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EDITED BY J.H.KELLOGG,M.D.

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CONTENTS

July, 1906

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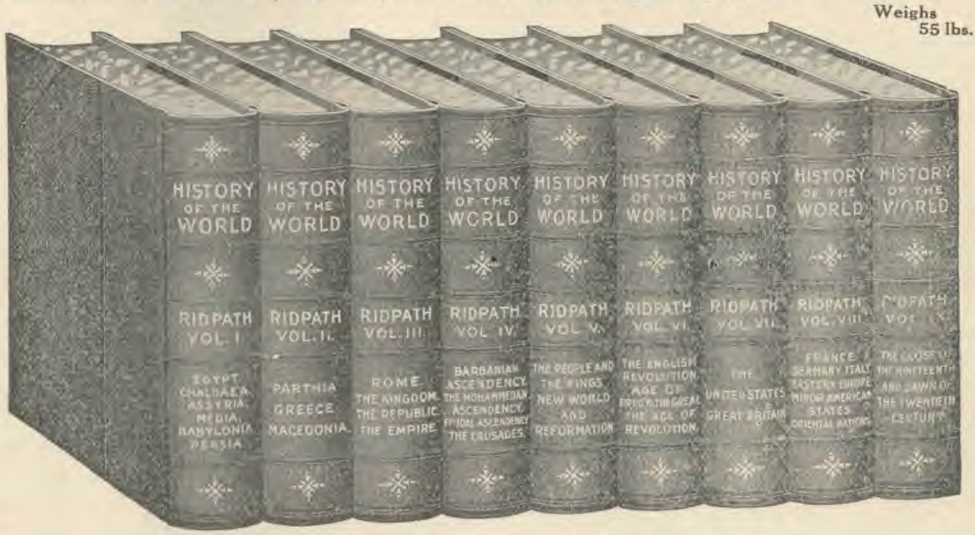

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IOWA SANITARIUM, 603 E. 12th St., Des Moines, Iowa.
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VEGETARIAN CAFE, 814 Pine St., St. Louis, Mo.

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VEGETARIAN CAFE, S. 170 Howard St., Spokane, Wash.

CROFTON'S PURE FOOD AND VEGETARIAN RESTAURANT, 193 Devonshire St., Boston, Mass.

THE LAUREL, 11 W. 18th St., New York City.

HYGEIA CAFE, 203 3d Ave., Peoria, Ill.

VEGETARIAN CAFE, 105 6th St., Portland, Oregon.

VEGETARIAN CAFE, 45 Hunter St., Sydney, N. S. W.

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HEALTH FOOD STORE, J. H. Whitmore, 118 Miami Ave., Detroit, Mich.

BOSTON HEALTH FOOD STORE, W. F. Childs, Room 316, 100 Boylston St., Boston, Mass.

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A NEW FIELD

OF USEFULNESS is now open to those who are interested in health principles and right living.

The world is breaking away from the bondage of conventionality. A new regime is coming into vogue. The interest in hygiene is growing everywhere. The housewife is recognized as the guardian of the health of the home, the controller of the conditions whereby the physical welfare of the inmates of the home may be promoted.

This growing interest in household hygiene has developed a new science which might be called **hygienic economics,** and the demand for women trained in the theory and practise of this new science is already so great and constantly increasing that the necessity for special opportunities for giving the necessary training has long been apparent. The effort to satisfy this need has led to the organization of the

Battle Creek Sanitarium School of Health and Household Economics

This training school differs from all other schools of domestic science in the fact that the entire course, both theoretical and practical, has been developed in harmony with the one dominant idea of health. This, for example, is the only school where students can obtain a thorough knowledge of scientific dietetics and a practical knowledge of up-to-date hygienic cookery. Any intelligent, capable woman who has finished a course in this school can be assured that her services will be in demand.

The Battle Creek Sanitarium management is constantly receiving calls for those who can teach the principles and methods employed by this institution. In view of this fact, the management are offering three courses of study, as follows:

Course for Matrons and Housekeepers

This is a one-year course, and is especially designed for those who wish to fill positions as matrons or housekeepers of institutions. The course is thoroughly practical and up-to-date. Students are required to obtain actual experience in the subjects taught.

The subjects taught are as follows: **Household Chemistry, Household Bacteriology, Physiology, Sanitation, Home Nursing, Cookery, Serving, Household Economics, Household Sewing, Keeping of Accounts, Sanitary Laundry, Bible Study and Physical Culture.**

Students desiring to meet a part or the whole of their expenses can easily do so. The Sanitarium will give employment, at a reasonable rate, so that students working six or seven hours per day are able to meet the entire expense of the course, as well as board and room. The first term will begin Sept. 20, 1906. Tuition, $50.00.

Course for School of Health Teachers and Lecturers

This is a two-years' course, and is intended for those who wish to fit themselves for public work as lecturers, demonstrators, and teachers. This is a very thorough course, a number of the studies being taken at the American Medical Missionary College.

The School of Health and School of Cookery, which are always in session in connection with the Battle Creek Sanitarium, afford excellent opportunities for practical experience in public work under the direction of the teachers.

The subjects included in this course are as follows: **Chemistry (General, Organic, and Physiological) Physiology, Bacteriology and Hygiene, Sanitary Science, Medical Dietetics, Cookery, (General, Invalid, Institution), Serving, Household Economics, Voice Culture, Home Nursing, Advanced English, Bible Study and Physical Culture.**

Students will be able to meet the expense of board and room and perhaps a part of the tuition if desirous of doing so. The first term begins Sept. 20, 1906. Tuition, $50.00 per year.

Summer Course in Domestic Science

For the benefit of college students, teachers, and others who wish to spend their summer vacation profitably, the Battle Creek Sanitarium is offering a special course in Domestic Science. It includes just such things as every woman ought to know.

Below is an outline of the course, with the tuition for each subject when taken separately:

Cookery	$10 00	**Home Economics**	3 00
Sewing	3 00	**Physical Culture**	3 00
Sanitary Laundering	3 00		27 00
Home Nursing	5 00	**The entire course**	$15 00

The summer course extends over a period of ten weeks, beginning June 25, 1906, and ending Aug. 31, 1906. Students desiring to meet a part or all of their expenses can easily do so. The Sanitarium offers abundant opportunities to energetic young women for meeting such expenses. Those desiring further information should write to the

BATTLE CREEK SANITARIUM SCHOOL OF HEALTH AND HOUSEHOLD ECONOMICS

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To Nature's teaching.

—*Bryant.*

GOOD HEALTH

A Journal of Hygiene

VOL. XLI JULY, 1906 No. 7

THE Burlington (Vt.) *Free Press* for June 5, said:—

"The report on the Chicago slaughter-house conditions sent to Congress yesterday is so repulsive it should be marked 'for private reading only.'"

Said the New York *Tribune* in an editorial relating to the same subject:

Almost Persuaded

"The mere recounting [of the facts taken in the Neill-Reynolds' report] revolts every consumer of meat, and almost persuades thousands to become vegetarians."

Said the commissioners appointed by President Roosevelt:—

"An added grievance against the packers is that their horrible deeds are likely to drive not a few foolish and hasty people into the vegetarian quagmire."

What are these "horrible deeds?" Here are some of the charges made by Upton Sinclair, and borne out by the investigation by the committee appointed by the President for the purpose:—

I CHARGE and I have proved that this same poisoned, diseased, filthy meat still is made into food, and that Armour alone every year sends out 20,000,000 pounds of boiled-out meat pulp as "canned roast beef."

I CHARGE and I have proved that spoiled hams, with overpowering odor, are modified by the use of preservatives, poisons, and chemicals that take away the smell but leave the taint, and these hams are sold in every market of the world.

I CHARGE and have proved that dyes and color matter that give to sausage the "smoke" color of commerce and bring back the tainted meat to its original hue are a staple of commerce.

I CHARGE and I have proved that "bull meat powder," "zero preservative," and other compounds are ground up with sausage meat and tinned Hamburger steak.

I CHARGE and I have proved that decomposed meat is canned.

I CHARGE and I have proved that meat is dropped on floors where men expectorate and that it is not afterward cleansed.

I CHARGE and I have proved that men expectorate in the sausage that they are grinding.

I CHARGE and I have proved that men have fallen into the boiling lard vats and been rendered into lard.

I CHARGE and I have proved that human fingers and hands go into sausage machines as human flesh and come out as sausage.

I CHARGE and I have proved that diseased, condemned, crippled, and shriveled cattle and hogs are regularly slaughtered, prepared for the market, and sold as first-class meat by the packers.

I CHARGE and I have proved that commission men control the Standard Slaughtering Company, which kills so-called "quarantined cattle" that are bought at half price, although in perfect condition, the commission men selling the beef at market rates.

I CHARGE and I have proved that the condemned meat industry is a business that has grown up with the trust system of large-scale slaughtering and refrigerator-car distribution, so that now all the old, dried-up, diseased, and crippled cattle which formerly were buried in the farmer's back lot, are gathered up and shipped to the nearest trust factory, to be converted into some sort of food.

I CHARGE and I have proved that the Armour recipe for potted hams is to take the nubs of smoked beef, moldy and full of maggots, and grind it in great hoppers with rind trimmings.

I CHARGE and I have proved that the sanitary conditions in the packing-houses are so grossly inadequate as to be beyond words to express.

I CHARGE and I have proved that the habits of the employees who handle foodstuffs are filthy in the extreme.

Here are a few things observed by the commissioners:—

"*Sanitary Conveniences.*— Nothing shows more strikingly the general indifference to matters of cleanliness and sanitation than do the privies for both men and women. The prevailing type is made by cutting off a section of the workroom by a thin wooden partition rising to within a few feet of the ceiling. These privies usually ventilate into the workroom, though a few are found with a window opening into the outer air. Many are located in the inside corners of the workrooms, and thus have no outside opening whatever. They are furnished with a row of seats, generally without even side partitions. These rooms are sometimes used as cloak rooms by the employees. Lunch rooms constructed in the same manner, by boarding off a section of the workroom, often adjoin the privies, the odors of which add to the generally insanitary state of the atmosphere.

"Abominable as the above-named conditions are, the one that affects most directly and seriously the cleanliness of the food products is the frequent absence of any lavatory provisions in the privies. Washing sinks are either not furnished at all or are small and dirty. Neither are towels, soap, or toilet paper provided. Men and women return directly from these places to plunge their unwashed hands into the meat to be converted into such food products as sausages, dried beef, and other compounds. Some of the privies are situated a long distance from the workrooms, and men relieve themselves on the killing floors or in a corner of the workrooms. Hence, in some cases the fumes of the urine swell the sum of nauseating odors arising from the dirty, blood-soaked, rotting wooden floors, fruitful culture beds for the disease-germs of men and animals.

"An absence of cleanliness was also found everywhere in the handling of meat being prepared for the various meat-food products. After killing, carcasses are well washed, and up to the time they reach the cooling room are handled in a fairly sanitary and cleanly manner. The parts that leave the cooling room for treatment in bulk are also handled with regard to cleanliness, but the parts that are sent from the cooling room to those departments of the packing-houses in which various forms of meat products are prepared are handled with no regard whatever for cleanliness. In some of the largest establishments, sides that are sent to what is known as the boning room are thrown in a heap upon the floor. The workers climb over these heaps of meat, select the pieces they wish, and frequently throw them down upon the dirty floor beside their working bench. Even in cutting the meat upon the bench, the work is usually held pressed against their aprons, and these aprons were, as a rule, indescribably filthy. They were made in most cases of leather or of rough sacking and bore long-accumulated grease and dirt. In only a few places were suitable oil-cloth aprons worn. Moreover, men were seen to climb from the floor and stand, with shoes dirty with the refuse of the floors, on the tables upon which the meat was handled. They were seen at the lunch hour sitting on the tables on the spot on which the meat product was handled, and all this under the very eye of the superintendent of the room, showing that this was the common practise.

"Meat scraps were also found being shoveled into receptacles from dirty floors where they were left until again shoveled into barrels or into machines for chopping. These floors, it must be noted, were in most cases damp and soggy, in dark, ill-ventilated rooms; and the employees, in utter ignorance of cleanliness or danger to health, expectorated at will upon them. In a word, we saw meat shoveled from filthy wooden floors, piled on tables rarely washed, pushed from room to room in rotten box carts, in all of which processes it was in the way of gathering dirt, splinters, floor filth, and the expectoration of tuberculous and other diseased workers. Where comment was made to floor superintendents about these matters, it was always the reply that this meat would afterward be cooked, and that this sterilization would prevent any danger from its use. Even this, it may be pointed out in passing, is not wholly true. A very considerable proportion of the meat so handled is sent out as smoked products and in the form of sausages, which are prepared to be eaten without being cooked."

The editor of the *Times* must certainly be laboring under a peculiar type of mental strabismus to be able to read the terrible indictment of Sinclair and the commissioners and yet look upon the man who refuses to regale himself with such rottenness as comes out of the filthy pens of the packing-house as floundering in a quagmire!

Is it surprising that thousands are almost persuaded? THE ONLY WONDER IS THAT ANY ONE SHOULD BE LEFT UNPERSUADED.

That many thousands have actually abandoned the use of flesh meats as the

result of the packing-house exposures is evident from the complaints of the packers that enormous damage has been done their business.

$150,000,000 a year is the estimated shrinkage of the butchers' business. This means that the public will spend one hundred and fifty millions less for meat during the next twelve months than during the last.

This amounts to just two dollars a day for each person, which would pay for just half an ounce of meat a day, at sixteen cents a pound.

Probably this amount represents simply a part of the surplus proteid food consumed by the country, all of which might be dispensed with not only without loss, but with great profit, for Chittenden has shown most conclusively that the ordinary ration contains two or three times as much proteid as is needed, and that the excess is a prolific cause of disease. But granting the necessity for all this proteid, it may be obtained in other, better, and much cheaper forms. For example, the pea or the bean furnishes, pound for pound, more proteid than does beefsteak, while two pounds of wheat and two and a half of corn contain as much proteid as the best steak.

Note the great advantage, in cost, of proteid from vegetable sources:—

1 pound of beefsteak costs 10 to 30 cents

1 pound of peas costs 2 cents

2½ pounds of corn cost 2½ cents

This means that the proteid foodstuffs furnished by $150,000,000 worth of beef may be supplied in most palatable and digestive form by beans, peas, or corn at one-tenth the cost, making A NET SAVING OF $135,000,000, which may be invested in a hundred useful ways.

But of far greater importance than the money saving is the saving in health by the elimination from the dietary of the horrible disease germs and filthy products of disease with which all flesh foods are liable to be contaminated. No one who habitually eats meat is safe for a single day. Every morsel of flesh is liable to be the vehicle of disease, disgusting parasites, even fatal sickness. Let the exposure go on. The intelligent public will see the lesson to be learned, and thousands will be persuaded to adopt a natural and wholesome bill of fare, which is always safe.

J. H. Kellogg

The Gladness of Nature

Is this a time to be cloudy and sad,
When our mother Nature laughs around;
When even the deep blue heavens look glad,
And gladness breathes from the blossoming ground?

There are notes of joy from the hang-bird and wren,
And the gossip of swallows through all the sky;
The ground-squirrel gayly chirps by his den,
And the wilding bee hums merrily by.

The clouds are at play in the azure space,
And their shadows at play on the bright green vale,
And here they stretch to the frolic chase,
And there they roll on the easy gale.

There's a dance of leaves in that aspen bower,
There's a titter of winds in that beechen tree,
There's a smile on the fruit and a smile on the flower,
And a laugh from the brook that runs to the sea.

And look at the broad-faced sun, how he smiles
On the dewy earth that smiles in his ray,
On the leaping waters and gay young isles;
Ay, look, and he'll smile thy gloom away.

— *Bryant.*

A time to be glad

What the White Race May Learn from the Indian

BY GEORGE WHARTON JAMES

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Solemn faces of Snake priests in the Snake Dance

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ANOTHER thing that the civilized of this age may well learn from the Indian is intense earnestness and sincerity in all matters of religion. It is a painful thing for me to go into many of our city churches. Well-dressed women and girls and young men will sit and whisper through even the most sacred parts of the service. Indeed, it is the exception, not the rule, that I ever go to a service without being outraged by some such exhibition of rudeness, ill manners, and irreverence. This kind of thing is unknown with the Indian. Religion is a serious thing. Fun is fun, and when he goes in for fun he does it with thoroughness and completeness; but when his religious instincts are called upon, he puts aside all fun, and enters into the spirit of the occasion with becoming reverence and solemnity. It is civilized people who go into churches of other faiths than their own and gape and gawp around, whispering the while to one another at the strange things they see. Protestants are particularly guilty of this serious vice. Roman Catholics are so trained to attend to their own devotions, and *to be devout* in the house of God, that they pay no attention to one another, but Protestants will go to a Catholic church, or one of some other denomination than their own, and behave in a manner that I would never insult the Indians by calling "savage" or "uncivilized." An Indian will not even set foot on the top of one of the underground kivas where religious

ceremonies of one clan are going on to which he does not belong. I do not ignore the fact that this reserve comes from superstitious fear lest some harm befall him, and this fear, perhaps, is not good. But whether from fear or not, the reverence for the sacred place and the ceremonies going on is refreshing and gratifying. Especially so is it to me after seeing, week after week, a crowd of so-called civilized young men (and old) lounging around a church door, sometimes smoking, making comments upon the people entering the church. I have as little toleration for the acts of these young men who thus selfishly rob people of their comfort and destroy their religious feeling as I would have for any one who would laugh at sorrow, or make a mock of the grief of the bereaved. And my feeling extends also to the officials of the church who will permit such outrageous conduct. Churches are for the education of all the people in religious and higher things. How can youth be educated in higher things when the very precincts of the church are allowed to be used by them for acts of discourtesy, rudeness, and selfish disregard for the thoughts and rights of others? With the Indians these things never occur. In looking at ceremonies in which they have no part, their manner betokens

The earnest faces of the Hopi women, ready to sprinkle meal upon the Snake Dancers

the profoundest respect and reverence. If not for the worship itself, it is yet shown to the feelings of those who do worship. I have photographs in my collection of Indian youths standing at the door of a Christian church while the priest within intoned the mass, or performed some part of the appointed ritual. The rapt expression of intent earnestness and seriousness is so far removed from the flippant, indifferent, careless expression and attitude of many young men of my own race that I long for the latter to know somewhat of the feeling and reverence of the former.

Then in the religious ceremonies in which they take part, their demeanor is remarkable in its intent seriousness and earnestness. I have seen Indians at

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Isleta Indians at a funeral

their shrines, when they thought they were entirely alone, pray with an agony of seriousness and fervor that I have never seen equalled or at least surpassed. The priests of the Snake Dance and the Lelentu (prayers for rain and that water will flow freely into the springs) are as earnest and

The flute ceremony of the Hopis

sincere and devout as the most consecrated Christian minister or priest I ever saw. And the dancers of the Acomas, Lagunas, Hopis, Navahoes, Zunis, etc., enter into these, their religious ceremonies, with an earnestness and reverence that put to shame the flippant, bustling, looking-around, whispering congregations of many of our so-called Christian churches.

Nor is this all. The Indian's everyday attitude is one of reverence for the Powers Above. He does everything with these before his mind. The first thing he does on awakening is to propitiate all the powers of the five or seven cardinal points. When the sun rises he makes his offering to the powers behind it, that control and direct it, that it may be a blessing throughout the day. Indeed, every act of his life may be said to have a religious thought attached to it, so powerfully is the religious instinct developed within him. If you offer him a cigarette he will propitiate the Powers Above and Around and Below before he gives himself up to the full enjoyment of it. He does this, however, with such apparent unconcern that the stranger would never dream of it, even though he were looking straight at him. But the knowing will understand. When he sees the Indian quietly blow a puff of smoke to the East, he knows that is for the purpose of reminding the good and evil powers that reside there that the smoker wishes their good influences to rest upon him, or, at least, that the evil influences shall pass him by. And the same thing when the smoker puffs to the North, the West, the South, and the *Here*. For the Navaho Indian believes that there are powers that need propitiating just here, while the Hopis add the powers of the Above and the Below, thus making seven cardinal points.

The secret prayers and rites of the underground kivas, or the medicine *hogans* of Hopi and Navaho are marvels of sincerity, earnestness, and reverence. One is impressed whether he understands them or not, and the white man comes away, or at least I do, with this feeling; viz., that I would to God the white race, so long as they worship at all, would do so with such outward decorum, reverence, and earnestness that would imply their real inward belief that the thing is more than a meaningless, perfunctory ceremony that they must go through.

Another remarkable thing I would that the white race would learn from the Indian is his habit of teaching the victim of a misfortune of birth that his misfortune is a mark of divine favor. Perhaps I scarcely mean quite what I say. Let me explain fully. A hunchback or a dwarf among the Indians is not made the butt of rude wit, ghastly

jokes, or of cruel treatment, as is generally the case with such a one of our own race, but is treated with special consideration and kindness. I knew a Mohave boy who was hump-backed when born. The shaman or medicine man explained how the deformity came. He was a special child, a gift from the gods above. He came from the Above to the Here on the exquisite pathway of a rainbow. But, unfortunately, the rainbow rested over a very sharp, rugged mountain peak, which the gods did not see, and, as the child slid down to the earth, his poor, little, naked back caught on the sharp peak and was thus deformed. With such a story of his origin his parents were made happy, and as he grew older, he was treated with kindness and consideration by his boy companions. Now, while I would not gain this end by the superstitious story of the Mohave medicine man, I would that we could in some way teach our boys to look with compassion upon the misfortune of such as happen to be afflicted at birth, or to be light-witted, or in some way not the equal of the majority.

If an Indian be afflicted with hysteria, or fits of any kind, or insanity, he is better treated as the result of his affliction rather than worse. Too often the white race makes these afflictions the cause of brutal and indifferent treatment, and adds sorrow to the already overburdened and distressed souls of the suffering.

Another interesting fact about the Indian is that when he gives a name to a child or an adult, it generally means something. Among ourselves names are oftentimes either quite meaningless or senseless. For instance, my parents gave to me the name George. When I was old enough to begin to care about such things, I asked and found out that "George" means "a husbandman."

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Priest at Hopi shrine

And all through my life I have borne that name,— a husbandman — when my ignorance of agricultural pursuits, I am sorry to say, is simply dense and unspeakable. What is the sense of giving such names to children? And when we come to the Algernons, and Reginas and Sigourneys and Fitzmaurices and all the high-sounding but altogether meaningless names with which we burden our children, I long for the simplicity of the Indian's habit, the poetry, the prayer, that so often are connected with the names they give. The old Hebrews knew something of this, for we read of many of their names having a definite and decided significance.

One day I found a Chemehuevi Indian with the name Tow-um-bow-i-si-co-rum. After a little working of it out, I found the name signified: "The reddish golden pathway of glory made by the setting sun from the zenith to the horizon." I asked the man's mother how he came to have such a name, and here is her reply! "As I gave birth to my son, I looked up in the heavens and there I saw the golden reddish glory reaching from above where I lay to the faraway west, where the sun was just

setting. So I said, It is an omen, and may it also be a prophecy, and my heart went out in prayer to Those Above that the pathway of life of my newly-born son might be one of golden glory until he, too, passed out of sight in the west; so I called him Towumbowisicorum, which signifies what I have said."

(To be continued.)

George Wharton James having a pow-wow with Yuma Indians

War and Hygiene

BY LOUISE C. PURINGTON, M. D.

WE are not yet through with some of the vivid illustrations drawn from the contest between Russia and Japan. Something took hold of Japan to make her almost invincible, and, thank God! it was not her weapons or brutal warfare. War is a tragedy at best, but if "a beautiful altruism" is developed, as in this instance, it is of itself a prophecy of peace.

We pass over the new civilization — missionary, educational, civic. The Japanese are a hygienic people; strong, keen, and of great endurance. The foundations are laid in a wholesome diet. Japan knows how and what to eat for nourishment, and omits that which corrupts vitality and increases susceptibility to disease. The staples are rice, fish, eggs, vegetables, fruit, weak tea, and quantities of water; the army rations, rice and dried fish, the former cooked and eaten dry if there is no boiling water to dilute it.

Edison said that "the nations that eat rice never think or act anything but rice, rice, rice." In this case rice and power seem synonymous, but not in rice is all the secret.

The Japanese *breathes deeply* —

> "At half-past six I rise and dress,
> Although I hate it I confess;
> But duty calls, so on I press,
> And start by breathing deeply."

The Japanese are hard drinkers — of water, averaging a gallon a day, flushing and purifying the system. They live frugally, and without meat or alcoholics to speak of. A crowning virtue is "cleanliness next to godliness," which they practise in a manner undreamed of by Europe or America.

"The Japanese soldier," says M. Pichon, "has muscles like a whipcord, is a sure shot, can do with three hours' sleep out of twenty-four, is cleanly, patriotic, and runs up the hills like a goat;

he costs the state about five cents a day, and thinks himself well off." Major Seaman, U. S. Surgeon, reports on the splendid preparatory work of the Japanese medical department. "Prevention is better than cure" is an exact hygienic fact, carefully thought out. Major Seaman testifies that the Japanese loss from preventive disease during the first six months of the late war was but a fraction of one per cent, and of one thousand arriving in Tokio, not one had died from bullet wounds.

In the Spanish-American War the mortality from preventable diseases was seventy per cent; of the wounded in South Africa one in four were claimed by disease; of Japanese soldiers wounded, ninety per cent survived, and recovery was rapid.

In a campaign the Japanese medical officer goes before the army, examines the sanitary conditions on the march, samples foods, and between times lectures the troops on sanitation and hygiene. The Tokio surgeons complained of little to do when the patients arrived from the front, the dressing and care of wounds had been so perfect, and constitutions well-fortified had done the rest.

A most marked feature of Japan's altruism was manifest in the treatment of Russian prisoners, the same being cared for as guests. Good food, good beds, and every appliance, medical and hygienic, were furnished—even the war news kept secret to prevent discouraging thoughts! The Japanese soldiers fared very little, if any, better as to doctors, nurses, flowers, and every comfort.

A discussion of how it fared with Russian soldiers as to wounds, susceptibility to disease, etc., is another side of the picture. To the Japanese side should be added the great army of the Red Cross, nearly 1,000,000 strong, with its numerous hospitals, ships, physicians, trained nurses (3,000 women and 700 men) and $1,000,000 income.

The Japanese are humane as well as victorious, using, at the instance of a leading surgeon, a bullet of small caliber, and a variety of powder which mitigated the hurt, and from the use of which wounds were more liable to heal. Of six hundred Russians wounded, treated by himself, but four cases proved fatal.

This phase of the Gospel — "saving health" — has permeated Japan. China and Russia in turn have retired before what Russia called "a nation of pygmies."

America has at last a "Pure Food Bill." Our Government experiment stations have much to learn from Japan in the kind of food that best serves the army. There are also lessons for the people in simple living, which conduces most to strength and achievement; and the deepest lesson of all is that the self-controlled person is the masterful one. Victory is in the wake of hygienic, temperate forces, whether the conflicts be those of war or peace.

THE little bread I have
I share, and gladly pray
To-morrow may give more
To give away.
—*Josephine Preston Peabody.*

Unseen Peril

BY H. B. KNAPP, M. D.
Superintendent Pennsylvania Sanitarium, Philadelphia

HOW do you know there has not been a consumptive living in the house into which you are moving?

The present status of sanitary laws has not been developed to the point where a certificate of health must be obtained from the landlord showing that the house has been thoroughly renovated. Even though the afflicted one may have been in a mild stage of the disease, nevertheless he may have left behind him the germs that will result in bringing down one of your dear ones with a disease which every year carries off so many thousands.

Tuberculosis is not inherited, although many families are wiped out by its contagiousness. This is due to the co-habitation of diseased people with the rest of the family, and to the inability, under present conditions, to enforce isolation. Hundreds of cases of tuberculosis and other infectious and contagious diseases could be avoided every year by the application of proper preventive measures. We are willing to make most any sacrifice for health when once it is lost, and yet, looking at it from any standpoint, how much better it would be to take the precaution of preventing disease, which in most instances is so difficult to eradicate. The prophylactic measure so essential to the prevention of infectious diseases is nothing more than cleanliness, and yet the usual methods to secure thorough cleansing of house and rooms are not sufficient to overcome the unseen foe of man which may be lurking in the many cracks and crevices, and be undestroyed by the usual means of scrubbing and cleaning. The germs of disease must be considered to be present everywhere until we are certain that they have been killed. The surgically clean conscience is the one that believes everything dirty, and that only sterilization will cleanse it. On entering a house to be occupied day and night by at least some members of the family, the precaution of knowing absolutely that there are no lurking germs of tuberculosis present, is worth all the trouble it is to fumigate and purify from cellar to garret.

In some cities, and in some States, the health commissioners have formulated instructions by which every house previously occupied is to be renovated before another family moves in. Of course the floors are scrubbed, the cellars are cleared of the rubbish left by the former tenants, back yards are cleaned, and we take it for granted that all of these details will be carried out. But when this is done, there is yet an unseen enemy of humanity which must be killed, and this can be accomplished only by thorough fumigation. Before occupying a house from which another family has moved, all the rooms should be fumigated with formaldehyde gas, which is an economical method of sterilization. Six and one-half ounces, by weight, of potassium permanganate crystals are required for each pound of the forty per cent solution of formaldehyde in disinfecting every thousand cubic feet of room space. Place the crystals in a tin, agate, or iron kettle, the capacity of which is over eight times the volume of the disinfectant used. This is necessary to prevent an overflow of the solution from effervescence. Place the kettle containing the crystals in the center of the room in a dishpan with a non-conductor, such as two bricks placed under the kettle, for considerable heat is generated upon mix-

ing the chemicals. Quickly pour the formaldehyde solution over the crystals and make a hasty retreat. Always put the crystals in the kettle first, and pour the formaldehyde solution from a wide-mouthed vessel so that it may be done quickly. Before beginning the fumigation, however, the house or room must be tightly closed by pasting the cracks around the windows with newspaper, and stopping all crevices and keyholes, to insure that the formaldehyde gas generated will be retained in sufficient strength to disinfect thoroughly.

After leaving the room, the door from which the exit was made should be pasted up from the outside so that the last crack is stopped. The room should remain closed for from twelve to twenty-four hours, after which it should be aired thoroughly. In order to fumigate a whole house, the number of cubic feet of space of the house should be figured out, and the quantity of crystals and formaldehyde obtained. After stopping all the outside doors and windows, and opening all the inside doors so that the fumes may penetrate into all the rooms and closets of the house, the amount of crystals and formaldehyde may be placed in the hall or other suitable place so that the house as a whole may be fumigated instead of doing room by room, which sometimes may be considered quite an undertaking. Formaldehyde gas has the advantage over sulphur or any of the usual fumigating substances in that it does not tarnish brass or nickel, or injure any of the furnishings in the house, and may, when directions accompanying it are properly observed, be used without fear in houses completely furnished.

Hints on Summer Outings for Common People

THE census statistics prove that while the United States of America is an exceedingly wealthy and prosperous nation, yet the great majority of the 80,000,000 of people who live in our favored land have very moderate yearly incomes, bank accounts, bonds, real estate, buildings, or other evidences of earthly possessions. About one-third of American families, or more than twenty-six million of the population, live on a yearly income of three or four hundred dollars or less a year per family, and more than ten millions more have an income ranging between four hundred and one thousand dollars each year. And as each family may number from two to ten or twelve members who must have food, raiment, housing, education, and care and medical attention when illness or accident cripples some member of the home, it can be seen at once that after the necessaries of life are provided for (even with the most rigid economy), but little can be spent for recreation, as in taking expensive journeys to the seashore, mountains, or other fashionable and famous summer resorts.

Who Need Vacations?

Yet it is just these physically tired, brain-fagged millions of weary, work-worn men and women, and delicate, often prematurely old, children, from the babe in arms to the nervous, excitable high-school girl and boy, who need the tonic bracing up and physical restfulness of an out-of-door, care-free life. First of all these teeming millions of toilers who suffer from indoor life both summer and

winter are the farmers' wives and children, startling as this announcement may seem to most people with their dreams of pure country air, of the simple life on the farm, amid grassy, flowery meadows, of reclining in restful hammocks under green shady trees, soothed to peaceful slumber by the sound of purling brooks, song of bird, and hum of bee. The city visitor who seeks a few weeks of out-of-doors in the country may have time to enjoy all these beauties of nature and be rested and recuperated by a care-free, brief country sojourn; but how much of this out-of-door life can the farmer's wife indulge in who rises at four o'clock in the morning, and spends her days in a kitchen over a hot cook-stove, getting three meals a day for the family and hired men, and often caring for and nursing an infant, doing washing, ironing, baking, making and mending for her family because the needful dollars and cents will not permit any outlay for indoor help? After the supper dishes are washed, at from eight to ten o'clock, the weary house mother is glad to rest her aching body on her couch, often too tired to sleep. Or perhaps her repose is disturbed by an ailing, teething baby, or by the closeness and heat of an eight-by-ten bedroom.

The Country for Country People

There is plenty of outdoors in the country. There is need of some plan whereby country people, especially the women and children, can get practical benefit from this same healthful rural life at a small outlay of money, and yet be able to carry on the every-day home work. First of all is the arranging of the farmhouse with plenty of shady porch room so that most of the housework can be done in the open air in summer, and the planning of the meals so as to get along with as small an amount of heat as possible in preparing the food. We may all sincerely hope that the experiments of the government in perfecting apparatus for fireless cooking may prove successful, and that the coming housekeeper may be able to start her day's cooking with the one fire in the cool of the morning, then set the food away in the cooker and let it keep on getting ready for dinner without any fear of its burning or any need of fire replenishing, while she gathers her children about her on the screen-protected piazza, or some screened-in shady nook in the back yard, and enjoys the few hours of daily summer outing, resting in a hammock, or reading to the children, and even playing with them; or if it must needs be that she work, doing her sewing in the open air, thus taking time to rest mind and body and enjoy the beauties of nature, cultivating a love for the beautiful as seen in the ever-changing panorama of blue sky, fleeting clouds, the play of sunshine and shade on meadow, forest and field, vale and hill, perchance running stream or inland lake. No one can be cheated out of an artistic feast of the beautiful who knows how to appreciate all the beauties of color, grace of motion, and harmony of sound which come from being in tune with all out-of-door nature. The poorest can see sunsets no artist's coloring, however rich, can duplicate. Dead canvas can never give expression to the undulations of waving fields of grass and grain. The artist can not put into the landscape the sparkle of the dew, or the bird song or insect hum. It is life, after all, that gives real beauty of expression. All the best artist can do is to paint a still copy of the living, ever-changing landscape. The poorest of the land in the country can view every day more beautiful pictures than are seen in the Vatican or any other art gallery, either ancient or modern. The sadness of it all is the fact that farmers'

wives and daughters, living among all this artistic wealth, should form such a large percentage of the mentally deranged patients, inmates of insane hospitals, because of the monotony of their indoor life.

If simple food were used in summer, much time would be saved. Some breakfast food, easily prepared, fresh eggs, cream, fruit, and bread and butter for breakfast, and a dinner without too great variety of foods, and supper of the same simplicity as the breakfast, would leave time for taking an outing on the instalment plan, even if no farther from home than a shady back yard. The cool porches screened to keep out the insects, could be used for out-of-door bedrooms, and thus out-of-door life both day and night be secured for the trifling expense of a few yards of wire screen, which, if properly put up, will last for years. In place of going to some far-off seashore or inland lakeside to suffer all the discomfort, crowding, and excitement of hotel life, subject to depression from feeling that needed money is being wasted on superfluous pleasures, a nearby small lake or stream, perchance only across the pasture lot, may be fitted by a little work of the men folks, deepening a portion of the creek bed, if too narrow and shallow for a swimming pool, and if there is danger from abrupt descent into deep water, fencing off a portion of the lake or river of a safe depth with a few stakes and strands of rope. Even on the dry prairie, miles away from lake or stream, there is the well and the windmill; a suitable swimming tank similar to those used for stock could be put in at a small expense and the water allowed to run from it through an overflow pipe into the stock tank, or used to irrigate the garden. Every parent knows how children, especially boys, long to get into water in the summer, and how even a foul, stagnant pool tempts the shivering youngsters to plunge into the muddy, cold, foul-smelling water as soon as the ice melts off the surface in the springtime. Given a proper bathing place, the average school boy or girl will never refuse to take a daily plunge bath all summer long. And think what it means to the family to be able to utilize the healthful, invigorating effect of cleanliness from daily bathing; the habit of each member's going to bed with a clean skin at night, instead of covered with a varnish of perspiration and day-ac-

Fourth of July breakfast table

quired dirt. As cleanliness is next to godliness, who can measure the moral, mental, and physical benefits which might come from every farm home having its own warm-weather and out-of-door bathing establishment, and simple recreation resort. To make the living out-of-doors practical, especially sleeping out-of-doors, there is need of close screening of piazzas or other out-of-door bedrooms. But this is not expensive and all the cost need be only that of the screening. The work can be done by the men folk, or any one who can drive a nail straight and set up a simple form of poles or scantling. This protection is needful to keep out flies, mosquitoes, and other noxious insects, whose bites are often infectious and dangerous because of the diseases they inoculate into the body.

Summer Outings in Small Instalments

The family birthdays or marriage anniversaries, when they come in the warm weather, may be celebrated by a picnic to some nearby wood, lake, or river bank, where with hammocks and books a pleasant, restful day may be passed. A true recreation! How much more real physical rest and mental repose will come from this taking the summer outing in daily instalments than in planning for a hurried trip of two or three weeks to some fashionable resort. The writer has often been called to treat the mother of a family after her return from such a miscalled recreation excursion. The extra sewing and preparation before starting, the excitement of the journey, and the noise and excitement and broken rest and other discomforts of crowded hotels were more strain than the already overworked body and nerves could endure, and the result was a nervous collapse, requiring weeks of rest cure and other sedative and tonic medical and hygienic treatment to restore the patient to even partial normal health again. An ounce of prevention is worth hundreds of pounds of cure; and normal recreation and play is needed to preserve the family health of both old and young.— *Kate Lindsay, M. D., in The Housekeeper for June.*

The Modern Management of Tuberculosis or Consumption

Its Cause, Prevention, and Cure

BY JOHN EDWARD WHITE, M. D.
Medical Director Nordrach Ranch, Colorado Springs, Colo.

IT is impossible to educate the public too thoroughly upon the subject of tuberculosis; its cause, prevention, management, and cure. It is by far the most prevalent and at the same time the most fatal disease existing at the present time. No class of society, no climate or country, is exempt from its deadly visitation. This condition of affairs is largely due to the ignorance of the public. Statistics in the past few years show conclusively that there has been a marked decrease in the numbers infected, owing to the knowledge that has been disseminated since Koch's discovery of the bacillus, or the cause of the disease. If a little knowledge has caused a distinct decrease in the numbers, we can hope to effectually stamp out this great white plague by a thorough education of the masses. Our laws will be ineffectual until we have an intelligent public.

Dr. S. A. Knopf, of New York, pointed out in his address to the Tuberculosis Convention, at Baltimore, that three things are necessary to effectually eradicate tuberculosis: well-trained physicians, a wise government, and an intelligent people. Our law-makers and the medical profession are powerless without the hearty and intelligent support and co-operation of the public. Admitting the necessity of public education, it then becomes the duty of the public press to help physicians and law-makers in scattering this knowledge broadcast. Interesting articles by physicians and laymen inserted in our foremost magazines will do much to interest and educate the public.

From the time of Hippocrates, who lived 400 B. C., and was the father of medicine, consumption has been known to exist. All physicians since his time have studied and fought the disease with little success. The early physicians of Greece, Italy, Spain, and Arabia recognized the disease, and many regarded it as contagious. In Italy they went so far at one time as to separate the patient from the rest of the community in a sort of pest-house, and imposed a fine with imprisonment for not reporting cases as they occurred. Yet for two thousand years the cause of consumption remained undiscovered.

March 34, 1882, Prof. Dr. Robert Koch, of the University of Berlin, proclaimed that he had discovered the germ or cause of consumption, and after twenty years this germ or bacillus is universally acknowledged to be the true and only cause of consumption. This germ is so small that nine thousand placed end to end would measure only one inch. If these germs were spread on a flat surface so as to touch one another, it would take six hundred millions to cover a space one inch square. It is estimated that five billions of them are expelled by the average consumptive in twenty-four hours.

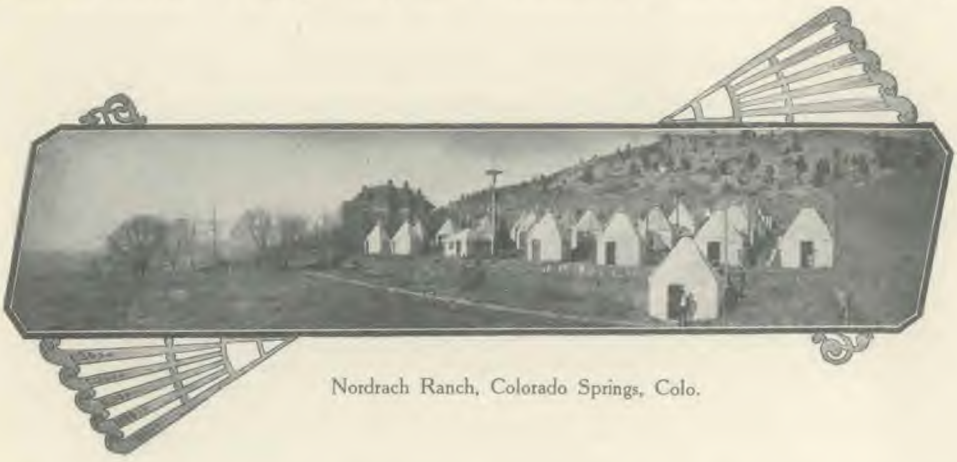
This germ may live for years outside the body in all climates, under all conditions of heat and cold, except in direct sunlight. This accounts for the fact that one-sixth of the entire human race is afflicted with some form of consumption. So destructive is this germ that one-seventh of all the deaths in the world

are caused by it alone. No one is proof against consumption, and no one can consider himself uninterested in the subject.

These germs are the only cause of consumption, and must enter the system from the outside. They generally enter the body by inhalation. A naturally strong and healthy constitution repels the disease, but weak and impaired constitutions become easy victims. Anything which depresses or lowers the vitality of the system renders one subject to the disease. Not merely other diseases, but overwork, worry, lack of proper food and exercise, and unfavorable surroundings in the home or places of work,— all these and many others may result in placing one in a condition to become a consumptive. In other words, they help to prepare the soil. Overwork, worry, lack of sunshine and fresh air in sleeping and work room, no doubt play the most important part in the preparation of this soil.

In years past it was supposed that consumption was handed down from the parent to the child, or, in other words, hereditary, but we have learned that the disease can not be so handed down. The child only inherits from the consumptive parent a weakened constitution, which makes him a more easy victim to the disease.

Pulmonary tuberculosis, or consumption of the lung, is the most common form, but any part of the body is liable to become infected by the same germ. Scrofula is a form of consumption; lupus is a tuberculosis of the skin. The throat, ear, bowels, bones—in fact, any part of the body may become tubercular.



Nordrach Ranch, Colorado Springs, Colo.

Owing to the general lack of knowledge in the care of a consumptive, the health of his entire family is endangered by the millions of germs which he scatters about. The germs are usually found only in the phlegm, or sputa, raised in the act of coughing, and not in the breath. So long as this substance is properly cared for, it is not dangerous. The only way to care for the phlegm, or sputa, is to burn it. The consumptive must not, under any circumstances, swallow phlegm, as it is a sure way of causing tuberculosis of the bowels. Every particle of phlegm must be coughed out into a proper receptacle. It is the only way to remove the poisonous matter from the lung. The phlegm must not be coughed out into a handkerchief or anything that can not be burned at once. The use of cuspidors or slop-jars is positively dangerous; the use of rags and

bits of paper is also dangerous, as it is impossible to prevent the fingers, clothing, and other surroundings from touching them and becoming covered with millions of the germs. The only safe way to care for the phlegm is to have constantly at hand a specially designed hand cuspidor, provided with a lid to prevent flies from carrying contagion, and lined with carbolized paper, which may be removed and burned as often as necessary. Such a cuspidor is manufactured by the Seabury & Johnson Company, of New York City. Every particle of sputum, or phlegm, which is not burned, remains on the linen, clothing, floor, or ground until it dries. When dried, it takes the form of ordinary dust, and every passing breeze carries with it millions of these dried, death-dealing germs.

It should be remembered that every consumptive expels or coughs out five billions of these germs in twenty-four hours, or about sixty for every man, woman, and child in the United States; that every one of them may live two or three years outside the body, and that every live germ is a positive danger to some one. Knowing this fact, every consumptive who does not care for his sputa becomes a probable murderer of his fellow-men. Not only does he endanger the lives of those around him, but he may become infected a second time from the germs which he himself scattered about in the beginning. It is impossible for a consumptive to get well with new germs constantly entering his body.

The napkins and handkerchiefs used by a consumptive should be made of paper, and immediately burned. Knives, forks, spoons, and dishes should be thoroughly boiled after each meal, thus protecting the patient as well as the members of the family.

Consumption, phthisis, or pulmonary tuberculosis, is a disease caused by an implantation of tubercle bacilli in one or both lungs, having gained their entrance into the body by inhalation, or breathing in. If these microscopic objects enter the lung of an individual whose vitality has been impaired, either by inheritance or acquired in the every-day walks of life, then they find their favorite field and start into activity. The first step in this activity is the formation of a small tubercle about the size of a millet seed. A tubercle is the result of an inflammation caused by the bacilli or seed coming in contact with the right soil. Tubercle bacilli multiply many fold, go to seed in other words, and when ripe rupture, a small drop of pus being expelled; but from the point where this tubercle is located in the lung to the mouth where the discharge is expelled, this small drop of pus containing its seed or bacilli has to pass over uninfected mucous membrane, and bacilli may lodge at different points along the way, causing again other tubercles, which, in their turn, go to seed, rupture, scatter their seed, and so on.

In an advanced case of consumption, tubercles are in all stages of development, and by the coming together or coalescing of these small tubercles, large lung areas are involved, which by the individual rupturing of the many little tubercles gradually excavate or scoop out a hole of varying size called a cavity. In the beginning of every case the bacilli prepare the soil for a second series of germs, which of themselves could not find lodgment. We call this secondary condition a mixed infection, and it is due to the inhalation of small, chain-like germs called streptococci, or to others having the appearance under the microscope of small dots bunched together, and called staphylococci.

So long as we have only bacilli to deal with, the individual has a fair chance of recovery; but with the entrance of strep-

tococci and staphylococci, the question of a cure becomes a serious one; in fact, but few cases, if any, recover. Consumption, or tuberculosis of the lungs, manifests itself at first by a slight cough, which may be hardly noticeable, and the continuation of an apparent cold, la grippe, or pneumonia. A cough lasting over two weeks should be thoroughly investigated, and a microscopical examination of sputa should be made. The microscope may detect bacilli long before the most expert physician could detect a tubercular disease in the lungs by a physical examination. There is a beginning to this insidious disease, and the earlier bacilli are discovered, the more chances one has of recovery. After a cough comes loss of flesh and a tired, worn-out feeling caused by daily temperature or fever with high pulse-rate. This fever comes on each day about noon, reaching its highest point anywhere between three and ten o'clock, and disappearing in the latter part of the night. If fever has been high, and drops suddenly in the night, it may be followed by a night sweat. The daily fever may also be ushered in by a chill about noon.

There is no longer an excuse for allowing this disease to drift to a point where nothing can be done. We have a positive and simple way of detecting its presence. A cough with loss of flesh, accompanied with fever and high pulse rate, should always be looked upon with suspicion. After one is infected, it then becomes the all-important question, Can consumption be cured? A few years ago we looked upon this disease as incurable, but to-day we know that if the disease is discovered in reasonable time and a patient is willing to submit to the proper life, a cure can be safely promised, with fair chances of its accomplishment. A cure, though, will depend almost entirely upon the patient himself. We might say that a cure will depend upon an early recognition of the disease, an early and complete submission of the patient to the proper treatment, a continuous and persistent struggle until the enemy is conquered, common sense in all things, and a fairly well-filled pocket-book in the absence of friends or family to lend financial aid. Each one of these conditions is as important as the other, and all must be combined in producing a cure. Taking it for granted, then, that one is able to and will take advantage of these several conditions, of what does the right treatment of life consists? It does not consist of any specific medication, as up to the present time we have no medicine that acts as a specific. The treatment consists of living a life of perfect rest, free from care or work of every kind, in the open air almost constantly, a complete relaxation, and giving up of one's occupation and plans for the future.

Tuberculosis is a direct result of overwork, either mental or physical, and rest is largely its cure. This life in the open air is best carried out in a sitting or semi-reclining posture. Every hour of the day in all seasons of the year and in all kinds of weather should thus be spent, together with sleeping in a tent, protected veranda, or in a house with windows wide open. It will be found that the colder the weather, the more marked and permanent the results. One does not need to be uncomfortable; one can be well wrapped with heavy blankets. It is the inhalation of cold air that is so effectual in stimulating appetite, as a general tonic and fever reducer. A consumptive should have for his motto: "Every hour in the closed house is an hour lost." There is no excuse for losing time.

Next in importance to rest in the open air stands the question of nourishment, its kind and quantity. Nearly all con-

sumptives think they can not eat on account of indigestion, but it is a fact that their stomachs can be made to care for far more food than they think possible. Consumption is a wasting disease; there is a loss of fatty tissues, and if one wishes to combat this waste and really gain headway in the struggle, he must consume large quantities (even larger than in health) of fat-producing food.

(Continued on page 423)

Are You Tenting? — If so, you should know: —

That a well-closed tent is nearly air-tight, and consequently,—

That in an ordinary-sized tent, one occupant will so pollute the air as to render it unfit to breathe in less than twenty minutes; two occupants, in less than ten minutes.

That if you are tenting for your health, an opening at each end of the tent must be provided for ventilation at night. The openings should be at least a foot square for each occupant.

Breathing impure air lowers the vitality, and consequently renders one susceptible to colds and other diseased conditions.

The Beauty of the Morning

Oh, the beauty of the morning! It showers its splendors down
From the crimson robes of sunrise, the azure mountain's crown;
It smiles amid the waving fields, it dapples in the streams,
It breathes its sparkling music through the rapture of our dreams.

It floats upon the limpid air in rainbow-clouds of mist,
It ripples through the glowing skies in pearl and amethyst,
It gleams in every burnished pool, it riots through the grass,
It splashes waves of glory on the shadows as they pass.

It steals among the nodding trees and to the forest croons,
In airy note and gentle voice, 'neath waning plenilunes;
It calls, and lo! the wooded brakes, the hills and tangled fens —
A world of life and mystery — swarm with its denizens.

It trembles in the perfumed breeze, and where its ardor runs,
A thousand light-winged choristers pant forth their orisons;
A thousand echoes clap their hands, and from their dewy beds,
A million scarlet-throated flowers peer forth with startled heads.

Oh, the beauty of the morning! It rains upon our ears:
The music of the universe, the chiming of the spheres;
From cloistered wood and leafy vale, its tuneful medleys throng,
Till all the earth is drenched in light and all the world in song!

— *Elisha Safford, in Will Carlton's Magazine, June, 1905.*

The Value and Dangers of Hill Climbing

HILL climbing is an exercise of endurance which allows of great exertion without causing a corresponding degree of fatigue. In climbing, exercise and rest follow each other rhythmically.

This exercise is fine for the lungs and the heart. The vital organs are all stimulated to extra exertion.

When you are contemplating a mountain trip, it is an excellent plan to prepare for it by walking up and down small hills, or even up and down stairs. You should always begin gradually, and as the ascent grows steeper, you should take fewer and shorter steps. Try first a hill that is not steep. Do not change suddenly from a slow to a quick walk. It should all be done gradually.

The best time for a climb is in the early morning. You should then spend the afternoon quietly. The feet should be turned out on going up hill, but in coming down they should be parallel or directed slightly inward. The exercise in going down hill is much less than in the ascent, and the exertion is borne chiefly by certain of the knee muscles.

Climbing develops the thighs and calves. It brings about rapid changes of materials in the body, fat especially being consumed. The skin and kidneys throw off more waste material, and the lungs work harder and take in more oxygen. The heart pumps faster, and its muscles are strengthened. The general circulation is quickened and stimulated.

The clothing should be appropriate. The dress ought to be loose and of light weight, and, above all, the skirt should clear the ground. The shoes should be easy and comfortable, with thick soles and broad, low heels.

When the health is delicate, or the heart or lungs weak, this exercise, although it may be made of the greatest benefit, must never be indulged in without the supervision of a physician. The heart may be overexerted to the point of exhaustion.

Great care should be exercised about food and drink taken on a climbing expedition. Drink water only in moderate

quantities at a time and not too cold. Lemon juice in the water makes it very refreshing. The food should be nourishing, and it is often convenient to take that which is in a concentrated form.—*Sel.*

The Superfluities of Life

BY ROSE WOODALLEN CHAPMAN

I HAD gone to call upon a newly-made acquaintance, and found her surrounded by piles of dainty underwear, which nowadays is dignified with the name of *lingerie*.

"You'll forgive me, won't you," she asked, "if I go on with my work? I'm going away this afternoon, to be gone a week, and I must get my clothes ready to be packed."

I expressed my pleasure at being made so much a friend by such informality, and sat watching her, fascinated.

Garment after garment she took up, trimmed with lace, with embroidery, with tucks and ruffles, and into each one she ran one, two, three, or four ribbons, as the case required.

"I can't bear to wear underwear that isn't finished off with ribbons; can you?" she inquired, engagingly.

"They are very pretty," was my reply, as I wondered to myself what she would say could she know my benighted condition as regards what she evidently considered one of the essentials of life.

As I counted the number of articles she deemed necessary for her week's stay, and learned that they were all hand-made, I received an illumination concerning the conditions of the women I had been meeting. She had plenty of time for such work, having no children and a competent maid. But her friends, who looked upon her as the social leader of their "set," had babies, and sometimes no help. But hand-made finery being the style, they were devoting their time and energy, more than they could well spare, to this work. This, to my mind, was the explanation of the hurried, harrassed look I had observed on their faces, and of their frequent plea of lack of time.

My friend's artistic temperament and love of pretty things was further evidenced by the furnishings of her home. Numerous draperies adorned doors, win-

dows, and "cozy corners;" the walls were fairly covered with pictures, photographs, Chinese swords, daggers, meerschaum pipes, and various other curios; mantle pieces and cabinets overflowed with bric-a-brac of all kinds. The impression made upon one who entered the house was that here lived one who enjoyed possessing all pretty things; but I had seen homes less luxurious, less adorned, and yet much more artistic.

In my mind this friend stands as a type of those who burden themselves with the superfluities of life. They love the beautiful,— and apparently long to possess as many of its forms as possible. Yet the eye becomes confused with a multiplicity of attractions, and no adornment receives the consideration that its beauty deserves. A few artistic belongings in a simple setting receive much greater appreciation, and speak more clearly of their owner's artistic discernment.

Simplicity of living, in all its phases, bespeaks the highest taste and culture, just as the truly great are most approachable in manner. More than this, it shows an appreciation of the values in life. The best painter is the one who properly judges the values, in his painting, of light and shade, of color and contrast; so the best artist in the great profession of living is the one who can weigh the various interests that enter into the problem and can put aside the trivial and evanescent for the weighty and the enduring.

The one important thing in life is character; your own character, the character of your husband, your children, your friends. All other things should be judged by their bearing upon this important matter. Things may be delightful in themselves; but if they tend to add to your worries; if they are a barrier between you and your loved ones; if they interfere with the development of the higher faculties of your children, they become undesirable, inadvisable, and should be classed with the superfluities of life.

The mother who prepares for her baby dainty, hand-made garments, wonderfully trimmed with lace and embroidery, in the majority of instances is depriving that child of personal love and care that rightfully belong to him. What does he care for such finery? He wants his mother's companionship, and for himself perfect freedom for all forms of activity. To so attire him that he must be constantly cautioned, "Now don't get your dress dirty," is to interfere with one of his inalienable rights. The wise mother will make her baby's clothes simple, to serve as a background for his infantile charms, instead of taking the attention away from him to center it upon elaborate ornamentation.

Many housekeepers there are who bemoan their inability to keep up the interests of their girlhood. They have no time now to play the piano, to read inspiring literature, to join the club, or to enter upon any philanthropic work. They say they feel their deprivation; have they ever tried to see how many of their household tasks could be eliminated as superfluous?

I have been in homes where there were two and sometimes three pairs of curtains at each window. The effect was rich, but one whose mind was awakened to the question of the superfluities could but think of the extra work such hangings entailed.

Then there are the "cozy corners," the Turkish divans smothered in overhanging draperies, which the furniture stores are so eager to urge upon their customers as "the very latest style." Such corners are gathering-places for dust, and an unnecessary addition to the work of the home.

Heavy carpets on the floors may feel

soft under foot, but they are hard to sweep, are never really clean, save after the annual beating, and so are both unhygienic and burdensome.

Think how much less drudgery must be performed by the woman who has hard wood or stained floors with a few medium-sized rugs! Her floors can be wiped up quickly with a damp cloth, and her rugs thoroughly cleaned with a minimum amount of effort.

At the windows this same woman will have filmy net curtains, with ruffled border, it may be, that are ordinarily cleansed by putting them on the line where the wind can blow the dust out of them; or can easily be laundered when more thorough cleaning is desired.

On her walls will be a few artistic pictures, with no overhanging festoons or ribbons to catch dust and add to the labor. Bric-a-brac will be conspicuous for its absence; photographs will be put away, instead of covering her dresser and the walls of her bedroom. In a word, her aim will be to have her home light, airy, artistically furnished, but in such a way as to be the least possible burden to her and to her family. Husbands and children find it hard to be careful of the things that have been bought for show. Why not dispense with them, then, and have only that which is necessary and usable?

Many housekeepers have learned to dispense with unnecessary furnishings, but are still slaves to elaborate meals, especially when they entertain.

It is wise, in the first place, to remember that the health of the family is conserved by simplicity in the meals. Even though they are now used to a large variety at each meal, they can be gradually accustomed to a simple diet. No soup when there is dessert and no dessert when there is soup, is a very good rule for dinner. The other course should consist of a meat substitute and only two vegetables. A simple breakfast food, with bread and butter and fruit, is enough for the morning meal; while an equally simple supper should be entirely satisfactory.

It is a temptation to leave the paths of simplicity when company is coming; but if we just remember that our friends come to see us, not to eat our food, we will find it easier to restrain our inclinations in this direction. Oftentimes housewives become possessed with a spirit of emulation which leads Mrs. Smith to feel that she must set forth a more elaborate meal than Mrs. Jones had served, while Mrs. Robinson in turn strives to eclipse Mrs. Smith, and as a result meals become so complicated as to be most burdensome to the hostess and almost dangerous to the guests. Let us confine our efforts to making our simple entertainment as attractive as possible and furnishing such wit and merriment therewith, such geniality and kindliness, as shall make our guests feel that they have partaken of a feast.

In one small town the entertainments had become so elaborate that the majority of the women found it difficult to receive friends in what was considered the proper style. Old-fashioned, "come-in-to-supper" invitations were no longer fashionable. Once a year each woman invited all to whom she was socially indebted to a "reception," where every effort was put forth to surpass all previous occasions. The house was elaborately trimmed with cut flowers and hot-house plants; an orchestra was hired for the occasion; a "caterer" (think of it!) supplied a superabundance of indigestibles; and people came in crowds to push and shove, say "how d'ye do" and "good-by," and to criticize freely among themselves everything that seemed below the standard.

A newcomer to the place, having enjoyed unstinted hospitality, desired to

make a return, but could not at first see her way clear. Then taking her courage in her hands, she decided to follow her own judgment in the matter and to express *herself* in these entertainments. She planned three receptions, in order that all might be included, but none should be crowded. The first came in the spring-time, and her decorations were wild flowers and ferns brought from the woods by willing children. The other two were given in the fall, and then her house was made gorgeous with great bunches of autumn foliage. The dainty, simple refreshments were prepared by her own hands with the assistance of a capable friend.

There was no formality, as seats were provided for all, and friends were thus given an opportunity to get together in groups and enjoy a good, old-time chat, while a sweet-toned music box filled in the chinks with its familiar and pleasing melodies.

There was no stiffness in the farewells; each guest had too thoroughly enjoyed herself to be content with formal words of thanks—and so full of pleasure were they all that possible words of criticism were utterly forgotten.

To be ourselves — is this not the right aim in life? To be our *best* selves calls for omitting the superfluities, and devoting ourselves to those things which shall feed our souls. The world needs men and women more than it needs things; then let us determine to keep always in mind what are the truly important matters, and refuse to be troubled by the superfluities of life.

The Battle Creek Idea

BY DAY ALLEN WILLEY

A FEW years ago, ten thousand people were guests at five hundred banquets held in as many cities to celebrate the thirty-fifth anniversary of the "Battle Creek Idea."

These gatherings, all the way from Maine to California, were significant because they indicated the extent to which this "idea" in the treatment of disease had spread over the country. Undoubtedly it has caused the pretty little Michigan city, where it originated, to become known throughout the world; for in Battle Creek was built the first sanitarium to illustrate the employment of physiologic therapeutics as believed by its founders — the use of what they termed nature remedies. In the forty years that have elapsed the original system has been elaborated with the development of electrical science and physical culture, until the present institution must be ranked among the finest in the world, considered from the standpoint of architecture, hygiene, and facilities for the care of invalids, as well as those who minister unto them — the physician and the nurse.

The general style of the main building is that known by architects as the Italian renaissance. On entering one of the three large doors of the main entrance one finds himself in a spacious lobby, the ceiling of which is supported by a number of pillars of simple, graceful form. He notes the high paneled ceiling, the clerk's desk and the information bureau at the left, the reception room at the right, and a large elevator a few steps farther on. Crossing the center,

he finds at the left a broad marble stairway; at the right, a post-office and literature depot and a cozy corner. Opposite the main entrance are two doors leading through the palm house to the gymnasium. These doors are of glass, and are placed about ten feet apart; the intervening space is filled with plate glass, making a glass partition between the palm garden and the lobby. Over the doors and the glass-filled opening, at a height of about ten feet, is a narrow flower balcony, some twenty feet in length; over this balcony is a series of high, broad windows through which a flood of light enters the main lobby from the east, producing a bright and cheerful effect.

Kindergarten for patients' children

The glass partition between the lobby and the palm house places before the visitor on entering the building a charming vista of palms and tropical plants resembling an Oriental garden, with a cool fountain playing in the center. In the center of the parlor on the north side is a great fireplace which faces the hall, so that its cheerful light can be seen from the extreme end of the building, more than five hundred feet away. The outlook from the parlor is upon beautiful, green, shaded lawns, flower beds, wide walks, forming pleasing vistas. Across the hall at the left is the cashier's office. Just beyond this is the business manager's office, the stenographer's office, the chaplain's office, a series of medical offices, the library, the ladies' parlor, and lastly, the grand parlor at the north end of the building. Other features of the lobby are the post-office, then a series of offices for women which are connected with the women's bathroom by private corridor. In the south hall are offices for the superintendent, the medical clerk, and various specialists—eye, ear, nose, throat, nervous disorders, etc. There are also dental offices and offices for the special application of electricity, phototherapy, compressed air chambers, Arctic bath, the X-ray, and various other unique methods of treatment. The second, third, fourth, and fifth floors of the main building are wholly devoted to patients' rooms. About half of the rooms communicate with private bathrooms. On the sixth floor is found at the north end the operating room. Next is the kitchen, the serving room, the dining room, and the solarium; at the south end is a roof garden.

The total area of porches and verandas is about one and one-fourth acres, affording standing room for more than 15,000 people, and furnishing ample room for more than a thousand couches, accommodating as many patients with air and light baths. This calculation includes one of the most practical features of the institution, located at the south end of the sixth story, and beautified in the summer season by palms, flowers, and foliage plants. It is supplied with reclining chairs and couches for the use of patients, each of whom is required to spend several hours daily in the air. North of the roof-garden and adjoining the dining room, is the solarium which, in addition to the nu-

merous windows on the sides, is provided with an enormous skylight through which the sunlight benefits those whose extreme feebleness compels them to take their daily light baths indoors. In the summer time, the solarium is used as an overflow for the dining room, and at all seasons it is employed as a lobby in which patients gather for a social chat before and after meals.

A wheel-chair assembly

As the bath is recognized as one of the essentials in successful treatment, the facilities are especially worthy of note. The two bath buildings are identical in size, appearance, and arrangement. The east end of each basement is cut off for a swimming pool thirty feet wide and sixty feet in length, the pool running crosswise of the building.

The first floor of each bath building is devoted exclusively to baths of various sorts. Arranged along the outer wall on the north side, are small compartments each devoted to some special form of bath. Groups of dressing rooms and finishing rooms containing massage couches are arranged close to the bath compartments, so that the patient can prepare for his bath within two or three steps of the place where his treatment is to be received and completed. On the opposite side of the bathroom are to be found rooms devoted to Turkish baths, electric-light baths, Russian baths, vapor baths, and other facilities for the application of thermotherapy and phototherapy. There are several shower baths and douches arranged at proper intervals, together with shampoo rooms and other conveniences. The second floor of the buildings is divided into compartments for applications of electricity, massage, manual Swedish movements, special forms of corrective gymnastics, and other allied methods of treatment. Here, as well as on the first floor, the dressing rooms are convenient to the rooms in which treatment is administered, so that the patient does not have to travel about in a sheet before or after receiving treatment. The third floor is devoted to light and air baths.

The gymnasium building (66 x 120 ft.) affords opportunity for gymnastic training and indoor exercise. In the basement of the gymnasium is machinery for the application of mechanical Swedish movements. Many of these machines were originated in the institution, and are exclusively manufactured in the Sanitarium machine shops, which are constantly employed in work of this sort for the benefit of the Sanitarium and its branches. Of the machines may be mentioned vibrators, kneaders, shakers, breathing machines, mechanical trainers and manipulators and various mechanisms for encouraging feeble hearts, weak lungs, and slow stomachs to healthful activity. A portion of this room is

devoted to gymnastic sloyd, a special feature of the physical culture department, which was installed two years ago by the aid of Prof. Askel Mikkelsen, the government superintendent of sloyd for Denmark.

By special arrangement, light and air are admitted to every part of the bath and treatment apartments by means of a light shaft, nine feet wide, and extending nearly the entire length of the bath building, reaching from the first floor to the roof.

The "Battle Creek Idea" means not merely the methods employed by the Sanitarium itself, elaborate and varied as they are, but includes what is properly called the "nature cure" as well. The country round about in winter as well as in summer is utilized for an exercise and recreation ground for those whose condition is such that they can risk such exposure. When a patient recuperates to a point where he can indulge in pastimes such as tennis, golf, walking, and horseback riding, he has an opportunity to enjoy them — but under the care of his attendant. Besides the enclosed swimming pools in the bath buildings, an open-air pool has been provided which patients can use during the summer months, certain hours each day being allotted for women. By the side of the pool is a miniature seabeach of fine dry sand, where one can take a sun bath and sand bath as well. A unique feature of open-air exercise is the "wood lot." Enclosed by a high fence so that it is entirely private, the lot is provided with saws and axes, and here the male patients hardy enough to endure the exercise manipulate these implements, attired in their gymnastic garb.

Besides the buildings of the Sanitarium proper, included in the scheme is what might be called a summer health resort, on a lake in the suburbs of the city; while the cottage plan of housing patients is also employed — a group of about twenty cottages being built on the grounds in the vicinity of the institution, which are spacious enough to lay out shaded walks, drives,— in short, to form a very attractive park, which is frequented not merely in summer, but in winter as well.

In considering the "Battle Creek Idea," it is evident that its success depends largely on the employment of men and women of skill and intelligence as well as humanity. When it is stated that at times a staff of five hundred physicians and nurses are in service, an idea of the magnitude of the work can be gained, but the management believes thoroughly in individual care, and the actual proportion of nurses to patients is never less than one to three, while those suffering from severe forms of ailments and chronic diseases have their special attendant. To prepare the young man or woman for their duties here, they must not merely be trained in the routine connected with the hospital, but must

An Outing Party

be familiar with the kinds of food furnished, as well as qualified to assist in relieving the mind in connection with the body. The latter qualification, it will be recognized, is one of the most important. Really, they become friends and companions in the broad sense of the word,— not merely nurses — and undoubtedly the majority of the cases successfully treated can be credited in a great measure to their efforts.

Recognizing the necessity for attendants who should be able to fill the many requirements, the management of the Sanitarium has organized a training-school which has been in existence over twenty years. It is claimed to be the largest training-school for nurses in the world, as its graduates are engaged not only at Battle Creek, but elsewhere. The minimum number of students at any session of the school is at least one hundred, and at times it is considerably in excess of these figures. During the first years of the school those who left it were employed in the Sanitarium and in general hospital work outside; but in 1889 it was decided to make a specialty in educating what are termed missionary nurses. These are men and women who have decided not only to devote their lives to relieve suffering, but to help those who may not have the means to recompense them, and it is safe to say in all of the larger cities of the United States can be found graduates who are connected with medical missions and other charitable societies, who voluntarily give their services to the poor.

The regular course at the training-school comprises three years, but includes a post-graduate course, in which nurses receive special instruction in hydrotherapy, chemistry, and medical dietetics, and attend clinics especially arranged for their observation. A candidate for the vocation is carefully examined as to health and education before being admitted. As a result it is safe to say that the personnel of the nurses at Battle Creek is as high in standard as anywhere in the country. It must be added, also, that the vital importance of their devotion to duty is recognized.

The cooking school

Their apartments are not only comfortable, but supplied with all modern conveniences, and they are really cared for as well as those whom they serve. While the routine is by no means easy, the opportunity to accompany the patients in

their walks, rides, and the companionship which is thus developed form a recreation which the attendants appreciate. During their leisure hours, however, they are enabled to make use of such departments as the gymnasium, the plunge baths, and are free to enjoy themselves on the grounds about the Sanitarium.

The atmosphere of cheerfulness which pervades the place is largely due to their untiring efforts. They realize that the patient should be uplifted mentally if possible. It has been said that at Battle Creek every room is kept aglow with mental and moral sunshine through the agency of kindly sympathy and efficient service.— *The Trained Nurse.*

The Philosophy of Pain

PAIN is not to be reckoned as abnormal, but as Nature's protest against the abnormal; it is her finger pointing the other way that she means us to go. Till we learn that a given act or want of action brings disease or injury to the body, we suffer. Fire would destroy if my hand felt no pain when in contact with the flame.

If we go contrary to Nature's laws, wittingly or ignorantly, we are victims of pain or destruction.

Fatigue is a form of suffering to warn that certain elements poisonous to the body have been generated within, and that we must pause till they are eliminated by the processes of life chemistry, active during rest.

We can conquer pain by avoiding its causes; we can only avoid by knowledge. If we but knew or realized that no law of Nature can be violated except an inexorable penalty be exacted in pain, how much greater happiness might result. This law applies equally to every department of our lives, whether it be physical, mental, spiritual, moral, or intellectual.

When we learn that a fire is painful, we avoid its burnings.

The harsh grindstone makes the sharp ax.

Anguish drives us to effort, and it is only through endeavor that we make any progress whatever. There is no royal road to any success. The price for every gain must be paid.

Let no man cheat himself by thinking otherwise, but let him rather gird up his loins and courageously endure hardships, care, and the drenchings of sorrow. They are designed for his advancement and good. It is only thus he can go forward. To learn is his fate; and he can only learn through suffering. And if he does not see the lesson intended, he must suffer again and again till he has clear vision and obedient heart. Nature is obdurate and merciless. She will be obeyed, or slay ruthlessly, even to the last.— *Ernest Crutcher, M. D.*

IT is a comely fashion to be glad—
Joy is the grace we say to God.
—*Jean Ingelow.*

The Extermination of the Mosquito

SO much has been said of late years concerning the pernicious nature of the mosquito as a purveyor of malaria

Uncovered and Dangerous

and its hateful forms of ague, chills and fever, that even those phlegmatic or philosophic individuals who can endure its persistent sallies without irritation are no longer indifferent to its presence. The enlightened negro poet voices a common sentiment in the following lines: —

"Go 'way, Mistuh Skeeter! Don' you sing
dat song to me!
I's hyuhd about yoh doin's; you's es tough
as you kin be;
You's been aroun' a-lunchin' on malaria an'
things
Till you's jes' about as danj'us as a rattle-
snake wif wings.

"I didn' use to min' you when you come
a-browsin' 'round,
Ca'se I knowed a slap 'ud send you
tumblin' senseless to de groun',
But since I hyuhd dem white folks,
I's as skyaht as kin be.
Go 'way, Mistuh Skeeter! Don'
you sing dat song to me!"

The extermination of the mosquito is a live question, and since its accomplishment is comparatively easy, a very practical one. House property will rise considerably in value in localities freed from the annoying and menacing presence of this dangerous insect. Comfort, sanitation, and economy, — all demand its extermination. The New Jersey Legislature recently appropriated $350,000 for this purpose. Success in the undertaking will be a great thing, as the New Jersey mosquito is famous as being the largest in the world.

Why be bothered with these unnecessary pests when one season's effort will almost entirely rid the neighborhood of them?

The method of extermination is given in detail in *The Ladies' Home Journal*, by the President of the American Civic Association: —

Where to Look for Mosquitoes

If you are troubled with mosquitoes, the kind that are dangerous, remember that somewhere within six hundred yards of your house you will find the female mosquito laying her eggs in some one of these places: —

In some place of standing water.

A cesspool.
A sewer-inlet.
A rain-water barrel.
A horse-trough.
A roof-gutter that is clogged.
An empty bottle.
An old tin can.
Broken crockery that holds water.
A water-pan for dog, cat, or chicken.
A water-receptacle for a grindstone.
A hole in a tree.
A watering-pan for birds.
A garden fountain.

Any place, in fact, where water stands for five days or more. One tomato can in a shady spot, with water in it, has been found to breed sufficient mosquitoes to keep a family unhappy all summer. It is not true that mosquitoes breed in vines or grass; the female *must* have stagnant water in which to deposit her eggs.

How to Get Rid of Mosquitoes

Clean out every place where water stands.

So dispose of old tin cans, bottles, or what-not that rain can not possibly be retained.

Watch your roof-gutters.

Empty your rain-barrel of water every week, or screen it closely with fine-meshed wire on top.

Change the water every day in a drinking-pan for dog, cat, or bird.

Watch the watering-trough near your stable.

Fill a hole in a tree with soil packed tight, or with cement.

In other words, get rid of, or coat with kerosene, *all* stagnant, standing water, and you will get rid of mosquitoes.

If you have a playing-fountain, put little fish, like minnows or goldfish, in the water, and they will eat the mosquito larvæ.

If you have a sluggish brook or a stagnant pond near your house, spray kerosene or coal-oil on the surface; this makes it impossible for the "wigglers" to breathe when they come to the surface, and they die. The coal-oil application is only necessary at the edges, and is good only so long as the oil film is unbroken.

Well guarded against mosquitoes

MIRTH is the medicine of life:
It cures its ills, it calms its strife;
It softly smooths the brow of care
And writes a thousand graces there.
—*Anon.*

"OCCUPATION and exercise are the hand-maidens of purity and strength."

Thoreau on Fishing

I HAVE found repeatedly, of late years, that I can not fish without falling a little in self-respect. I have tried it again and again. I have skill at it, and, like many of my fellows, a certain instinct for it, which revives from time to time, but always when I have done, I feel that it would have been better if I had not fished. I think that I do not mistake. It is a faint intimation, yet so are the first streaks of morning. There is unquestionably this instinct in me which belongs to the lower orders of creation; yet with every year I am less a fisherman, though without more humanity or even wisdom; at present I am no fisherman at all. But I see that if I were to live in the wilderness I should again be tempted to become a fisher and hunter in earnest. Besides, there is something essentially unclean about this diet and all flesh, and I began to see where housework commences, and whence the endeavor, which cost so much, to wear a tidy and respectable appearance each day, to keep the house sweet and free from all ill odors and sights. Having been my own butcher and scullion and cook, as well as the gentleman for whom the dishes were served up, I can speak from an unusually complete experience. The practical objection to animal food in my case was its uncleanness; and, besides, when I had caught and cleaned and cooked and eaten my fish, they seemed not to have fed me essentially. It was insignificant and unnecessary, and cost more than it came to. A little bread or a few potatoes would have done as well, with less trouble and filth. Like many of my contemporaries, I had rarely for many years used animal food, or tea, or coffee, etc., not so much because of any ill effects which I had traced to them, as because they were not agreeable to my imagination. The repugnance to animal food is not the effect of experience, but is an instinct. It appeared more beautiful to live low and fare hard in many respects; and though I never did so, I went far enough to please my imagina-

A characteristic mosquito hatchery

tion. I believe that every man who has ever been earnest to preserve his higher or poetic faculties in the best condition has been particularly inclined to abstain from food, and from much food of any kind. It is a significant fact, stated by entomologists (I find it in Kirby and Spence), that "some insects in their perfect state, though furnished with organs of feeding, make no use of them," and they lay it down as a "general rule that almost all insects in this state eat less than in that of larvæ. The voracious caterpillar when transformed into a butterfly, . . . and the gluttonous maggot when become a fly," content themselves with a drop or two of honey or some other sweet liquid. The abdomen under the wings of the butterfly still represents the larva. This is the tid-bit which tempts his insectivorous fate. This gross feeder is a man in the larva state; and there are whole nations in that condition, — nations without fancy or imagination, whose vast abdomens betray them.

It is hard to provide and cook so simple and clean a diet as will not offend the imagination; but this, I think, is to be fed when we feed the body; they should both sit down at the same table. Yet perhaps this may be done. The fruits eaten temperately need not make us ashamed of our appetites, nor interrupt the worthiest pursuits. But put an extra condiment to your dish, and it will poison you. It is not worth while to live by rich cookery. Most men would feel ashamed if caught preparing with their own hands precisely such a dinner, whether of animal or vegetable food, as is every day prepared for them by others. Yet till this is otherwise we are not civilized, and, if gentlemen and ladies, are not true men and women. This certainly suggests what change is to be made. It may be vain to ask why the imagination will not be reconciled to flesh and fat. I am satisfied that it is not.

Is it not a reproach that man is a carnivorous animal? True, he can and does live, in a great measure, by preying on other animals; but this is a miserable way,— as any one who will go to snaring rabbits or slaughtering lambs may learn; and he will be regarded as a benefactor

No better breeding-place could be imagined than this

of his race who shall teach man to confine himself to a more innocent and wholesome diet. Whatever my own practise may be, I have no doubt that it is a part of the destiny of the human race, in its gradual improvement, to leave off eating animals, as surely as the savage tribes have left off eating each other when they came in contact with the more civilized.

Impure Ice and Typhoid Fever

People who are very particular about the purity of their drinking water, sometimes make their precautions of no effect by cooling it with ice, regardless of the fact that the ice may have been made from contaminated water. It is obviously of just as much importance that the ice used should be above suspicion, as that the water should be pure.

The tracing of an epidemic of typhoid fever at the St. Lawrence Hospital some time ago, to ice made from contaminated water, proved that under favoring conditions ice may be the source of this disease. "Formerly," says the *Boston Medical Journal,* "the hospital was supplied with drinking water through the St. Lawrence River, but this having been definitely shown to have been the source of very considerable epidemics of typhoid, was abandoned after various methods of purification had been investigated. Thereafter water was obtained from a small Adirondack stream. This change led to a practical disappearance of the disease for about two years, and during this time the water was not boiled, and ice was freely used. In the latter part of 1902, typhoid fever again appeared, and after careful investigation of the water and milk supplied, it was decided that the ice used in the institution was the probable source of infection. This ice had been taken from the St. Lawrence River, and had been stored more than seven months. It appears that when this particular ice was forming, three or four cases of typhoid fever had occurred in the city among users of well water. Bacteriological investigations of drinking water and melting ice led to the strong suspicion that the ice was at fault. Further careful investigation brought out the fact that the ice, which contained considerable extraneous matter, was contaminated with numerous organisms, many of which were motile. Cultures showed a rapid growth, and colonies of colon bacilli and typhoid bacilli were finally isolated. With the discontinuance of the use of this ice, the epidemic slowly subsided."

These careful investigations would seem to leave no room for doubt that ice may under favoring conditions be a dangerous source of typhoid fever, and should ensure precautions being taken against the spread of the disease from this source.

The "Can Age"

Those who use only man's natural foods — fruits, nuts, and grains — in a natural state, have, so far as they are personally concerned, no occasion for agitation over the question of adulterated foods. They take their food fresh from Nature's hand, with no possibility for adulteration.

Abstinence from flesh foods merely, does not exempt one from injury from adulterated foods. The present has been called the "can age," and the food of the modern housekeeper is —

> "spilled from cans galore,
> The cans of every size and shape are piled
> upon the floor;

A can of soup, a can of beans, a can of squash for pies," etc., etc.

In all kinds of canned foods there is the possibility of adulteration, or of treatment of the food with injurious chemicals. As an inducement to vegetarians to take an active interest in pure food legislation, *What to Eat* calls attention to some foods in common use among them which are liable to adulteration and injurious treatment.

Butter, it is said, is nearly all colored with anilin dye, a rank poison. Canned or preserved vegetables are in danger from the chemical preservatives and colorings used in their preparation. There are brands of every kind of preserved fruit and vegetable so adulterated with these chemicals as to render them positively dangerous. In the inferior-class canning factories the gleanings and sweepings from the factories are gathered together in a conglomerated mass, flavored and colored with various chemicals to represent different products, and placed in cans and jars with labels bearing the name of fruits of which they may not contain a particle. The fresh vegetables on the market are often sprinkled with harmful chemicals to make them appear fresh.

Hints for the Sickroom

Any one who has ever suffered from severe illness, knows something of the nerve strain which may be imposed by the presence of some people in the sickroom, and the soothing, restful influence which may be imparted by others. This difference may depend upon what seems to be the merest trifles, yet the effect is such as in the one case to retard and in the other to facilitate the patient's recovery. A contemporary gives a few hints which should be heeded not alone by those who have the care of the sick, but by all who have access to the sickroom: —

Never stand at the foot of a sick bed and survey the patient. All figures loom large to fevered eyes, but by the side of the bed they are only partially seen, and do not annoy with a sense of too much presence.

Do not open the door very slowly, for then the attention is strained, speculating as to whom the next comer can possibly be after all this preparation, and with such cautious approach. Low but clear tones, quick but sure movements, rapid rather than slow, are a great relief to a patient.

Whispering is torture. Silence is best until you can discuss matters in another room; but if you speak, speak out, and make no mysteries about anything.

In severe illness the nurse must watch her patient steadily, but without appearing to do so. In convalescence it frequently soothes the invalid to have the nurse seated at the window, apparently looking out. This frees the faculties from the tension that the sense of being watched usually gives.

FROM toil he wins his spirits light,
From busy day the peaceful night;
Rich, from the very want of wealth,
In heaven's best treasures, peace and health.
— *Thomas Gray.*

UNLESS a person has a pressing engagement with his own funeral, what sense is there in hurrying with his meals? — *Horace Fletcher.*

LOOK to your health if you have it. Praise God and value it next to a good conscience.— *Isaak Walton.*

... The Walking Club ...

A Tramp through Historic New England

BY JAMES M. HUTCHINSON

BAYARD TAYLOR spent two years in tramping through Europe for educational and physical betterment. Wordsworth took many tramps for the same purpose. Others have done the same, but the great mass of the American people have still to learn that in tramping, one has the ideal means for seeing the country. Steam cars and automobiles are good for fast traveling, but if one wishes to travel and learn, to benefit his mind as well as his body, he should then try walking.

It was in July, 1905, that five members of the Overland Walking Club,— Ed. Buckley, of Bay City, C. Fox, E. Fox, Wm. Hunt, and myself, of Jackson, Mich.,— started on a walking trip to see historic New England and the Hudson River district.

In order to see all the principal points of interest we utilized steam and electric

The walking party

Albany Court House

cars as well as boats, at various times, walking over the most interesting sections only. Our luggage consisted of two cameras, field-glasses, and two haversacks full of note books, maps, and sundry necessities. We planned to sleep out of doors, so each carried a light woolen blanket. The entire outfit weighed not over eight pounds. Leaving Jackson on July 8th, we took the train for Pittsfield, Mass., where our walking began. In changing cars at Albany we had a few hours to wait, and improved the time by seeing the principal points of interest, including the capitol building, supposed to be the finest edifice in the world, and costing about $27,000,000. On reaching Pittsfield we found ourselves in the heart of the celebrated Berkshire Hills. From Pittsfield we started on foot for North Adams, where we arrived the following day. Next day we took a train through the Hoosac tunnel, the longest in America, and walked back to North Adams over the Florida mountain road.

This is a most delightful region for one who loves natural scenery. The large, thickly wooded hills are beautiful in the distance, but to see them at their best one must tramp over them. The Berkshires are noted for their beauty, and for a short, pedestrian tour this is an ideal region. Our time was limited, however, and we spent only two days in this section, returning then to Hudson, N. Y., where we began our trip down the Hudson River. Taking the day line steamer, we rode down the river to Newburgh, where we resumed our walk. While on the boat we were busy with cameras and note books as we passed points of interest.

We spent several hours at Newburgh, the principal point of interest here being the house once used as General Washington's headquarters, which is now filled with relics of Revolutionary times. An excellent road led us from Newburgh to West Point. Arriving just in time to see dress parade, we were at first denied admittance to the grounds, as we were not wearing coats, but after an explanation we were permitted to enter.

A New England log cabin

The old frigate "Constellation"

Steam cars took us from Fort Montgomery to Stony Point, where we spent a few hours tramping over this historic battleground. From there we walked down the river to Haverstraw, and passed the Treason House, noted as being the place where Benedict Arnold and Major Andre negotiated for the surrender of the American army. This is one of the many places that can not be reached by cars or boat, but is very accessible to the walker. Some distance below Haverstraw we crossed the Hudson to the east side, and after a brief stop at Tarrytown we continued down the river, and were soon in New York City.

Having only a day to remain in New York, we started in early to see the city, and with a good friend as guide we visited a great many points of interest. We left New York on the evening of July 13, taking a boat for New London, Conn., where we arrived next morning. We walked and rode through Southern Connecticut and Rhode Island as far as Newport. The evening we arrived we found the North Atlantic Squadron, consisting of eight battleships and several torpedo boats. At Newport we had a pleasant tramp along the Cliff Walk, and among other places of interest we visited the United States naval training station. We rode from Newport to Bristol, and from there to Providence, walking over one of the finest roads that we had the pleasure of walking on during our trip. We spent a day in Providence, and were guilty of riding through Roger William Park in an automobile.

From Providence we went to Plymouth, Mass., and then walked over to Duxbury, where we saw the Standish house, Miles Standish's grave, and the John Alden house. We stayed over night at Nantucket Beach and went by boat to Boston the next morning, spending two days in the Hub City. One of the pleasantest days of our entire trip was the day we walked from Boston to Concord, over the same road used by the British and Americans on that memorable day in April, 1775, when the British retreated from Concord to Boston.

The "Treason House"

Harvard University grounds

The road itself is a fine one to walk on, and along it are many points of interest. We spent considerable time in Lexington and Concord, but one could spend weeks there to advantage if he but had the time. Taking the trolley back to Boston, we went by boat to Portland, Me. After a delightful moonlight ride on the Atlantic, we awoke next morning in Maine's largest city. We were anxious to see famous Old Orchard Beach and took a car for Saco, where we received our mail and then walked over to the beach. This is a grand place for bathing, and is visited by thousands yearly. We returned to Portland after a walk of about thirty miles, and next morning took a train for the White Mountains of New Hampshire, though not until after we had paid a visit to Longfellow's birthplace in Portland. The White Mountains are noted for their beauty, and among other peaks in this group is Mt. Washington, the highest elevation in the eastern part of the United States. We climbed this peak and enjoyed the sunset from near the top. In ascending Mt. Washington we went up the bridle path and ascended by the carriage road as far as the Glenn House, where we stopped for the night. Other places visited in the White Mountains were Glen Elis falls and Crystal cascades, both of which are well worth the long walk. Leaving the White Mountains, we took a train for Vermont, where we again started our tramp. The Green Mountain State is a delightful region through which to walk. We ended our walk through the New England States at Burlington. Thence we rode on steamers down lakes Champlain and George, and took the train at Schenectady, N. Y., for Michigan.

We walked, on an average, about twenty-one miles every day, and the expense of our entire trip was less than one hundred dollars for each person.

The Overland Walking Club has planned its trip for this year through Colorado and Utah, and in 1907 it is the intention of the members to take a tramp through several of the Eastern States.

Old Orchard Beach

Two Tree Puzzles: How to Solve Them

Easy ways of finding out the age and height of trees. The meaning of wood rings and bud scars

BY JULIA ELLEN ROGERS

TAKE things comfortably this month. It may be too hot weather for cross-country tramps by the Club. Meet on the coolest veranda, in the neighborhood best planted with trees. Supply each person with a small branch broken from the horse-chestnut tree. Now the conundrum for each to solve is, *"How old is my twig?"* The answer to the question is written in large letters on the twig you hold. It is in a sign language, though, and not many people know the key to it.

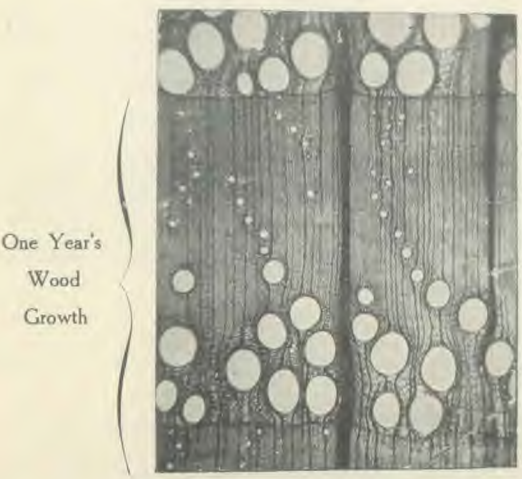
Begin at the tip of the main shoot. How much of it grew this season? All of you remember the horse-chestnut buds,— how lusty they were last winter, and how silvery they gleamed as they opened. The green leafy stems that tip the brown twigs are of this season's growth. Pairs of seven-fingered leaves spring out of the sides of these 1906 shoots. No leaves grow on any part of the tree except on new, end shoots, or green side shoots, short and leafy to the base. All the leaf-bearing wood is tender and juicy, with thin, smooth bark, unlike that of older twigs in color and texture.

At the base of the 1906 wood on each twig the color changes, and a band of several narrow grooves or lines marks the place where growth began. Last winter a bud, covered with many scales, stood on this spot. In this bud all the leafy shoot was wrapped up in miniature.

What means the screw-like band, or scar? Here the bud scales were attached that protected the precious contents of the bud. The bases of the scales were attached in straight lines to the stem.

Each band of scars on the branch gives us a date, and the horse-chestnut twigs in hand give a growth record for several years. "April, 1906," is the date at the base of the leafy shoots, all of them. It is the date when each bud cast its scales, and growth began.

Take the main twig now, and ignore the side shoots for a while. Below "April, 1906," we look for the place where, a year ago last April, the bud stood ready to open. We pass two or three pairs of horse-shoe-shaped leaf scars, with a side shoot or two. But we look for a different scar. Here it is,— and it tells this fact: "From April, 1905, to April, 1906, this twig grew so many inches." Who has a tape-



Magnified Cross Section of White Oak

line or a pocket rule? Everybody set down the facts: —

1906—6 inches, and 5 pairs of leaves.

1905—4 inches, and 3 pairs of leaves.

Leaves so large are as easily counted by their scars as by their blades. The two-year-old wood has these scars as plainly printed on its thin brownish bark as the newer, more succulent stem, from which we probably have to tear a leaf in order to see the scar it makes.

The height of a tree is measured thus in the Black Forest

A young horse - chestnut tree will tell its age and rate of growth as plainly as a twig. Only when trees are old enough to lose their bark are the bud scars lost, and the record with them. Young Carolina poplars may have their ages read with little difficulty. So, too, any quick-growing, large-budded tree. Beech twigs are especially easy to read, because the "screw" is so perfect, and so wide, due to the great number of scales covering each bud.

Now go back to the horse-chestnut twigs. "How many inches did the shoot grow in 1901? How many leaves did it have? What year did the branch fork? What year was the growth least? Greatest? How old is the 1905 section? The 1900?"

This year's shoot has one layer of wood around the pith under the bark. Last year's shoot has this year added a second layer of wood. The part that grew in 1904 has three layers of wood. Cut through twigs of these different ages, and the age record is there in a faint banding of the wood. It corresponds with the story told by bud scars. Look at the nearest chair. Is it of oak? Then its annual rings show plainly. A dark, porous band formed in spring is succeeded by a pale, close-textured band of greater width, formed in summer.

Never mind the broad, wavy "mirrors" of the wood. I am talking about the narrow parallel bands, of which it requires from six to a dozen to count up an inch of thickness.

Count the rings in the end of a log, or a stick of stovewood. Each is a year's growth of wood. Stumps record the age of trees.

How high is the horse-chestnut tree? That's easy to guess at, but hard to measure accurately, you say. Here is a method of measurement that is accurate and easy. If the sun is shining, measure the height of a post or stick driven into the ground, and measure its shadow. Now measure the tree's shadow. The height of the tree will be to the stick's height as the tree's shadow is to the stick's shadow. Suppose the stick is six feet and its shadow is ten feet, and the tree's shadow is seventy feet. Then,—

$$X : 6 = 70 : 10$$
$$10X = 420$$
$$X = 42 = \text{the tree's height}$$

In the Black Forest in Germany the forester often measures a tree as in the illustration. When at a distance from it exactly equal to the tree's height, he can just see the top of it as he looks backward between his knees. Straightening up, he paces off the distance to the tree.

A Summer Bird Talk

BY BELLE M. PERRY

IT almost seems that the wish I expressed last month, that Mother Nature might forget herself and prolong that rare time indefinitely, had in part come true, so like June are the early July days. There is the same luxury of fresh green, and the birds, dozens of them, are twittering and singing in our big fruit-laden mulberry tree. The wrens, though late nesters, have brought out one brood of babies, and are still as incessant in their bubbling song as on the May days. The late-nesting goldfinch is also in his full glory of song. Indeed, to the superficial observer, and most people are of that class, there is little hint that the bird season is at ebb tide. As the insects hum and buzz about me (for who could write indoors on days like these) and I see a pewee circle again and again from his garden perch, never missing his insect morsel, I recall anew our debt to birds for a habitable world, and Mr. Chester A. Reed's wonderful story, in figures, making this truth plain. After reading this, one can readily believe that but for the birds every tree would be stripped of its foliage, every growing thing made bare of green. We have all seen how some shrubs, like the currant, may be stripped of their foliage in a day, an example of the destructive power of insects and worms.

Mr. Reed is a Massachusetts ornithologist, and he has presented, in the preface to his pocket Bird Guide, to which I referred last month, a series of figures regarding bird destruction of insects which can not fail to appeal in a striking way to every one. Starting out with the easily accepted fact that one hundred insects a day is a conservative estimate for each insectivorous bird, he finds, counting five insect-eating birds to the acre, that the State of Massachusetts, with its 8,000 square miles, has a bird

population of not less than 25,600,000, which requires for each day's food the enormous total of 2,560,000,000 insects. In order to make these figures more forcible, Mr. Reed has computed the number of average insects to the bushel as 120,000 and he finds that Massachusetts birds destroy 21,000 bushels of insects daily during the five months when the summer birds are with us. Applying these figures to our own State of Michigan, with its 58,915 square miles, we find that our insect-eating bird population is fully 188,628,000, and the number of insects consumed by them daily, 18,862,800,000, which, counted in bushels, is 157,190, an amount so great that we can scarce comprehend it.

A Birds' Drinking Fountain

Then there is the splendid work of our all-the-year resident insectivorous birds, as the chickadees, nuthatches, creepers, and woodpeckers. A single chickadee will consume hundreds of insects or thousands of worm and insect eggs daily. Entomologists tell us that no bird compares with it in destroying the female canker-worm moths and their eggs. They calculate that as a single chickadee destroys about 5,500 eggs in one day, it will eat 138,750 eggs in the twenty-five days it takes the canker-worm moth to crawl up the trees. What a story these figures unfold to us of our debt to the bird world! They should be spread broadcast as the most effective way of arresting attention and awakening active interest in the preservation and increase of our insect-eating birds.

After the Dip

But I do not wish people to think of the eco-

Courtesy New Idea Woman's Magazine

nomic value of birds as their greatest value. I want them to know and love them for what they are able to add in esthetic, educational, and recreative ways to our human world. Their beauty, grace, intelligence, skill, exemplary domestic qualities, their gifts of song, and the confidence and even affection they will bestow on us when we make them know we are their friends,—all this goes to make up the higher bird values that are within the reach of all, and which can be made to mean as much to us as we put into it in interest and time and care.

Whatever we do for them is sure to come back to us, not only in economic, but in these higher ways. As an illustration of the latter, let me cite the one thing that has brought me the greatest return of pleasure this summer, apart from my bird excursions. It is the drinking and bathing places made for them in early spring, as a sort of experiment. I engaged a stone mason to make in the ground a number of basins of water-lime. He dug out a great deal of earth and filled in with coarse sand and fine gravel for a foundation to withstand winter freezing. The basins were shaped by sinking a large pan in the fresh mortar, to the needed depth, and leaving it there, with a weight to hold it in place, until the mortar was set. The basins are about three inches deep. In each I keep several flat stones, a little larger than a hen's egg, as a convenience to the smaller birds. One of the basins is under a hydrant, close to a clump of shrubs; another is at the foot of my birds' favorite shrub, a large snowball. This is but a few feet from the house and is easily seen from indoors. It has been a source of interest and pleasure to the whole family the summer through. At almost any hour of the day, one or more birds may be seen enjoying a bath. Often there are a number on the waiting list. A pair of chipping sparrows were the first to take advantage of this bathing place, and this before the water had been there an hour. A little later a pair of Baltimore orioles were discovered at the basin, and we were happy to know our experiment was a success. We have seen bluebirds, chipping sparrows, robins, and orioles on hand at one time. The goldfinches, phebes, and wrens enjoy them also. As I write I see a bluebird leave another of the basins to give way to a robin. It patiently waits for the robin to take its turn. The blue-

Courtesy New Idea Woman's Magazine

bird is scarce through with its bath when a catbird arrives. And so it goes, day after day. Even the nuthatches have come. Nothing have I been able to do for them has brought such bountiful returns of satisfaction and pleasure, with the possible exception of the winter-feeding of birds. True, the basins and stones have to be cleaned daily, and refilled, perhaps several times on the hottest days, but it is quickly done, and it pays. I believe the birds suffer almost as much from summer thirst as they do from winter cold and hunger. There are so few convenient and safe drinking places that the birds can depend upon, that the person who can add to his other bird allurements, "Fresh water the summer through," will be quite likely to win them in increasing numbers. I mean to protect these basins well in winter with a covering of straw, leaves, etc., and I believe they will come out all right for next year. I have heretofore provided the birds with tin or granite drinking places, but the birds never came in anything like the numbers which the mortar-made basins have brought. They like the rough surfaces; the basins seem almost to belong to Mother Earth, and consequently are more like a natural drinking and bathing place. I use, however, besides these, several of the rough trays, or saucers, that go with common house plant crocks, just for drinking places, putting them up from the ground in various places, on posts, limb stubs, etc., wherever I find a good place. The water in these is always cleaner for drinking, as the bathing places are so constantly used by our pets that the water is soon spoiled.

Antisepsis of the Mouth

BY J. H. KELLOGG, M. D.

SO long as the mouth is swarming with microbes, which is always the case when the tongue is coated and the teeth are uncleanly and presenting unfilled cavities, thousands of germs are carried down into the stomach with every mouthful of food or drink swallowed. The first step toward asepsis of the stomach, and a most essential thing in the treatment of indigestion, is mouth cleanliness. Modern researches have shown that nearly all diseases of the mouth, as well as a large share of the diseases of the stomach, are due to the action of germs which find a lodgment there. The mouth is peculiarly exposed to the attacks of germs, as it is located at the very entrance of the body, and a portion at least of the respired air passes through it, and the germ readily finds lodgment about the tongue, cheeks, between the teeth, and elsewhere. The mucus secreted by the glands of the mucous membrane lining the mouth is to some degree antiseptic in character, and possesses to some extent germicidal and germ-destroying properties. When the mouth is kept clean, this disinfecting mucus is capable of thoroughly protecting this portion of the body against the attacks of microbes, but when particles are left to lodge between the teeth, the germs, finding abundant soil in which to grow and multiply, become so numerous that the poisonous substances which they produce, neutralize the antiseptic mucus so that it becomes powerless for protection. Meat, more than all other foods, is injurious in this respect, for the reason that its fibers lodge between the teeth and are not easily removed, and for the further reason that it furnishes a kind of soil in which germs grow with the greatest rapidity and develop the most virulent properties. It is thus apparent that thorough cleanliness of the teeth and mouth is one of the most hygienic measures. This fact becomes still more apparent when we remember that the act of eating or drinking and the frequently repeated act of swallowing to clear the throat from mucus, a practise which can not be too much deprecated, are the means of carrying down into the stomach any microbes which may be present in the mouth. There are certain microbes, also, which seem to have their habitat in the mouth, particularly those of diphtheria, pneumonia, and consumption. It is not known that these germs propagate outside the human body, except under artificial conditions; but they find ready lodgment in the mouth, and are often present there in persons apparently enjoying perfect health, waiting the opportunity when a severe cold or some other depressing agent shall, by reducing the resistance of the body, enable them to obtain a stronger foothold, and to manifest their presence by the characteristic symptoms of diphtheria, pneumonia, or some form of tubercular disease.

Life

"LIFE's more than breath and the quick round of blood;
'Tis a great spirit and a busy heart
The coward and the small in soul scarce do live.
One generous feeling, one great thought, one deed
Of good ere night, would make life longer seem
Than if each year might number a thousand days,
Spent as is this by nations of mankind.
We live in deeds, not years; in thought, not breaths,
In feelings, not in figures on a dial.
We should count by heart-throbs. He most lives
Who thinks most, feels the noblest, acts the best.
Life's but a means unto an end; that end,
To those who dwell in Him. He most in them,
Beginning, mean, and end of all things, God.
Why will we live and not be glorious?

—*Philip James Bailey.*

How to Plan the Family Menu

BY LENNA FRANCES COOPER

THERE are two methods of determining the nutritive value of foods. One method is the per cent method, which is valuable only from a theoretical standpoint. No actual working basis can be evolved from it.

But another method has come into use; i. e., the calory system, which is dependent upon the heat production of foods. Some food substances — sugar, starches, acids, and fats — are especially designed as fuel for the body, to keep up the body temperature, and to supply muscular strength, which is only another form of the same force as heat.

Another class of food substances, the proteid first, are used as tissue builders; but after they have served their purpose, and are worn-out, waste material, they are burned up, this being the easiest and most economical way for the body to dispose of them.

Since all food is finally burned, or oxidized, in the body, a method which will compare the heat-producing qualities of foods must be the accurate means of determining their nutritive value. Hence the heat unit, or calory, has become the unit of food value. The calory is the amount of heat required to raise the temperature of one pound of water four degrees Fahrenheit.

Few people realize how much heat is actually produced by the body. If 2,000 calories, or food units, which are sufficient for the average adult, are consumed

Weights and measures

per day, enough heat is thus produced to raise the temperature of 8,000 pounds of water one degree Fahrenheit, or five and a half gallons of water from the freezing to the boiling point.

Since the different food principles or substances have their own purpose to fulfil in the body, in planning the menu, it is important that each should be considered. Especially important is it that the proteids should be present and in the proper proportion. If too much proteid is present, an undue amount of poisonous waste substances,— uric acid, urea, etc.,

— are left as cinders in the body. On the other hand, if there is not enough proteid, the individual becomes languid and debilitated.

Hence it is important that the provider of the family menu should have some knowledge, at least, of foods and their composition, and how to arrange them in the proper proportions.

The daily menu, according to the late scientific experiments, should comprise about 2,000 calories — provided the food is thoroughly masticated. Of this amount about 200 should be proteid, and about 600 fat. The remaining 1,200 should consist of sugars, starches, and fruit acids.

In order to give the housewife some idea of foods and their value, we shall give from time to time a list of food values and in common measures. In order to be at all definite, accurate measurements must be made. The regulation half-pint measure is the measure adopted for a cup (see illustration). *All* measurements are made *level.*

These menus are planned for a family of four: —

		Proteid	Fats	Starch and Sugar	Total
Raspberries	1 qt.	19.2		235.2	254.4
Gluten, 20 per cent	1 cup.	92.0	8.5	418.0	518.5
Cream	1 cup.	26.1	443.7	47.7	517.5
Whole-wheat flour, sifted once	1 cup.	80.5	25.5	419.0	525.0
White flour, sifted once	1 cup.	46.0	18.5	455.5	510.0
Spinach Pulp	1 cup.	9.0	11.7	110.7	131.4
Corn Pulp	1 cup.	37.0	29.0	232.0	298.0
Cooked Rice	1 cup.	19.8	1.8	171.0	192.6
Tomatoes	1 cup.	12.6	4.5	42.3	59.4
Macaroni (uncooked)	1 cup.	50.8	4.8	352.8	408.4
Green Peas	1 cup.	62.4	72.8	140.0	275.2
Potato (one medium sized)	1 cup.	7.0	1.3	110.5	118.8
Maple Syrup	1 cup.			1000.0	1000.0
Bread (Whole-wheat)	1 slice	11.3	2.4	58.0	71.7
Butter	⅛ lb.	.6	113.3		113.9
Milk (whole)	1 cup.	36.1	104.5	55.1	193.3
Peaches (pulp)	1 cup.				
Lemon juice	1 cup.			108.3	108.3
Sugar	1 cup.			991.1	991.1
Egg (white)	each	15.5	.6		16.1
Vegetable Gelatine					
Egg (whole)	each	26.3	41.9		68.2
Ripe Olives	1 doz.	3.5	120.9	8.75	133.1
Apples	1	3.3	7.8	99.6	110.4
Sponge cake	1 slice	11.1	42.7	115.2	169.0
Sanitas Raising Powder	1 tps.	26.7			26.7
Protose	1 lb.	91.2	64.0	40.8	196.0

Breakfast

Amount Ingredients	Proteid	Fats	Carbo-hyd.	Total
Red Raspberries (1 qt.)	19.2		235.2	254.4
Gluten Mush	111.5	341.2	450.7	903.4
Cream (½ cup) for Gluten Mush	13.0	221.8	23.9	258.7
Breakfast Rolls	116.8	191.7	465.8	774.3
No Coffee				
Cream (½ cup) for No Coffee	13.0	221.8	23.9	258.7
Sugar (4 tps.) for No Coffee			100.0	100.0
Total Calories	4)273.5	976.5	1299.5	2549.5
Calories per Individual	68.4	244.1	324.8	637.3

Breakfast Rolls

Gluten Mush.

Amount Ingredients	Proteid	Fats	Carbo-hyd.	Total
¾ Cup thin Cream	19.5	332.7	32.7	338.2
1 Cup 20 per cent Gluten	92.0	8.5	418.0	518.5
2 ¼ Cups Water				
Salt				
	111.5	341.2	450.7	856.7

Heat together the cream and water to boiling. Stir in lightly with the fingers the gluten, stirring continuously meanwhile.

Breakfast Rolls.

Amount Ingredients	Proteid	Fats	Carbo-hyd.	Total
1 Cup Whole-wheat Flour	80.5	25.5	419.0	525.0
1 tps. Sugar (¼ oz.)			29.1	29.1
1 Heaping tps. Sanitas Raising Powder	26.7			26.7
⅝ Cup thin cream	9.6	166.2	17.7	194.4
	116.8	191.7	465.8	774.9

Sift the dry ingredients together, then add the cream to the flour, slowly, a few spoonfuls at a time, mixing each spoonful to a dough with the flour as fast as poured in. Gather the fragments of dough together, roll to about one-third inch in thickness, cut into strips about two and one-half inches long by three-fourths inch wide.

Bake in a slow oven twenty to thirty minutes.

No Coffee.— The food value of No Coffee is so small of itself that it may be ignored. Only sugar and cream is counted.

Dinner

	Proteid	Fats	Carbo-hyd.	Total
Spinach and Corn Soup	65.8	148.0	212.5	426.3
Nut and Rice Stew	122.5	178.6	245.9	547.0
Macaroni and Green Peas	94.3	186.1	328.3	608.1
Baked Potatoes (4 medium-sized)	28.0	5.2	442.0	475.2
Spanish Egg Salad	117.2	411.3	46.4	574.9
Maple Apples	12.0	31.2	1148.4	1191.6
Whole-wheat Bread	45.2	9.6	232.0	286.8
Butter (4 Squares (⅛ lb))	2.4	453.2		655.6
Total Calories	4)487.4	1423.2	2655.5	4566.1
Calories per Individual	121.8	355.8	663.9	1114.

Spinach and Corn Soup.

Amount Ingredients	Proteid	Fats	Carbo-hyd.	Total
½ Cup Corn Pulp	18.5	14.5	116.0	149.0
¼ Cup Spinach Pulp	2.9	2.9	27.7	32.8
1 ¼ Cup Milk	45.1	130.6	68.8	244.5
1 Level tps. Salt				
	65.8	148.0	212.5	426 3

Prepare the corn and spinach pulp by pressing the vegetables through a colander. Prepared corn pulp may be used. Put together the corn, spinach, milk, and salt. When hot, serve.

Nut and Rice Stew.

Amount Ingredients	Proteid	Fats	Carbo-hyd.	Total
¼ lb. Protose, Minced	91.2	64.0	40.8	196.0
1 Cup Cooked Rice	19.8	1.8	171.0	192.6
½ Cup Water				
1 Small Onion Grated	1.9	.8	11.6	14.3
1 tps. Salt				
¼ Cup Tomato	3.1	1.1	10.6	14.8
¼ Cup Thin Cream	6.5	110.9	11.9	129.3
	122.5	178.6	245.9	547.0

Put the ingredients together in the order named, leaving the cream to add when all have cooked about five minutes.

Macaroni and Green Peas.

Amount Ingredients	Proteid	Fats	Carbo-hyd	Total
½ Cup Macaroni	25.4	2.4	176.4	204.2
¼ Cup Cream	6.5	110.9	11.9	129.3
¼ tps. Salt				
1 Cup Cooked Green Peas	62.4	72.8	328.3	608.7

Cook the macaroni in boiling salt water until tender. Drain, pour a dash of cold water over it, and drain again. Add the peas and salt, and lastly the cream when the ingredients are hot.

Spanish Egg Salad.

Amount Ingredients	Proteid	Fats	Carbo-hyd.	Total
4 Eggs	105.2	167.6		272.8
¼ Cup Tomato Juice	3.1	1.1	10.6	14.8
2 tps. Lemon Juice			6.7	6.7
2 doz. Ripe Olives	7.0	241.8	17.5	266.3
1 Small Onion	1.9	.8	11.6	14.3
1 tps. Salt				
1 tps. Celery Salt				
	117.2	411.3	46.4	574.9

Beat the eggs until blended. Add the tomato which has been put through a colander, the grated onion, salt, celery salt, and lemon juice. Cook in a double boiler, stirring while cooking. When thickened, add the chopped olives, and remove from the fire. When cold serve on a lettuce leaf.

Peach Gelee

Maple Apples.

Amount Ingredients	Proteid	Fats	Carbo-hyd.	Total
4 Medium-sized Apples	12.0	31.2	398.0	441.6
¾ Cup Maple Syrup			750.0	750.0
¾ Cup Water				
	12.0	31.2	1148.4	1191.6

Pare and core the apples. Heat the water and syrup to boiling. Drop the apples into the heated liquid, and turn frequently to insure cooking in all parts alike. When soft, remove the apples, taking care to keep them whole. Allow the liquid to cook down to a syrup consistency and pour over them.

A spoonful of whipped cream may be served if desired.

Luncheon

	Proteid	Fats	Carbo-hyd.	Total
Peach Gelee (1 qt.)	8.5	18.3	860.6	887.4
Sponge Cake	44.4	171.0	460.8	676.2
	4) 52.9	189.3	1321.4	1563.6
Calories per Individual	13.2	47.3	330.3	390.9

Peach Gelée.

Amount Ingredients	Proteid	Fats	Carbo-hyd.	Total
1 Cup Peach Pulp	8.5	2.8	110.2	121.5
¾ Cup Sugar			743.1	743.1
2 tps. Lemon Juice			6.7	6.7
½ Cup Cold Water				
¼ Box Vegetable Gelatine				
1 Cup Boiling Water				
1 Egg White		15.5	.6	16.1
	8.5	18.3	860.6	887.4

Put the Vegetable Gelatine to soak in warm water for one hour or more. Wash thoroughly in several waters, drain and put to cook in one cup of boiling water. Cover and allow to boil five to ten minutes.

Prepare the peaches by paring and pitting and putting through a colander, saving out a few of the choicest halves for use in serving.

To the peach pulp add the sugar, lemon juice, and cold water. Strain the Vegetable Gelatine into the above mixture and turn into the freezer. When chilled, but before freezing has begun, stir in the beaten white of egg and continue freezing .

Serve in choice half peaches.

The Daily Ration

	Proteid	Fats	Carbohyd.	Total
Breakfast	68.4	244.1	324.8	637.3
Dinner	21.8	355.8	663.9	1141.5
Luncheon	13.2	47.3	330.3	390.8
	203.4	647.2	1319.0	2169.6

Rowing as an Exercise

BY J. W. HOPKINS

THE great need of every man is plenty of work and play in the open air and in the sunshine; hoeing and digging in the garden among the plants and flowers, pulling weeds, chopping wood, — any work that will bring a healthful tingle to the nerves, and free perspiration with quickened circulation and respiration. The work which we really enjoy most, that employment which brings with it the greatest amount of healthful pleasure is an out-of-door occupation, and is usually one which demands rather an unusual amount of trunk movements as well as arm and leg work. The value of the exercise may be determined by the benefit which it brings to the heart, lungs, digestive apparatus, and other vital organs, and by the mental influence of the surroundings in which the work must be done.

Judged in this manner rowing is a most valuable exercise, second only to walking, with which it should be com-

Fig. 1. A good early morning exercise

Fig. 2. The back curves forward too much

bined to give an all-round development. Rowing calls for continuous bendings of the trunk, both forward and backward, thus increasing the size and strength of the waist and chest. Taken with a well-arched chest it strengthens the shoulder muscles and gives one a much better carriage.

The world in which we work while rowing is well calculated to rest and refresh the mind. The water sparkling and splashing beside the boat, the trees standing tall and strong on the sides of the lake or stream, and the blue sky with its clouds and sun bring the confidence and uplifting of mind without which exercise is too often a monotonous grind.

Rowing increases muscular strength by employing the muscles of the legs, hips, loins, back, shoulders, and arms. In rowing the ordinary boat, the leg muscles are used very little; with the sliding seat, however, the legs work vigorously. To take the stroke,— after grasping the oars, the arms are extended forward as the body is inclined forward. In this part of the movement the back is kept nearly straight, and the reaching forward of the arms is not allowed to depress the chest. A bad position is shown in Figure 2; the back curves forward too much, the head drops, and the chest is lowered. The head should also be kept lifted. After dipping the oars into the water the body springs backward as a bow does when the string is released, and the entire weight is thrown on the oars. The water acting as a fulcrum, the boat as the object to be moved, and the arms and body as the power, the boat is moved forward, the body is inclined backward, and the oars finish the stroke near the stern of the boat. As the stroke is finished the arms are bent, the elbows being drawn well to the sides. The oars should not be dipped in the water too deep, neither should they be raised too high above the waves in reaching backward.

As the work in rowing is done mostly with the back muscles of the body, a well-regulated daily program of exercises would include movements for the front of the body — abdominal exercises as described in July (1903) Good

Fig. 3. The body springs backward

HEALTH. These should be taken twice or three times daily. And *breathe* — breathe at least five hundred to a thousand deep breaths a day.

Rowing is a pleasing exercise, one well adapted to any age or to either sex. It is especially to be recommended to those who are seeking health. A walk of two or three miles followed by an hour on the water, makes an excellent combination of exercise. Every one can make the exercise vigorous or light as his own case or the occasion may demand.


RIGHT
AND
WRONG WAYS
OF
DOING THINGS

Children's Department

Johnny and Little Gray Hen

A story for very little folk

BY MARGARET ETYINGE

JOHNNY ran out to the barn one day, It was a lovely day. The sunshine was bright as gold, the sky was as blue as the eyes of baby-kittens, and the grass was as green as grass could be. Johnny

JOHNNY TELLS THE HENS.

was singing a little song, making it up as he went along: —

"Oh, how I wish my mother'd bake
A great, enormous 'lasses cake —
Bake — bake —
Cake — ca — a" —

when he stopped suddenly and began to laugh. And no wonder; for, looking up, he saw the head of Daisy, the cow, poked through the bars of her stall, and standing on it, right between the horns, was Little Gray Hen.

"Why, what are you doing up there?" asked Johnny.

Little Gray Hen looked thoughtfully down at him for a moment, and then she said, "Well, I don't mind telling you, for you are a pretty good boy, as boys go, and you never throw stones at me, and chase me about, and mock me when I try to sing, as bad boys do. The fact is, the hens and chickens in the hen-yard are so fussy and noisy and they keep up such a silly clucking and scratching and quarrelling, from morning till night, that a ladylike hen (as I flatter myself I am) finds it very disagreeable to stay among them. And they are extremely rude and impolite, and don't begin to know what good manners are. And so, this morning, when Big Gray Hen snatched a worm away from me, and Speckled Hen said her dress was much more fashionable than mine, and those mischievous chicks of Bantam Hen came slyly behind me and pulled out three of my prettiest feathers, I declared I wouldn't stand it any longer. I would look for another boarding-place. Their conduct really made me ashamed of being a hen. And I called on Daisy and told her how they acted, and she said (she feels very lonely, you know, since she lost her calf) that she would be glad of my company, and that I was welcome to live on her head as long as I liked. And I've been here now two hours—far above those common fowls, as I have always thought I ought to be, and it is so nice and quiet

that I think I shall stay here all the rest of my life."

"I don't think you will," said Johnny; and he began to laugh again as he ran away to the hen-yard to tell the hens what he had seen in the barn.

There was a barrel turned upside down in one corner of the yard, and on this Johnny climbed, scratching both his legs on the hoops as he did so; but bless you! boys don't care anything about a few scratches—and when he was safely seated on it he called the fowls, and they came flocking about him, thinking he had something for them to eat.

But Johnny showed them his empty hands, and then he told them about Little Gray Hen and the cow. And when he had told them, he said, "And why do you behave so badly that Little Gray Hen can not stay where you are? Why do you make her ashamed of being a hen?"

"Cluck, cluck! cluck, cluck! cluck, cluck! answered Big Gray Hen. "I guess we behave just as all hens ever behaved ever since the first one came out of an egg—no better and no worse—and what's more, we behave as well as we know how. Cluck, cluck! cluck, cluck! cluck, cluck!!—Do you?"

"Well, then, what can you expect from us?" asked Big Gray Hen?

"Please, ma'am," said Johnny, "I don't expect anything. And I should never have thought of finding fault with you had it not been for Little Gray Hen."

"Little Gray Hen, indeed!" repeated Speckled Hen scornfully. "It seems to me the smaller hens are, the bigger they think themselves."

"Is that meant for me?" said Bantam Hen, ruffling her feathers.

"Pray don't stop to quarrel, you two," begged Brown Hen; "but come on and let's all go and see this stuck-up thing who thinks herself so much above us."

"Cluck, cluck! cluck, cluck! cluck, cluck! She's not so high but that she'll come down when—" began Big Gray Hen.

"When?" asked the other hens.

THE HENS GO TO SEE.

"When she's hungry," said Big Gray Hen. "I've known—cluck, cluck! cluck, cluck! cluck, cluck!—a good many airs put on just after breakfast put off just before dinner."

After which wise remarks away they all started in a great hurry for Daisy's stall; but they had scarcely got there when Pamelia, Johnny's grown-up sister, came out of the house with a pan full of corn and called loudly, "Here chick, chick, chick, chick, chick, chick!"

At the very first sound of her voice the hens and chickens turned about again in a greater hurry than ever; but as fast as they ran—and they ran as fast as they could—they none of them reached the hen-yard as soon as Little Gray Hen.

"It was pleasant enough living on Daisy's head," she said to Johnny as she went to roost that night, "but you see there was nothing to eat up there. And I think, after all, it is best for a hen to try to get along with her own relations."

By the Editor

The Human Locomotive

It is exceedingly important to give attention to the due proportion of the food elements, especially of proteids. Great numbers of people are suffering from autointoxication because they eat too largely of proteids. The ordinary hotel bill of fare consists of a variety of meats to tempt the palate, with a scarcity of vegetables and carbonaceous foods. Men will take four or five different kinds of meats, with a morsel of bread and a small quantity of vegetables, making nearly the entire meal on meats. Those who live largely on meats are cultivating disease at every meal, taking into the system far too large an amount of proteids; that is, the blood- and tissue-building substances.

To make this matter a little plainer to those who do not quite understand what proteids are: A locomotive when it starts out on a trip takes on a load of coal. After it has run a certain distance, another locomotive takes its place, and it goes into the round house to be looked over for repairs. The machinist may find on examination that a bolt has slipped out or a nut dropped off, or the bearings are getting a little worn, and some metal repair is necessary. As the locomotive goes along, it takes on coal at the different stopping-places, for coal is being continually consumed; but it is only now and then that metal repair is necessary, and the amount of new metal required is very small. There are two kinds of material required to keep the locomotive in order,— one kind for fuel, and another kind for repairing the machinery.

Now proteid is equivalent to the metal which repairs the machinery. Carbohydrates — starch, sugar, vegetable acids — and fats are the fuel burned in the body. Incidentally they help to form the tissues, but their real purpose is to be burned, and converted into energy, heat, and force.

Consider the difference between these two kinds of material — that which is used for repairing tissue, and that which is used for consumption, for fuel. The locomotive has a tender behind it for the purpose of storing coal. At the start the tender will be full of coal, but at the first stopping-place the coal will be partly burned out, and there is room for more. For the metal needed to repair the locomotive, there is no storing-place. All the room there is for metal repair is where something has been destroyed or lost.

It is exactly so with the body. There is no provision for the storage of repairing material in the body, but there is provision for the storage of fuel. Fat is stored underneath the skin, behind the eyes, around the kidneys, packed in as cushions for all the viscera. A man who ought to weigh one hundred and fifty pounds, may weigh three hundred pounds instead. In that case he is practically carrying another man of his own weight on his back. A man may store up in his body two hundred or two hundred and fifty pounds of carbohydrates and fat, but he can not store up a single pound of extra proteid.

When we take into our bodies more proteid than we require for daily use, it must be sent out of the body at once, since there is no storage place for it. The kidneys are

the only organs through which it can be eliminated. It must go to the liver to be oxidized, burned, rendered soluble, then to the kidneys, whence it is carried off in the form of urea.

A man who was eliminating twenty-four grams of urea daily was put on a meat diet as an experiment. In two days the amount of urea had risen to forty-eight grams — nearly two ounces a day. At the end of five days' living on an exclusive meat diet, the amount of urea eliminated was four ounces — four times the normal amount. The kidneys then had to do four times as much work as was ordinarily and properly required of them. Kidneys so abused will after a while get tired out, and fail to eliminate even the normal amount.

When a man eats meat every day and lives mostly on a meat diet, what becomes of the large surplus amount of proteid taken into the body? Some of it goes out through the kidneys as urea, but the body eventually becomes exhausted and can not convert it all into urea. Some of it is then converted into uric acid, which begins to be stored up in the tissues. It accumulates around the joints, particularly where the vitality is the lowest, and by and by disagreeable symptoms are experienced. When the man gets up in the morning and begins to fasten his clothing, he finds his fingers a little stiff and clumsy. After sitting a while he feels a sort of crick in his back, or his joints feel somewhat stiff. The trouble is that uric acid is accumulating in his joints. That is the beginning of chronic rheumatism that by and by will twist his limbs into all sorts of shapes, and perhaps torture him to death.

It may be that instead of chronic rheumatism, the man suffers from insomnia — loss of ability to sleep soundly. Another symptom may be confusion of thought, inability to concentrate the mind or to come to a decision. His temper becomes irritable, he finds himself cross, nervous, ferocious, because of the constant irritation of his nerves by the uric acid and poisonous substances that have filled his blood to excess, for there is no normal provision for the storing up of proteids.

It is of the utmost importance that proteids should be taken only in moderate quantity. Carbohydrates and fats may vary somewhat. One who wishes to reduce his weight may do so by cutting down the carbohydrates and fats, but proteids should not be reduced below the proper proportion.

The Packing-House Scandals

Under the heading "The Crime," the Press Association sends out the following: "Horrifying revelations almost beyond belief, are made in the special report on conditions in Chicago packing-houses. . . . The President describes these conditions as revolting."

Although some of the accusations which have been made are denied by the packers, the evidence which has been produced, and the testimony of trustworthy eye witnesses commissioned to inspect the premises of the packing-houses, leave no room for doubt as to the truth of the disclosures which are being made.

There is still another side to this question which seems to have been entirely overlooked. If things are so bad in the great packing-houses of Chicago, which are under more or less constant supervision, what must be going on in the little slaughter-houses scattered all over the country? These small establishments furnish about half the fresh meat used by the people of this country. If the sanitary conditions in the Chicago stock yards are so bad as to make the whole civilized world throw up its hands in horror when the truth is told, what must be the situation of things in the small slaughter-houses which have no inspection whatever? These establishments are notoriously so horribly filthy and loathsome that they are rarely permitted to exist within city limits, but are forced to do their horrid work in some retired place as remote as possible from human dwellings and public highways.

The little abattoirs need inspection even more than the big ones. This is a matter that should receive attention. Every State should enact laws requiring the inspection of all animals which are slaughtered for food, both before and after killing, and it should be the duty of the State Board of Health of each State to see that the law is carried out.

Insect Violinists

Insects have no means of making vocal sounds, as do higher animals, for the reason that they possess nothing which corresponds to the chest, but breathe by means of tubes which circulate air through the body very much as blood is circulated through the body of higher classes of animals.

Every musical insect plays upon an instrument, which fact has led the poet to call the crickets and grasshoppers the "violinists of the fields." Every musical insect plays upon some kind of fiddle, and uses its wings. The majority produce sounds by very curious and varied devices. All insects have tenor voices. It is a curious fact that the males only are musical performers, female insects being mute.

Some insects, such as the chickadee, sing, or rather play, during the day-time. The chickadee produces its notes by means of a series of hard plates attached to the abdomen, which are employed in the same way as the castanets of the Spanish dancer.

The black field cricket is also a daylight performer. The tree crickets and the crickets of the domestic hearth make their music by night, on an instrument which is in principle exactly the same as the violin — ridges on the sides of the body, against which the wings are rubbed. The locust has regular violin bows on which there are fine ridges. These bows are attached to its wings by buttons. A few insects produce sounds by means of a fine membrane stretched over a cavity and connected with a sort of sounding-board. It is a curious fact that some insects which are the most truly musical performers are entirely without the sense of hearing. A few insects produce sounds apparently without possessing any means for the purpose; at any rate, if they have musical instruments of any kind, their secret has not yet been discovered.

The scientific writer from whom the above facts are gathered, well remarks: "The proper study of mankind is man, we are told, yet methinks time would often be better employed in studying some of the members of the humbler walks of life upon which the Creator has showered just as much love and attention, in many cases to better purpose and a truer 'at-one-ness' with Nature than can be found in man."

There is no more healthful nor more wholesome mode of exercise than the study of the creatures of the fields in their native haunts. The uplifting influence of contact with Nature is physical as well as mental and moral.

Effects of Alcohol on Rabbits

By request of the Physiological Sub-Committee of the famous Committee of Fifty, which some years ago undertook the investigation of the effects of alcohol, Dr. Julius Friedenwald made a long-continued series of experiments in the pathological laboratory of the Johns Hopkins University Hospital. The results may be briefly summed up as follows: —

Alcoholic intoxication in these animals was found to produce very marked and easily distinguishable changes in the brains and spinal cords of the rabbits experimented upon. The nerve cells were found to be greatly diminished. The protoplasmic processes, or long, thread-like extensions of the cells, were found to be swollen and varicose in appearance. The delicate buds with which these processes are furnished, whereby they are brought in contact with the processes of other cells, and thus enabled to communicate with them—a process absolutely essential to thought, which is the association of ideas,— and nearly all the nervous processes were found to shrivel up, or to disappear altogether.

Kleefeld, who had previously conducted similar experiments, found that these

changes occurred almost instantly after the introduction of intoxicating doses of alcohol into the circulation. The most extensive effects were found in animals which had frequently been subjected to intoxication.

Friedenwald observed in many cases "a gradual reduction in the amount of free hydrochloric acid in the gastric contents." This is a condition known in human beings as hypopepsia, or hypochlorhydria. Congestion, gastric catarrh, and fatty degeneration of the glands which secrete gastric juice were also observed. Other observers have noted hemorrhage, erosions, ulcerations of the stomach, and thickening of the mucous membrane from chronic inflammation. Fatty degeneration of the liver was also observed, and congestion of the liver was frequently noted. In the cases of seven rabbits albumen appeared in the urine, showing inflammation of the kidneys. Casts were also noticed. Many of the rabbits died from chronic alcoholic intoxication. In these fatty degeneration of the muscle of the heart was nearly always found. Pétrov observed arteriosclerosis in animals as the result of prolonged use of alcohol. Congestion of the stomach, liver, and kidneys was commonly observed, and in some instances destruction of the red cells and fatty degeneration of white cells. Spaink and Brown found peripheral neuritis and degeneration of various nerves in rabbits and dogs subjected to the influence of alcohol.

Dr. Abbott and a dozen other investigators have shown that, when under the influence of alcohol, animals are more susceptible to infection by bacteria and to the influence of bacterial poisons than are normal animals.

Fresh cucumbers, chewed, are perfectly wholesome. There can be no objection to them if they are chewed until reduced to pulp, but then they are not very palatable. It is the very first taste of cucumber, the freshness of it, and just the slight flavor of it, that makes people relish it. When a piece of cucumber is kept in the mouth long enough to be reduced to pulp, one gets decidedly tired of it, and does not care to try it a second time.

The best cure for those who like unwholesome things, is to compel them to chew them a long time. Make any man chew whisky, for instance. If he is addicted to whisky, and must have it, make him take the glass of whisky, bit by bit, keeping it in his mouth until he has gotten all the flavor out of it. He will not want any more for a week. I know some people who have been cured of the use of liquor, and even of the use of wine, by masticating it,—"eating" it in that way. A man who was accustomed to a great deal of whisky told me he found one mouthful as good as a whole glass, or half a pint, if he kept it in his mouth until he got all the flavor in it. A man who takes whisky gets it all ready, with a glass of water right beside him; he takes the whisky glass, brings it slowly up to his mouth, then tosses it off, quick. Then he drinks the glass of water as quickly as he can, so he will lose the flavor of the whisky that is in his mouth.

Simply taking pains to chew a thing that is unwholesome, will cure one of wanting it at all.

According to the *Pharmaceutical Journal*, a German chemist has perfected a method of producing sugar from sawdust. Five hundred pounds of sugar can be produced from a ton of sawdust. This sugar is afterwards fermented and converted into alcohol. One ton of sawdust produces thirty to forty gallons of alcohol. We shall soon have sugar factories and distilleries as adjuncts to our great Western saw-mills. If alcohol must be produced, we certainly better produce it from useless sawdust than to destroy the vast amount of good corn and barley which is now consumed for this purpose.

Question Box

10,324. Substitute for Meat — Dried Peas.— E. E. D., Georgia: "1. Are fresh cream and eggs taken regularly a perfect substitute for meat? 2. If not, what is? 3. Are dried peas healthful?"

Ans.— 1. Yes, and in every way much preferable.

2. Nuts and legumes are other foods which furnish all the wholesome ingredients of flesh food.

3. Yes, but they should be well chewed. If digestion is feeble, the peas should be put through a colander after being cooked, in order to remove the hulls.

10,325. Canned Strawberries and Anilin Dye.— B. R., Indiana: "1. Do the canned strawberries sold in the stores contain anilin or any other coloring matter? 2. Is anilin poisonous? 3. Is there any danger of using too much of it?"

Ans.— 1. Possibly some brands do. The best do not.

2. Yes.

3. Certainly. The smallest quantity is too much.

10,326. Nervousness.— V. W. S., New York: "A boy of four, ever since a baby, has urinated very frequently. At the age of three circumcision was performed, without relief. During urination he trembles all over, and now throughout the day he makes nervous movements. He seems to be a rugged child and not easily excited. Please advise."

Ans.— The case is one which should be looked into very carefully. There may be abnormal erotic excitement. A physician should personally examine the child and investigate the cause.

10,327. Perspiration—Superfluous Hair. — A New York subscriber asks: "1. What is the cause of red perspiration under the arms? 2. What will remove superfluous hair from the face?"

Ans.—1. Bacteriological growth.

2. The electric needle. You should consult a physician. It can be removed temporarily by the application of a paste consisting of barium sulphid, starch, and zinc oxid, which can be procured from any druggist. The application of X-ray will also permanently remove superfluous hair.

10,328. Catarrh.— E. T. C.: "1. What is the home treatment for catarrh in the Eustachian tubes? 2. Are cures often effected?"

Ans.— 1. Outdoor life, proper diet, cold baths, the use of the Vest Pocket Vaporizer, are all important measures. It is probable that a specialist should be consulted. See answer to No. 10,314.

2. Yes. A course in health culture at the Sanitarium would be of great advantage.

10,329. Indigestion.— S. H. M., Pennsylvania: "1. What form of indigestion is indicated by pain in the stomach several hours after meals? 2. What is the remedy? 3. Would you recommend fruit for me?"

Ans.— 1. Probably an excess of hydrochloric acid in the stomach, with hyperchlorhydria.

2. The employment of an abundance of fats in the diet, especially fresh butter, cream, yolks of eggs, olive oil, peptol, malted nuts, and bromose. Avoid the use of milk. Avoid all sour foods. Drink a glass of hot water half an hour before meals. Lie down for half an hour after meals. Avoid sweets of all kinds. Chew the food very thoroughly. When the pain in the stomach appears drink a glass of very hot water, followed by another in fifteen minutes if the pain is not relieved. The water must be very hot.

3. Such fruits as blueberries, pears, prunes, raisins, dates, and figs ought to agree with you.

10,330. Acne—Falling Hair—Dandruff. — D. C. B., Minnesota: "1. Is acne caused by bad blood? 2. Is falling hair caused by bad blood, or in case of dandruff by the latter? 3. What causes dandruff? 4. Are any of the commonly advertised dandruff cures effective? 5. If not, please prescribe."

Ans.—1. Yes.

2. Both causes are active.

3. Infection.

4. Some are, but many are not.

5. The following formula is a good one:—

Crude petroleum .....1 dram
Alcohol .....1 ounce

This should be well rubbed into the scalp at evening.

10,331. Superfluous Hair.—A. B. asks for the cause of and a remedy for superfluous hair.

Ans.—See answer to 10,327 (2).

10,332. Swollen Finger Joints.—E. E. B., Tennessee: "The first joints of all my fingers are slightly enlarged. There is slight pain and stiffness in each hand. The third finger of the right hand is numb, the end of it having a bluish tinge. At times the whole right hand is numb. Have had boils constantly for a year. Fifteen years ago had rheumatism in ankles and wrists. What is the difficulty?"

Ans.—You are suffering from autointoxication, probably through infection from the colon. You also have Raynaud's disease—a very grave affection. You should at once visit a sanitarium and place yourself under health training, as the case is too serious for home treatment without careful personal instruction from a competent physician.

10,333. Roaring in the Ears.—R. A., Nebraska: "1. What causes roaring in the ears with at times slight deafness? 2. What treatment should be followed?"

Ans.—1. Probably catarrh of the Eustachian tubes or middle ear, or both.

2. Live an active out-of-door life; take a daily cold bath; use the Vest Pocket Vaporizer. If not speedily relieved, consult an ear specialist. The diet should be very carefully managed to exclude meats of all kinds, the use of condiments and spices, the avoidance of tea, coffee, cocoa, chocolate, and alchohol. All fried foods should be prohibited, as well as greasy foods. Employ a diet consisting of fruits, grains, nuts, and vegetables.

10,334. Muscular Rheumatism.—E. E., Idaho: "Please prescribe for this trouble in the calves of the legs, accompanied by neuralgia in the head."

Ans.—Proper diet should be adopted, consisting of fruits, cereals, and nuts. Meats of all kinds should be avoided, as well as milk; and eggs should be used only in moderation. Drink an abundance of water and fruit juice during the day. Avoid drinking more than a cupful at meal time, or within half an hour before or two hours after meals. Especially avoid tea, coffee, cocoa, and chocolate. Cane-sugar is especially harmful in cases of rheumatism. When neuralgia occurs, the bowels should be emptied by a large enema of three pints of water at 103° or 104°, followed by one pint at 80°. For the pain in the legs, apply hot applications followed by a heating compress. Take a short hot bath at night, followed by cold rubbing.

10,335. Foul Breath.—J. M. N., California: "What is the cause of the foregoing when the person in question is at a loss to account for it from any ordinary cause?"

Ans.—The most probable cause is the growth, in the mouth or nose, or both places, of germs that produce volatile substances having a disagreeable odor.

10,336. Queer Sensation in the Head.—O. M. P., Illinois, eighty-six years of age, has sensations in his head which he describes as "flashes of electricity." 1. What is the cause? 2. The remedy?

Ans.—1. Neurasthenia.

2. See answer to 10,321 (2).

10,337. Should an Athlete Include Sweets in His Dietary?—A correspondent of twenty-two, an athlete, writes that in connection with a vegetarian diet he eats chocolate (not the beverage), maple syrup, cane-sugar, and sometimes home-made jelly. Will such a continuous diet prove injurious in time?

Ans.—Injurious effects will surely follow the use of too much of these foods. One can eat a moderate amount without injury, but too much is harmful. Malted nuts, malt honey or meltose, fruit sugar, and other natural sugars are preferable.

10,338. Gastritis.—A. B. S., Connecticut: "Prescribe treatment and diet for a child of five who has had repeated attacks of gastritis, which last several days. She vomits and passes blood. Milk seems to disagree. Attacks occur about once in two months. A year and a half ago large adenoids were removed from her throat."

Ans.—A fomentation to the abdomen, followed by a heating compress. The heating compress consists of a towel wrung out of cold water applied to the abdomen, covered with mackintosh, and enough flannel to keep the parts warm.

The diet should consist of corn flakes and cream, granola, buttermilk, soft-boiled or soft-poached eggs, gluten porridge.

The child may have ulcer of the stomach. You should not trust to home treatment, but place the child under the care of a competent physician. It will probably recover with proper treatment and an outdoor life.

10,339. Colds.— Mrs. C. S. H., Washington: "My seven children (two of whom died of diphtheritic croup) have colds continuously. Their tonsils are enlarged. The children snore in their sleep. Would the fact that their father and I are subject to colds account for their condition? 2. Would you advise removal of the tonsils? 3. What other measures would be beneficial?"

Ans.— 1. No. It is probably due to low resistance and feeble constitution.

2. Yes, if there is mouth breathing and snoring during sleep.

3. General directions for improvement of the health as described in the answer to question 10,321 (2).

10,340. Arteriosclerosis.— Mrs. E. J. S., California: "1. How can one order his life so as to prevent hardening of the arteries in old age? 2. What causes dizziness (rush of blood to the head) in old people? 3. Will gas in the stomach and bowels cause dizziness? 4. Do wrong combinations of food cause this gas?"

Ans.— 1. Hardening of the arteries in old age may be postponed by the employment of a low-proteid diet; that is, one which excludes meats, fish, flesh, fowl, condiments of all sorts, including tea, coffee, cocoa, chocolate and alcohol,— and thorough mastication of the food. Take a daily cold bath on rising in the morning.

2. This is a common symptom of arteriosclerosis, or hardening of the arteries.

3. Yes.

4. Yes, when such as to produce indigestion.

10,341. Piles—Ear Vaporizer—"Home Hand-Book."— O. M., Missouri: "1. You say that piles can be cured without cutting. How? 2. Will the polyvaporizer cure discharge of the ears when the hearing is not affected? 3. Can an intelligent person, with the aid of 'Home Hand-Book,' treat most sickness without the services of a physician?"

Ans.— 1. Severe cases require operation, — not necessarily cutting. The snare, the clamp, the cautery, is the most common method. Mild cases may be relieved by the application of an antiseptic such as the following: Ichthyol two parts, vaseline three parts. Cleanse the parts thoroughly each time the bowels move, and apply a little of the ointment.

2. With attention to general health, great benefit may be derived from the use of the polyvaporizer, but a good physician should be consulted unless the discharge quickly ceases.

3. The "Home Hand-Book" will doubtless prove a valuable aid in the care of most cases of sickness, but it is especially designed for cases in which the services of an intelligent physician can not be secured.

10,342. Urinary Incontinence in an Elderly Person.— A subscriber asks: "1. Does urinary incontinence in an elderly person necessarily indicate diseased kidneys? 2. May not weakness of the muscles of the bladder be the cause? 3. What is the remedy? 4. Would roller massage across the groin be beneficial?"

Ans.— 1. No.

2. Yes.

3. The case requires skilled medical care. No simple remedy will answer the purpose. There should be first a careful examination. It may be that the trouble is due to enlargement of the prostate, resulting in an atonic condition of the bladder. Treatment should not be left to unskilled hands.

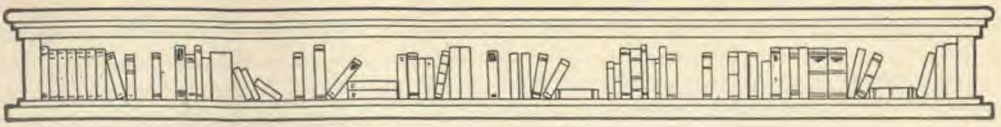
4. Probably not.

10,343. Vegetarianism.— "Buckeye": "It is claimed by vegetarians that the virulent scolds and pessimists are flesh eaters; that statistics show that as the consumption of beef increases, so does cancer increase; that a flesh diet induces a thirst for intoxicants; also that vegetarians escape appendicitis, and that the strongest and most enduring persons are vegetarians; that, to illustrate the beneficent policy of William Penn,— peace,— vegetarianism is an efficient instrumentality. Please express your opinion along these lines."

Ans.— I think the views expressed are in the main correct.

10,344. Lime versus Uric Acid.— T. C. K., Tennessee: "Will lime taken in water neutralize uric acid in the blood? Farmers make their acid soils alkalin by spreading lime on them."

Ans.— No.



LITERARY NOTES

"**Tolstoy as a Schoolmaster.**" By Ernest Crosby, Chicago. Hammersmark Publishing Company, 151-153 Wabash Ave., Chicago.

This volume of ninety-four pages is a masterly description of a master's mind. Tolstoy is unquestionably a character whose influence is more widely felt than that of almost any other person living in the world today. Perhaps no one will agree with him in all things. There are many problems which each individual must solve in his own way, as he sees them from his particular standpoint; but Tolstoy is a man who is looking up toward better things. His ideals are of the highest. He wakens thought, inspires men to better endeavor. Mr. Crosby has been a close student of Tolstoy and his philosophy. He understands both well, and in this little book he has given a delightful picture of both. There are few writers who yield a more transient pen than does Ernest Crosby, and there is an increased multitude of thinking men and women who welcome each new product of his pen.

"**Missouri Botanical Gardens: Sixteenth Annual Report,**" by Wm. Trelease. Mr. Trelease is the director of the famous Shaw's Gardens, now known as the Missouri Botanical Gardens, a position which he has filled for many years. To the great learning, ability, and persevering effort of Mr. Trelease, if not more than to Mr. Shaw's financial aid, is the world indebted for the marvelous beauty of this great botanical collection, the fame of which has extended throughout the whole civilized world. The work is beautifully printed and freely illustrated.

Few periodicals offer their readers what **The Youth's Companion** does. The contributors for 1906 include Madame Curie (the discoverer of radium), Luther Burbank (the "Wizard of Horticulture"), Hon. Grover Cleveland, Helen Kellar, Margaret Deland, Capt. A. T. Mahan, Lady Henry Somerset, Commander R. E. Peary, Rev. Dr. John Watson (Ian Maclaren), Sir Edwin Arnold, Senator Henry Cabot Lodge, Justice D. J. Brewer (of the United States Supreme Court), the Duke of Argyll, Justin McCarthy, Rider Haggard, Robert Grant, F. A. Vanderlip, Herbert Putnam (Librarian of Congress), Richard Whiteing (author of "No. 5 John Street"), Pres. H. S. Pritchett (of the Massachusetts Institute of Technology), Sir H. H. Johnston, and Prof. L. H. Bailey (of the Cornell College of Agriculture).

"**Addresses for Young People.**" By Chas. C. Lewis, President of Union College, College View, Nebr.

A good book, full of good ideas, written by a man whose whole life has been devoted to the helping of young people to see, appreciate, and attain to the highest ideals. The work abounds with apt illustrations and references and wholesome teaching.

There are no limits to child slavery. The problem is not sectional, but national. Statistics show — not poor, dull old statistics as we know them, but human documents in which every unit is an infant soul — statistics show that according to the census of 1900 there were in that year 1,752,187 children admittedly employed in "gainful occupations" in the United States. But these figures, it would be easy to show, are ridiculously, though perhaps not purposely, below the mark. Many thousands of children are working under the protection of certificates, in which they are falsely represented as being of the legal age for employment. A child of ten or eleven years gets a certificate, taken out in her name by an older sister, perhaps, in which she is described as fifteen years of age. She needs to work only a year to be actually eleven or twelve years old, in order to be classed as an adult over sixteen years of age. There are many thousands of such cases.—*From "To Save the Children," in* **Woman's Home Companion**, *for June.*

Scribner's Magazine for June contains a charming nature article by Frank M. Chapman, the well-known ornithologist, who gives his impressions of "English Bird Life," with pictures from his own photographs.

How did it feel to live through the San Francisco earthquake and fire? — to watch men die, and buildings shrivel in the flames? James Hooper, the brilliant short-story writer tells the story in the June **Everybody's** You should read it. It is the one sensitively realized, accurately truthful, powerfully phrased description of the great catastrophe that has been published. It is the human side of the disaster that Mr. Hopper tells, and he tells it at first hand. His story will live in literature. **Everybody's** also publishes the latest pictures of the destroyed city, sketched a few days before the earthquake by Vernon Howe Bailey, whose series of drawings of American cities have aroused so much admiration.

Those who are interested in aviaries will be glad to read George Wharton James's article "With the Birds" (in Pasadena), in **The Four-Track News,** for June.

PAMPHLETS RECEIVED.— "The Agreement between Science and Religion." By Orlando J. Smith. C. P. Farrell, publisher, New York.

"A New Method for Indicating Food Values." By Irving Fisher, Yale University.

GOOD HEALTH

A Journal of Hygiene

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115 Washington Ave., N.

BATTLE CREEK, - - - MICHIGAN

WHY WE DO NOT CAN FRUIT RAW.

MANY a housewife has never asked herself this question: "Why do I cook fruit, vegetables, etc., before canning them? Why not can them raw?" It is not because they are improved by the cooking in either taste or appearance. The woman would much rather have whole, fresh peaches, pears, cherries, etc., just as they come from the trees than to have them cooked and preserved. Why, then, do we cook fruit before canning? Not surely on account of taste and looks, for we would much rather have it fresh if we could.

We cook fruit not for the sake of cooking, but to kill the tiny, microscopic organisms with which all fruit and vegetables are covered, and which, if left alive, develop and increase in number and attack the fruit, causing it to spoil.

There are some substances which resist the attacks of germs. Fermentation germs do not like thick, sugary syrup. That is the reason jelly keeps fairly well without an air-tight covering. Fermentation germs do not like alcohol. Fruit would keep forever in alcohol, but there are sanitary, economic, and moral reasons why we do not preserve fruit in alcohol.

To insure absolute success in canning, there are two things to watch,—cook the fruit, etc., long enough to be sure all germs are killed; and then put the food up in a can that is absolutely air-tight, so that no new germs can make their way in after the jar is on the shelf. A fruit jar must be first, last, and all the time, air-tight. There is

danger in a porous rubber ring or a top that does not fit to the ten-thousandth part of an inch. The little germs which cause fermentation and decay in foodstuffs are so tiny they could march one thousand abreast through the eye of a cambric needle. It means something to say a fruit jar must be air-tight.

Some housewives rather ruffle up at the suggestion that the air in their kitchens contains a germ of any kind. You may think the air in a room is as pure as crystal, but let a sunbeam fall aslant the floor, and you will see that the air contains millions and millions of tiny dust particles. Still smaller than dust particles are the mischievous organisms which cause fermentation. They are here, there, and everywhere in every kitchen, no matter how clean.

So, remember, successful canning means to kill all the germs by thorough cooking before the fruit or vegetables are placed in the jar and then to use a can that is absolutely air-tight,—air-tight, not for a day or a week, but for months and years.

The Economy Jar, which has been in use throughout Europe, Australia, and the Sandwich Islands for some time, has been introduced into this country, and fills all the above requirements for a sanitary and absolutely sure-sealing, air-tight jar.

A LETTER FROM A CORRESPONDENT

KENSINGTON, MD.

MY DEAR DR. KELLOGG:—

I should suppose that the recent Chicago packing-house disclosures would tend to bring about the reform in diet which you and many others are wishing for, for the benefit of humanity.

"I am astonished to think," said Plutarch, "what appetite first induced man to taste of a dead carcass." Cicero said that "men were destined to a better occupation than pursuing and cutting the throats of dumb creatures."

The thought that people can't live, and live splendidly, without meat is absurd, and held only by people who know nothing of history. Fruits, vegetables, legumes, eggs, and milk make a great variety to choose from, and in using them we may be free from wretched, adulterated, and filthy, prepared stuff, which man's worst enemy (man) puts up for his fellow-man to become diseased from. If people would only have intelligence enough to get their food direct from nature, or at least in a natural state, so they could know by personal examination the condition of the products which they intend to use as building material, they would be incomparably better off in health and purse.

I believe the time will never come when packing-house products will be fit to eat. They will "buy up" or get around any inspection for the almighty dollar, as past records show that their motto is: "Give us the cash; damn the people!"

Meat is a repulsive diet at best, and if one wishes to learn how to lose his desire for it, just let him slaughter a lamb and prepare it for his own eating. That will stop the desire for such a diet, unless inhuman brutes.

I, personally, would rather sit down to a dish of rice pudding, date gems, or steamed barley and dates, with rich cream and bananas, than any flesh meal which I have ever seen or tasted.

The desire for meat comes of a depraved taste.

You may publish this letter in GOOD HEALTH if you wish.

Yours for decent living,

HARRY B. BRADFORD.

WE have received word from the St. Helena (Cal.) Sanitarium that it is practically uninjured by the late earthquake, and that they are receiving patients as usual. The food factory also escaped unharmed.

Their work in San Francisco was totally destroyed. The extent of their loss will depend upon the ability of the insurance companies to meet their obligations. San Francisco, San José, and Santa Rosa suffered very severely, and will probably have to be practically rebuilt.

The Modern Management of Tuberculosis or Consumption

(Continued from page 375)

Milk in large quantities stands foremost as a food. From two to four quarts daily should be taken, and this, too, after the regular meals have been eaten. Six to eight eggs, raw or cooked, stand next to milk in importance. Sweets, desserts, and highly seasoned pastries should be avoided, as they lessen the appetite for things that are necessary.

A cure, then, to recapitulate, consists of rest in the open air and an abundance of the proper food. It looks very simple, but it requires a great deal of patience, common sense, and perseverance to pursue this cure successfully in private. In the modern, well-conducted, open-air sanatorium this life is easily led. Here every one is doing the right thing. A newcomer soon falls into line, and does, as a matter of daily routine, that which he will not do in the home. Many such places are now being established, and it is a movement in the right direction. Our results to-day in curing consumption are a direct outgrowth of the modern sanatorium. We can not have too many such places. They not only bestow health upon their inmates, practically doubling every patient's chances of recovery over the home, but they act as educational centers to scatter knowledge in regard to this most fatal disease.

The first modern sanatorium for consumptives was established by Dr. Herman Brehmer, of Gorbersdorf, Germany, in 1856. All others since can trace their origin to this pioneer. Dr. Brehmer did not, however, for years fully understand the virtues of rest in his treatment, as he insisted upon exercise. It remained for his pupil and co-worker, Dr. Dettweiler, first to prove and call his attention to the advantages of rest over exercise in the treatment of consumption.

Dr. Dettweiler is and has been for

many years medical director of a very large and successful sanatorium at Falkenstein, Germany. In Germany alone there are at present some ninety sanatoria, and nearly every other country in the civilized world has to-day its sanatoria for consumptives.

In this country Dr. E. L. Trudeau has the honor of being the pioneer of the sanatorium idea. A consumptive himself, some eighteen years ago he founded the present Adirondack Cottage Sanatorium, at Saranac Lake, N. Y. All other institutions in America (and we now have several) received their ideas either from Brehmer, Dettweiler, or Trudeau. The secret of the sanatorium's success in percentage of cures lies in the absolute control its medical director has over its patients. The best place for a consumptive is in a sanatorium, and if he will not or can not enter one, the treatment at home must come as near to the sanatorium life as possible.

In climate, especially Colorado climate, we have a most valuable adjunct in the cure of tuberculosis. The virtues of Colorado do not depend upon any one condition, but rather upon several—dry cold air, almost perpetual sunshine, electrical conditions which act as a tonic, and last, but not least, some twenty-five per cent less oxygen in the air, due to altitude, which forces an individual to breathe oftener and deeper, opening up long-unused air cells in the lungs. We have seen how bacilli lodge in certain out-of-the-way places in unused air cells of the lungs. Altitude ventilates these out-of-the-way places and makes them uninhabitable by bacilli. By preventing the formation of new tubercles in this way, Colorado climate and altitude cure consumption.

Climate alone, however, will not cure a large percentage, unless it is combined with the right kind of life. We need many sanatoria in Colorado to aid our wonderful climate in effecting cures.

A cold dry climate, like that of Colorado in winter, is the one *par excellence* for a consumptive. Warm, enervating climates, like those of New Mexico, Arizona, Florida, and California, are not the places for consumptives. They lack the cold air so essential in reducing fever. It stands to reason that a climate which will make it easy for a consumptive to remain in the open air is better than one where dampness and the absence of sunshine drive him indoors.

In conclusion I would call attention to the grand field this disease offers to philanthropists, and how very few workers we find in this field. Hundreds of our brightest and best people die for the want of a few dollars to give them the necessary food, etc., until they are on their feet again. We need many semi-charitable institutions in all parts of the country, especially in Colorado, where patients come from all parts of the world; places where the sick may go with their small fund of money and receive semi-help until such time as they can do for themselves. The cost of the average Carnegie library would build and equip a modern sanatorium with a capacity of fifty patients. The usual income required by Mr. Carnegie from the community for his library would, if placed with the income from fifty patients at one-half actual cost, be sufficient to defray all expenses of a sanatorium, and it is a question which would do the most good,—to reclaim the lives of useful citizens, or to educate; to lend a hand to deserving sick, or to cultivate the mind. We need Rockefellers and Carnegies to give this most deserving charity a substantial support.

The cut on page 372 illustrates the life as led at Nordrach Ranch, Colorado Springs, Colo., an institution devoted exclusively to the open-air treatment of consumptives. Patients sleep in specially constructed tents in all seasons of the year, and the results are sufficient to create great enthusiasm.

GOOD HEALTH

Is the oldest health journal in the world. It is owned and published by a philanthropic association organized for the purpose of promoting hygienic reform in general and especially dietetic reform. There is no private interest, and the journal is not the organ of any institution or association other than its own.

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