" but a better statement would be, "Let me build the houses of a people, and I care not who makes its laws." Good houses will do much to banish morbid conditions and to build up a purer humanity.

But how shall we create an international demand for good homes? We must begin by making good homes for the working population. Make a supply of houses built for health and comfort, which will create a demand, and this demand will be followed by an increased supply.

It will not do to wait for majorities or governments to carry on such a project. Do what you and your circle of supporters can accomplish, and even governments will at length yield.

In 1898 I published "Garden Cities and Morals," for I saw that we must create new cities, where we would have municipal ownership, and where industries drawn away from London and other larger centers could be worked to better advantage.

As an experiment and an example, I organized the Garden City Association and laid out the garden city, Letchworth.

nearly forty miles from London, having six times the area of the old walled city of London. I saw that whether men realize it or not they need the combined advantages of the town and country. Formerly a man had to make a choice between the evils of the city and the evils of the country. I saw that this could be obviated, giving the inhabitants the advantages of both town and country, by building a city having houses with ample garden room, and surrounding this city with a permanent agricultural belt, so that the town can not grow by mere aggregation, but by aggregation combined with segregation.

We have succeeded in establishing a fine industrial town with a population of over six thousand, and our work is only one fifth done. Nearly all our factories are one-story, well-lighted, warm, and ventilated. The working conditions are excellent.

It is our scheme to house the people comfortably, in locations convenient to their work. For the working class we put up houses having three bedrooms, a living-room, and a garden; for every house, however humble, should have a garden. The husband who comes home and finds the wife washing, feels inclined to go away, and is much more likely to go to a public house if he has no garden to keep him occupied. Such houses rent in Letchworth for five and one-half shillings a week, or with bath for seven shillings a week [$5.50 and $7 a month].

The death-rate is the lowest in Great Britain. The infant mortality is one half what it is in London and one third what it is in England. When parents who have moved from some of the city districts find their children healthier, they are prouder of them, and take more interest in their welfare.

We have not had to go to the government for liquor laws, but have established in Letchworth local option and votes for women without any legislation. The Garden City Company, Ltd., being landlords, has the power to say to those desiring to take a lease, "You must enter into a covenant that you will not apply for license without the permission of the people." On two occasions the question of license was up for consideration, and both times it was voted down.

It is not enough to provide good houses if the scheme is to be a success; but there must be a certain amount of ground set apart for all time as a playground. There should be clubs, non-licensed public houses, schools, athletic grounds, some of the latter near the factories.— *Ebenezer Howard, address before International Alcohol Congress, The Hague, September, 1911.*

Our Civilization Menaced

THOUGH England does not now prohibit the sale of liquors, it will probably do so within this generation.

Knowledge is the most important factor in this crusade against evil. The former verdict has already been reversed. What was once known as "water of life" is now known to be the water of death.

But even with this change in verdict, our civilization is not yet secure. Old, well-established civilizations have vanished in the past. No civilization has thus far been able to perpetuate itself. Within each one there have been destructive forces at work which have eventually made for the downfall of the civilization. There are two menaces to our present civilization:—

1. Social instability. The integrity of society depends upon the self-inhibition of its members, that is, self-control and curbing of appetites for the benefit of the community. When loose reign is given to appetites and impulses, chaos succeeds. Recently in England the loss

of self-control was caused by alcohol. The disgraceful riots in Wales were shown to be due to the free use of alcohol. When the problem of maintaining civilization is difficult, when peace is threatened, the most important measure is to get alcohol out of the way.

With the coming of democracy and the decadence of militarism, this instability of the populace will be more manifest, and there will be additional reasons why alcohol should be kept away from the people.

2. Lowered vitality. Old doctrines have been completely subverted. Physicians once relied on alcohol in the treatment of nearly everything. Now physicians seldom prescribe alcohol. When they do, it is because they get immediate "results," or for the more sinister reason that alcohol is a drug that demands a repetition of itself, and "once a patient, always a patient." We now know that alcohol, so far from increasing health and efficiency, does exactly the opposite.

Degenerative diseases are caused by germs. There is a constant warfare between the cells of the body and these germ cells. We now consider disease in terms of resistance. Consumption is the chief disease of our Western civilization, and we have learned that in this disease alcohol definitely favors the germs rather than the tissues.

In the hospitals the alcohol bill has been steadily going down to almost nothing, the milk bill has been making a corresponding increase, and there has been at the same time a marked diminution in the death-rate.

The tests of success with doctors is far more rigorous than formerly, when a man's success was gaged by the feelings of his patients. By modern methods of precision and by carefully compiled statistics, we know that physicians who give no alcohol are the most successful.

Sir Thomas Frazer, who is not an abstainer, for thirty years treated pneumonia with alcohol, but recently he has treated the disease without alcohol, the consequence being a lowering of the mortality rate of his patients.

The birth-rate in Western civilizations is falling. That in Japan is rising. This will eventually mean a supremacy of the yellow race. Medical men are not able to overcome the tendency to small families. The most they can do is to save the babies that are born. Aside from maternal ignorance, alcohol is the greatest single cause of infant mortality. Here we have another way in which alcohol is undermining our Western civilization.— *Dr. C. W. Saleeby, in an address before the World's Prohibition Confederation, at The Hague, Sept. 13, 1911.*

The Brain and the Voice in Speech and Song, F. W. Mott, F. R. S., M. D., F. R. C. P. Published by Harper & Brothers, New York. Cloth, 112 pages.

This little book containing the subject-matter of three lectures "On the Mechanism of the Human Voice," delivered at the Royal Institution, England, is an attempt to place before lay readers in simple language the relation of the brain and the vocal organs to song and speech. While technical terms are used, they are carefully explained. The book contains a number of excellent illustrations.

Herself: Talks With Women Concerning Themselves, by Dr. E. B. Lowry, author of "Confidences," "Truths," etc. $1. Forbes & Company, Publishers, 325 Dearborn St., Chicago.

This advice to women of all ages by a physician constitutes one more effort to overcome the reproach that we allow our young people to go to ruin through their ignorance and our mock modesty and prudishness.

It is a lamentable fact, as the author says, that the majority of women and girls are ignorant of the structure and function of their most important organs. Physiology is taught in the public schools as if there were no such thing as sex and sex functions. This is no doubt proper in mixed schools; but *somehow, somewhere*, every boy, every girl, should be taught the essential facts upon which his or her future efficiency and happiness depend. The proper teacher of the boy is the father, and the proper teacher of the girl is the mother, but unfortunately it is rare that either father or mother has the ability or the good sense to impart this most necessary instruction. The least they can do is to put into the hands of the growing child some carefully written book on the subject.

Dr. Lowry has written a very plain but chaste book, giving in simple language just the knowledge every girl should have of herself, and warning against the various dangers and pitfalls to which all girls are liable.

After taking up the special anatomy and physiology of women, and the diseases to which they are subject, the author treats such topics as "The Black Plagues," "Fake Medical Advice for Women," "The Marriage Relation," "Childless Homes and Real Homes," "Some Causes of Divorce," "Why Girls Go Astray," "Effects of Immoral Life," "Flirtations and Their Results," "White Slavery," "The Need of Early Instruction of Boys," "Why Boys Go Astray," "How Shall the Child Be Told?"

The publication of such books is an evidence that we are learning that sexual evils can not be overcome by silence and prudery.

War on the White Plague, by Rev. John Tscholl. Paper, 60 cents; cloth, $1. English and German editions. Published by M. H. Wiltzins Co., 413 Broadway, Milwaukee, Wis.

It is surprising with what acumen the author, who is a priest, has traced to their sources the causes of tuberculosis and allied diseases. In the first place, he strongly emphasizes the necessity of personal hygiene, and urges that children should be better taught the facts regarding health and disease. Next, he shows that the prevention of disease is a social as well as a personal matter. Society as a whole is responsible for the ills that afflict society. "Society must either provide means for a healthy and happy social life or perish of social diseases," says Mr. Tscholl; "there will be tuberculosis as long as social injustice maintains wide-spread poverty."

He carefully goes into the nature of tuberculosis, its means of propagation, and what may be done by individuals and by society to prevent it.

In the second part of the book he treats of what he well calls "the five universal remedies,"—air, light, water, exercise, and temperance.

The book is an excellent manual of personal and social hygiene, calculated to help readers improve their general health, especially with reference to the prevention of tuberculosis. The book is worthy of a large circulation.

A statement by Dr. Ravenel, president of the Wisconsin Antituberculosis Association, regarding the book is worth quoting: "On the whole, the book is a most excellent one; and of all the books written by non-medical authors which have ever come under our notice, we can give this one our most hearty recommendation."

IN THE MAGAZINES

Discussion of Articles on Hygiene and Kindred Topics Which Appear in the December Issues of the Magazines

The Designer

"Dodging the Hall Bedroom," * relates the experience of a girl who thought she could live more economically, renting a room and taking meals than boarding — until she tried it. This experience should be valuable to young women living alone in the city, whether they are students or wage-earners. "What Designer Cooks Find Out," contains, as usual, suggestions passed on to others by *Designer* readers.

Pearson's Magazine

"An injection of cocain will allay the pain caused by a splinter. But it will not remove the splinter! Too many users of so-called headache remedies let the splinter remain because it is inconvenient to remove it. The same may be said of some other every-day diseases." So says Dr. Clarence Maris, in "The Cure for Headaches." *

What is the "splinter"? After giving seven ordinary causes for headache, he says: "More than one third of all headaches is the result of chemical embarrassments of some portion of the digestive tract," which the doctors usually attribute to "sedentary habits," but which our author more bluntly says are due to laziness or gluttony. The article deals separately with headaches from different sources, giving the means of prevention and cure. We think his statement that one third of the men and women of America have syphilis is rather fantastic, to say the least, and would need further confirmation. The article closes with a very convincing warning against the use of headache powders. For digestive headaches, he says "the best remedy is diet, exercise, and castor-oil." "Eat less and work more,— with hoe and shovel,— and you'll laugh at headaches."

The Chautauquan

"Refrigeration," by Carl S. Dow. "Some of the Latest Ideas in Housing," by Mabell Shippie Clarke Smith.

Harper's Bazar

In "Diet and Flesh Reduction," * Jane Calhoun gives in popular form what seems to be the most successful and most sensible method of overcoming or preventing a tendency to obesity, not by attempted starvation, but by careful food selection. Briefly the plan is to follow a rather monotonous dietary; and as one dietary might be better for one person, and a different dietary for another, the merits of various simple combinations are discussed by the author. Those who find themselves growing too fleshy will find valuable suggestions in the article.

Mother's Magazine

"A Lesson in Making Up," by Augusta Prescott, does *not* give instructions for "making up" with brush and rouge, or other artificial devices, as the title might suggest, but it *does* tell how the average woman can make the most of her physical charms in a healthy, natural way.

Kate Davis has contributed several articles to Baby's Realm, among which are "Indigestion," "Fever," "Colds," "Food Variety," "Catarrhal Conditions," and "Remedies on Hand."

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*The articles designated by the asterisk have been read by the editor of LIFE AND HEALTH.

Criticism of American Eating.— A French chef says that Americans eat too much meat and too heavy breakfasts.

Public Drinking-Cup.— Colorado has been added to the States which forbid the use of public drinking-cups in the schools.

A Pellagra Hospital.— The city of Atlanta, Ga., has the first hospital in the United States established for the reception and treatment of pellagrins.

Pellagra Study.— A gift of $15,000 enables the New York Postgraduate School to finance an expedition to investigate pellagra in the Southern States in the spring.

International Campaign Against Sleeping-Sickness.— Germany and England have entered into an agreement to work together in their efforts to stamp out sleeping-sickness in Togoland and the Gold Coast.

A Significant Admission.— A writer in the *New York Medical Journal*, who believes that coffee in moderation has its uses, makes the following significant admission: "Coffee-drinking is sometimes harmless, often harmful, and, generally speaking, a habit that is not to be encouraged."

In Place of the Roller.— An arrangement has been invented by which small individual towels, attached by a loop to a curved rod so as to prevent their being stolen, may be used one at a time and dropped into a receptacle. This device will probably do away with the use of the unsanitary roller-towels in large industrial concerns.

Temperance Teaching.— The teaching of temperance in the London schools began fifty years ago. Canada was the first British colony to adopt such teaching. In Victoria, New South Wales, there has been definite temperance instruction in the schools since 1899. The delegate from that colony to the Imperial Temperance Congress testified that the lessons are actually taught, as he had learned, by questioning pupils in various schools. As a result there is in Victoria a steady decline in the drink bill.

Hygiene Taught by State.— The New York Health Department will give a series of lectures on hygiene and public health in every important city and town in the State.

Bakers Must Be Clean.— The work of the inspectors in the District of Columbia continues, and proprietors of bakeries, restaurants, or lunch-rooms whose places are uncleanly are subjected to fine.

Saccharin Forbidden.— An amendment has been added to the New York sanitary code forbidding the use of saccharin in foods and beverages. After Jan. 1, 1912, it will also be unlawful to use saccharin in foods in the District of Columbia.

Crusade Against Bad Fruit.— Fruit dealers who sell unripe oranges which have been put through a sweating process in order to make them appear ripe, are being prosecuted under the pure food law. The sweating process colors but does not ripen the fruit, which is tasteless and worthless. Its sale is, of course, a base swindle, and ought to be stopped.

Plea for Sex Hygiene Courses.— The Philadelphia director of public health has made a strong plea that courses of instruction in sex hygiene be introduced into the schools. He says: "Penitentiaries, insane asylums, institutions for the blind, and homes for the feeble-minded would not contain twenty-five per cent of their population had the present adult generation been properly instructed in their youth in social hygiene."

School Buildings as Recreation Centers.— Thirty-one cities have reported to the Playground and Recreation Association of America that their schoolhouses are being used as recreation centers. At the Rochester play congress in 1910, Elmer Ellsworth Brown, then United States Commissioner of Education, earnestly advocated such use of the school properties. Since then there has been a general interest awakened in the subject, and we are learning that there is more than one way of getting returns out of our investment in school buildings. These recreation centers may become social and educational forces of great value.

Foolish Fashions.— According to officers of the Pennsylvania Railway Company, a large proportion of the accidents to women getting on and off trains or going up- and down-stairs in railway stations, is due to the use of high heels or hobble skirts.

More Than One Way.— Colorado has no law providing for the condemnation of diseased dairy animals, so the authorities have determined to protect consumers by publishing the names of dealers who refuse to have their cattle tested for tuberculosis.

Green Cross Instead of Red.— The physicians of Pittsburg, Pa., have adopted, in place of the red cross, whose use is to be confined to the army and to the International Red Cross Society, the green cross as an emblem of mercy in time of peace.

Dr. Wiley on Public Health Department. — At the National Civic Federation held in New York, October 2, Dr. Harvey W. Wiley strongly advocated a national health department, with a cabinet officer. He believes such a department would be an enormous asset, even if measured only by money value. He thought it no more than reasonable that the life of every American citizen should be as carefully guarded as the lives of coolies on the Isthmus of Panama.

Snakes in India.— It is said that in 1910, 22,000 persons in India died of snake bite, and this notwithstanding the earnest efforts of the authorities to do away with the pests. Wild beasts and snakes together cause the death of nearly 500 a week in India.

Experiments on Nature of Pellagra.— While pellagra is generally believed to be due to a food poison, there are some, following Sambon, who believe it may be due to some organism. A series of experiments attempting to produce pellagra in monkeys by injection of blood, spinal fluid, and nervous tissue from pellagrins failed. Had they succeeded, it would have gone a long way to prove the parasitic nature of the disease.

The Owen Bill.— Renewed effort will be made at the coming session of Congress to secure the passage of the Owen bill providing for a national department or an independent bureau of health. Much of the objection to this bill is due to misconception of what a national health department would be. It would no more, and could no more, interfere with personal liberties than could a department of agriculture. It would not and could not interfere with the practise of medicine, which is a function governed by the laws of the several States.

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