

GOOD HEALTH

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



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CONTENTS

August, 1906

The Menti-Cure.

What the White Race May Learn from the Indian (*Illustrated*).

By George Wharton James.

The Ex-Invalid at Home. By Kate Lindsay, M. D.

Some Natural Remedies for the Relief of Headache (*Illustrated*).

By Linda M. Roth, M. D.

A Torrent of Mixed Drinks (*Illustrated*).

Lying Passive. By Helena H. Thomas.

Traps for the Sick (*Illustrated*). By David Paulson, M. D.

Practical Hints on Ventilation (*Illustrated*). By Paul Roth, M. D.

Good Health in the Family. By Mrs. Clara C. Hoffman.

Sterilized Milk and Cooked Meat May Cause Tuberculosis. By

D. H. Kress, M. D.

Haig on Fruits.

How a Neurasthenic Was Cured

Summer Diet for Children.

Give Us Fresh Air.

The Plague of Flies.

A Danger Spot in the Home.

THE WALKING CLUB: Oak Apples (*Illus.*), by Julia Ellen

Rogers; August Birds' Nests, by Belle M. Perry.

CHAUTAUQUA SCHOOL OF HEALTH: The Temperature of the

Body, by Dr. J. H. Kellogg, M. D.; Foods for Dietetics

(*Illus.*), by Lenna Frances Cooper; Sunstroke and

Overheating.

CHILDREN'S DEPARTMENT.

EDITORIAL.

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For War or Peace, Which?.....	.10
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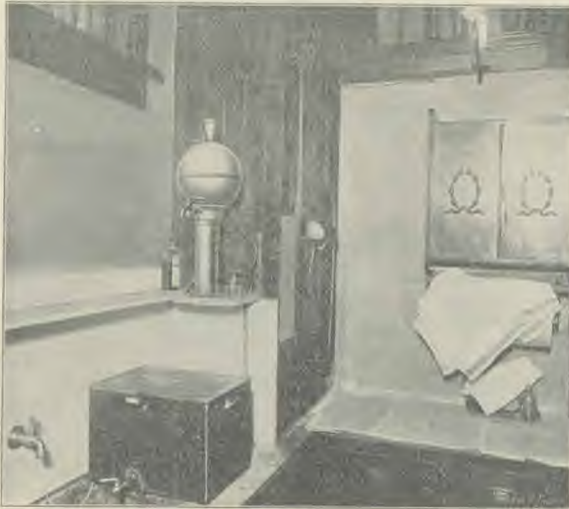
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* * * *

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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, \$40.00.

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, \$40.00 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
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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

A SANITARIUM IN THE WOODS



THE HINSDALE SANITARIUM.

massage, scientific dietetics, sun baths, and sensible health culture cure thousands of invalids where ordinary means have failed. Try the Battle Creek Sanitarium methods at the Hinsdale Sanitarium.

Send for illustrated booklet giving full information. Address,

HINSDALE SANITARIUM, Hinsdale, Ill.

ALTHOUGH this institution has been opened only since last summer, the management have already been compelled to build an addition, which will nearly double its capacity.

The Sanitarium is located in Hinsdale, one of Chicago's most delightful suburbs, on the Burlington Railroad.

Its grounds comprise sixteen acres of rolling land covered with virgin forest and fruit orchard.

A most ideal place for invalids, with full equipments for sanitarium work.

Open-air treatment, Swedish movements, hydrotherapy, electric-light baths

"Seal of Minnesota" Flour

This is the product of the choicest hard wheat, specially selected and milled with a view to making a flour of the HIGHEST POSSIBLE NUTRITIVE VALUE. It is largely used at the *Battle Creek Sanitarium*, which is a sufficient guaranty of its PURITY and WHOLESOMENESS.

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GOOD HEALTH

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The Menti- Cure

Is Christian Science a humbug?

No. Most certainly not. No absolute humbug could for years so hold the confidence of many thousands of intelligent men and women as so-called "Christian Science" has done. Error has no permanent power over the minds of men. Error charms, allures, leads from bog to bog like an *ignis fatuus*, but finally deserts its victims in a quagmire of uncertainty and despair. Truth, on the contrary, is eternal sunlight, leading ever on from peak to peak to the pellucid atmosphere of sunlit tablelands above the fogs and clouds of sophistry and the quicksands of uncertainty and confusion.

Error has in its chain strong links of truth, but, like every other chain, its strength is only the strength of the weakest link, not that of the strongest.



Here are some of the strong links in Christian Science:—

God is good.

God made all things.

A good God could make no evil thing.

Healing power is divine power.

All true healing is divine healing.

These propositions are all true. They can not be upset; for they are eternal verities. They were not recently discovered; they are as old as the hills, and as immovable as the mountains.

But there are some weak links in the Christian Science chain. Here are some of them:—

Since God made all things, and, being good, could not create evil, evil does not exist.

A specious error. The fundamental proposition is true, but not the conclusion. Here is the fallacy:—

Evil is not a *thing*. There are evil *things*; evil in general is not a thing, but wrong relation or relations of good things. It is the wrong use or application of good things that creates evil. God did not do this. Man creates evil, God does not. God made all things, but left to man to create good or bad relations in the right or wrong use of good things if he choose so to do. This is where evil came in. Evil relations of good things finally lead to such deterioration of things originally good that they lose their good qualities in whole or in part and become evil. This is the origin of evil things.

Based on the false conclusions above noted, is another weak link.

There is no such thing as disease.

Disease is certainly evil, but it may not be an evil *thing*. Pain is not a thing; it is a sensation. It is simply an excess of that which is normal and necessary and good.

Hunger is evil. Though certainly not a thing, it is very real and very distressing, though in a moderate degree necessary to appetite and to the enjoyment of food. Many a gluttoned millionaire would give half he is worth for the natural hunger which gave more pleasure to the simple fare of his boyhood than the most sumptuous feast can give without it.

When a man is sick, no new force is acting upon him or within him. Disease is not a thing which fastens itself upon a man or enters into him. The expressions which embody such notions of disease are relics of those dark days in the history of the race when men lived under the shadow of that terrible belief that the forces of nature, the gigantic powers which play in the thunder-storm, the tidal wave, the earthquake, the cyclone, as well as the mysterious agents which stealthily invade our homes in the pestilence, consumption, slowly destroying disease — that these powers and forces are but the operations of malign and furious agencies, demons or devils, which employ these means to vex and torture the world and its inhabitants. It is this belief which leads the idol worshiper of Alaska or of the Congo to beat a drum or a tom-tom to scare the devils off, or the Chinaman to burn incense, rockets, and fire-crackers for the same purpose.

It was this false belief that led the pope of Rome a few centuries back to fulminate a "bull" against the Turk, the pestilence, and the comet.

Science has taught us better things. The discoveries of the laboratory have exploded the myths which the doctors of the last century fought so furiously with leech and lancet, sickening draughts, and ponderous pills.

The forces of nature are friendly. They are the agents of our existence, essential to our lives. Disease is not a malignant entity. The forces acting in disease are the same as those which act in health. They are beneficent; they are kind; they are directed not toward the destruction, but toward the saving

of the body, although they are embarrassed by evil conditions for which, in most cases, the patient is himself responsible.

The overloaded beast may stagger and fall with its burden. So the bodily forces may fail in their struggle to overcome or remove the evil conditions which wrong habits or culpable neglect may have imposed.

This is the true philosophy of disease.

Modern science has banished the hoodoos and malignant entities of medieval medicine, and has shown us the kind hand of Him who made us, still working for us in sickness and disease as well as in health, binding up our wounds, creating new tissues to replace those destroyed by accident or worn out by use, guiding our functions while we sleep and while we work.

Disease does not exist as a thing. It exists only as a wrong relation. The attitude of the Creator is always the same toward His creatures. In Him there "is no variableness, neither shadow of turning." The wrong relation is man's fault. God is always healing, never destroying. "Evil shall slay the wicked."

There is a great healing power abroad in the universe always at work, limited only by the divine law of consistency, which permits healing only in harmony with that eternal principle, "Whatsoever a man soweth, that shall he also reap."

To suppose that this principle, as eternal as the stars, can be set aside by a formula, is as erroneous as to trust in the magical power of a fetish or an amulet. A chestnut in the pocket has as much power to cure rheumatism or to prevent it, as has a worn-out and exploded philosophy in the head. Both, however, may lead to a state of mental rest which is in itself conducive to health.

Worry opens the door to disease of all sorts. Kill worry, and the battle is half won. The famous "laughing doctor" of western New York cured his patients with bread pills and good cheer.

Here is one of the *strong* links of Christian Science. With a philosophy that will not hold water when tested by logical rules, though both *unscientific* and *unchristian* in its theories, it has nevertheless helped thousands out of semi-invalidism and despair into the cheer and happiness of health, by convincing them that disease is not a reality, but a myth, although, in fact, this is an error; for disease is as real as is health, or existence. Pain is just as real as comfort.

The Christian Science formula works very well in maladies which are chiefly or wholly dependent upon mental states, but breaks down woefully when organic disease comes up to be dealt with, such as a dislocated limb, a felon, a tumor, even an ulcerated tooth, an ingrowing toe-nail, or a corn.

It is very easy to say to the lady suffering from toothache, "Dear madam, your tooth does not ache. You are in error about the matter. There is no such thing as an ache; there is not even such a thing as a tooth. The thing you call a tooth is only an idea. The ache is simply a wrong thought; cast it out." But the toothache will sometimes not depart until it goes with the tooth.

So there is both truth and error in Christian Science. Whatever of strength and real success it has, is due to the truths which it inculcates. These are older than Christian Science, and will survive when this so-called science has been forgotten or is remembered only as a fad.

The true mode of cure, the rational and physiologic or natural method, recognizes the influence of mental states as a cause of disease, but not as the exclusive cause. The futile attempt to cover the whole ground by a single formula is not peculiar to Christian Science. It is the rock on which this pseudo-philosophy will ultimately go to pieces as others have done.

Menti-Cure Mottoes

KEEP SUNNY. Mental and moral sunshine depend more upon ourselves than upon our surroundings. One may make himself a source of light and sunshine — a veritable sun to his associates. A soul full of light may illuminate the darkest surroundings. Make sunshine for yourself and your environment.

DON'T WORRY; worry kills. No one was ever profited one whit by worrying. Worry is a fire which burns and destroys; but produces no heat. It chills, exhausts, wears out, and paralyzes. The only way to get out of the worry rut is to get into another mental groove. The mind must be occupied — intensely occupied — with something wholesome. It may be work, study, play, but it must be something all-absorbing, something intense, and the occupation must be continuous. Good, common-sense religion is a splendid help out of the worry rut. There is a world of good medicine in that splendid invitation, "Cast all your cares upon Him."

What's the use of worry, anyway? One can not in the slightest way help himself by worry. It's all a waste of energy. It's like a leak in a steam boiler; the escaping steam does nobody any good. It's like friction on the bearings of machinery; it does no work; it simply wastes energy and hinders work. Under the baneful influence of worry, the recuperative powers of the body are paralyzed, digestion fails, every vital function lags, disease flourishes, and death is invited. DON'T WORRY.

J. N. Kellogg

THE EFFACEMENT OF SELF

THE sweetest lives are those to duty wed,
Whose deeds, both great and small,
Are close-knit strands of an unbroken thread
Where love ennobles all.

The world may sound no trumpets, ring no
bells;

The Book of Life the shining record tells.

Thy love shall chant its own beatitudes
After its own life working. A child's kiss
Set on thy singing lips shall make thee glad;
A poor man served by thee shall make thee
rich;

A sick man helped by thee shall make thee
strong;

Thou shalt be served thyself by every sense
Of service which thou renderest.

—Mrs. Browning.

What the White Race May Learn from the Indian

BY GEORGE WHARTON JAMES

VI

CIVILIZED man, for centuries, has used hot baths of various kinds for remedial and healing purposes. Throughout the world, wherever hot springs are found, men and women congregate in large numbers, palatial hotels are built, bathhouses established, and an army of hotel-keepers, physicians, nurses, mas-

in spite of the physical ills that come from the altogether inappropriate diet of the hotel dining-rooms; in spite of the excitement of balls and parties, receptions and routs common at such places; and in spite of the damnable influences of the gaming tables too often maintained, the use of the waters is often



Fig. 4

seurs, and bath operators organized. Some go to the baths just as they do any other fashionable thing, or in order to mingle with the gay and fashionable throng. Other idlers go purely for the pleasure they gain from such associations, while still others go for the health they long for,—the strength and vigor they have lost. And there can be no question that they often gain it. In spite of the fashionable doctors who care less for the health of their patients than they do for their own fame and pockets;

beneficial to a number of the patients. Were they to use the waters rationally, live hygienically, avoid all stimulating foods and drinks, and religiously refrain from all unnatural excitements, there is no question but that the use of the hot waters, the hot mud packs, and the like, would give health to many thousands who now derive but little benefit from them.

From whom did the white race learn the use of the hot bath, the mud bath, and the like?—He learned it from the

Indian, and if he would study the present methods of the Indians he would find many details connected with these baths that he might learn to his great advantage.

When the Indian goes to the bath he makes of it an almost religious ceremony.

In Fig. 1 the old Shaman of the Havasupais is telling to the younger ones the things they should heed before going into the *Tokwoh*, or sweat bath, the frame of which (as yet uncovered) is close at hand. The hot waters that bubble out from the interior of the earth he regards as the special gifts of the gods. He prays that he may not use these gifts unworthily. Just as the Mohammedan believes that the desert is the "Garden of Allah" and that no one must walk in it who is sinful until he has first asked for forgiveness, so does the Indian believe that the waters of healing will turn to his injury if he does not use them in the right spirit.

Would it not be well if we—the superior race—approached this good gift of God in like manner?

The natural simplicity of the Indian at the baths also offers a good lesson to us. Instead of seeking for gaiety, frivolity, fashion, and the means of pampering his appetite, he goes to the baths of nature resolved upon quiet and restfulness as far as possible. He seeks to

prepare his mind beforehand, that the physical means used will be beneficial. In other words, though he is a rude, untutored savage,—so we say,—he has a clearer conception of the effect the mind has upon the body in real, practical healing, than has a large part of his civilized brothers and sisters. As a rule, we go to a physician, or to a sanitarium, or to baths—I mean those of us who are sick and desire health first of all—without any other thoughts than "I am sick. To go here may do me good. I hope it will." Instead of preparing our minds beforehand by thoughtfulness, getting ourselves into the proper mental attitude to be helped, we leave it to chance, to the surroundings, to the doctor, and thus often fail to get the benefit we might have received. We carry our business cares, our family worries, our money-getting, with us and thus defeat the end for which we go.

Nor is that all! When we get there we want "all the comforts of a home." In other words, we must be assured that we have a bedroom which we can lock up at night, a bedstead with a mattress as soft and unhealthy as the one we regularly sleep on, stuffy closets where we can hang our clothes,—and the rest.

The Indian finds his bedroom under the stars (Fig. 2). He puts the invalid flat on the ground,—a sheepskin, perhaps, between him and the earth, but that is all. When will the superior white race learn that rejuvenation of the body comes quicker to those who "shed" their civilization, forswear their home comforts, quit their indulgence in fixed-up dishes, refrain from social frivolities (commonly called duties), and first and foremost,—after throwing away all the cares and worries that come of being so highly civilized,—get to a place where it is possible to sleep out of doors *on the hard ground*, protected, of course,



Fig. 1

as the Indians are. Get into the woods, on to the hills, down in the canyons, out on the deserts. Take a roll of blankets along, and no matter what the weather, learn to sleep on the bosom of Mother Earth, out of doors. And if the region is one near hot springs or mud baths, all the better. Make it for the time being your home.

get near it, or careless visitors happen to call; where "social demands" are so great that children are relegated to the care of servants; where brothers and sisters scarce have time to know each other, and husbands and wives meet semi-occasionally—no, it is not a home of this kind. To most Indians "everywhere" is home (Fig. 4), provided there is a



Fig. 2

Ah! how wise is the Indian in his choice of a home. I have before referred to this, but I can not help writing of it again. Home! It is not a place of unrest to him where it requires the labor of wife and daughter, or a host of servants to keep in order; where polished furniture, polished floors, polished doors, polished mirrors, keep one forever with wiping cloth in hand, removing the marks of careless fingers; where bric-a-brac is accumulated and piled everywhere to the shattering of nerves if the children

little shade, water, and grass for his burro or pony. In the mountains, where he can shelter under an overhanging rock, or in the forest where he has a roof of emerald, supported by great pillars of pine or cottonwood or sycamore,—there is home. In the desert, where the roof is millions of miles high, decorated with suns and moons and stars and comets and meteors and Milky Way and countless nebulae; and the walls are bounded on the east by the rising sun and on the west by the setting sun, and

God's own laboratories make new, fresh, pure air every moment — there is home.

The San Francisco disaster, as Dr. Kellogg well said in his recent editorial, taught thousands of people the healthfulness of the outdoor life. People who had been ailing for years, puny children, anemic youths and maidens, dyspeptic parents, all "picked up" appetite and health when compelled to live in the parks and on the streets.

Let us heed the lesson. Let us follow the example of the Indian and be more simple, more natural. Let us relegate to the museum the collecting of curios and bric-a-brac and the thousand and one things that so crowd our houses as to make museums rather than homes of them.

But to return to the hot springs. The Indian has always used them. He also learned and bequeathed to us the knowledge that mud is a useful therapeutic agent. The Yumas, Mohaves, and others who live near the banks of the Colorado River are in the habit of regularly plastering down their hair and scalp with mud (see Fig. 5). They go where it is clean and fresh,—washed down by the rushing waters of the mighty Colorado through the great canyons—and, rubbing it well into their hair, they cover it over with a cloth tied over the scalp and go on about their daily work. They keep the hair thus covered with mud for a day or two and then wash it off and give the scalp a thorough cleansing. What is the result? Whether the fact be a result from the use of the mud or not, it is a fact that these river Indians have long, glossy black hair free from all disease, and their scalps are as healthy as the hair. They have no dandruff, no falling out of the hair, and do not need any hair tonic or dye. The mud contains enough of the finely ground sand commingled with the softer silt to make a

healthful mixture for gently exciting the scalp when the rubbing off and cleansing process takes place. And covering the hair with the mud as well as the scalp and allowing it to dry on demands that the hair shall be well rubbed as well as the skin. The effect is to clean the hair thoroughly, and who knows but that the excitement generated by thus rubbing the hair as well as the scalp has



Fig. 5

something to do in promoting the healthful flow of the elements required for hair nutrition? Be that as it may, I know the fact, which is that these Indians, men as well as women, have hair, long, black, glossy, reaching down to their waists, and they attribute its healthfulness to the regular use of the mud pack and rub.

Now, while we may not care to pack the hair in mud, we can certainly utilize the idea. I have done so for years. I often give my scalp and hair a mud bath, and it is both agreeable and exhilarating, and I had the assurance a few months ago from one of the leading scalp specialists of the East that my scalp was in

an absolutely healthful condition — one of the very few found in such condition in the large eastern metropolis.

The Indian also uses mud—and by this I mean the clear, pure, uncontaminated earth and sandy mixtures found in the rivers of the desert west — for wounds. There is little doubt but that he learned this from the animals. Who has not seen a dog, after a fight in which he got worsted, run and throw itself into a mud puddle? Many years ago—about twenty—I read an account of a battle between a wildcat and a dog, and the writer, who saw the conflict,

has got some ugly scars along his sides and flank. Observe, that overheated as he is, he does not rush into that clear stream. He takes his bath in that shallow spring with a soft mud bottom. Note how he plasters himself, laying the wounded side underneath, and then sitting down on his haunches, buries all the wounded parts in the ooze. That mud has medicinal properties. The dog knows it. No physician could make so good a poultice for the wounds of a cat's claws as this dog has found for himself. Pray, if you had been clawed in that way by either feline or feminine, would you

have found anything at the bottom of your book philosophy so remedial as this dog has found?"

The Indian's use of mud, therefore, is seen to be an inheritance as the result of his observation of the animals. Since the time I heard of the dog and wildcat fight I have had occasion to watch the Indians many

times. I have used the mud with them and always with good results. And if, when, some three and a half years ago, I was bitten on the thumb by a rattlesnake, and for a week was supposed to be hovering between life and death, I had thought enough to have done as the Indians do,—gone and put my hand and arm in a mud bath at the side of a stream or at the bottom of a shallow spring, I should



told how the dog went and bathed himself in mud thereafter. The brief sketch made such an impression on me that I knew just where to find it, and I have hunted it up and am now going to copy it for the benefit of my readers. It will help explain why the Indian does the same thing. He has observed the animals bathing in the mud, when wounded, as this dog did.

"The dog has won the battle; but he

have fared as well as I did (and perhaps better), though I had two skilled physicians, an accomplished professor, and a devoted nurse to care for me.

And when I was supposed to be well again,—months afterward,—I found that the deadly poison had in some way lodged in the lining of the stomach so that, at times, it would cause a nervous and muscular disturbance that made me suffer intense agony. I then recalled the use of mud by my Indian friends and I hid me away as speedily as I could to the hot mud baths of Pass Robles in California. There the sulphur water at a temperature of over 110° Fahrenheit comes bubbling into a great wooden tank filled with the soft, velvety mud, black as ink, of the tule marsh. Into

this tank I stepped and gradually worked my way into the mud, lying down in it, and wriggling and working my body until I was as near covered as I could be. I brought great armfuls of the hot, soft, and soothing nature poultice over my stomach and body, and then lay there as long as it was wise to do so. What mattered it that I was blacker than a negro when I came out. Two minutes with a bucket and a hose and I was cleaner than ever. One week of these baths and I lost the poison, never again to return. I never think of Pass Robles and the mud baths there without a deep sense of gratitude that some of us at least, have learned how to utilize some good things that the Indian has taught us.

(To be continued.)

WHATEVER takes the mind out of itself, causes it to look up, interests it in the great truths, helps the body, too.—*J. Freeman Clark.*

“CIVILIZATION is a curious thing. It is supposed to improve the morals of mankind; yet it finds a primitive people without prisons, and the first thing it does is to erect a jail.”

A HEALTHY man needs no artificial excitants; the vital principle in its normal vigor is an all-sufficient stimulus; the inspiration bought at the rum-shop is but a poor substitute for the spontaneous exaltations of a healthy mind in a healthy body.—*Felix Oswald.*

A RECENT German writer says: “The lark goes up singing toward heaven; but if she stops the motion of her wings, then straightway she falls. So it is with him who prays not. Prayer is the move-

ment of the wings of the soul; it bears one heavenward; but without prayer we sink.”

God has lent us the earth for our life. It is a great entail. It belongs to them who are to come after us, and whose names are already written in the book of creation, as well as to us; and we have no right, by anything that we do or neglect, to involve them in any unnecessary penalties, or to deprive them of benefits which it was in our power to bequeath.—*Ruskin.*

THE man who gives himself entirely to the service of his appetites makes them grow and multiply so well that they become stronger than he; once their slave, he loses his normal sense, loses his energy, and becomes incapable of discerning and practising the good. He has surrendered himself to the inner anarchy of desire which in the end gives birth to outer anarchy.—*Chas. Wagner.*

God's First Temples

"The groves were God's first temples. Ere man learned
To hew the shaft, and lay the architrave,
And spread the roof above them — ere he framed
The lofty vault, to gather and roll back
The sound of anthems; in the darkling wood,
Amid the cool and silence, he knelt down,
And offered to the Mightiest solemn thanks
And supplication.



Ah, why
Should we, in the world's riper years, neglect
God's ancient sanctuaries, and adore
Only among the crowd, and under roofs
That our frail hands have raised? Let me, at least,
Here in the shadow of this aged wood,
Offer one hymn — thrice happy, if it find
Acceptance in His ear."

—Bryant.

The Ex-Invalid at Home

BY KATE LINDSAY, M. D.

THE term "Ex" prefixed to any name or title indicates what has been, also what is not now. When applied to the invalid condition, it implies a past state of illness which has been recovered from with immunity from all its suffering and hindrance to work or the pursuit of happiness in any direction. How the family and friends of the ex-patient rejoice when the father, mother, son, daughter, or other long-invalided member of the home recovers from some serious illness and is able once more to fill his wonted place in the family circle.

The Ex-President, Governor, or other past official may mourn over the past, and long for the vanished splendor of high position, but the ex-invalid will never seek to recall his aches and pains, sleepless nights, and dark, weary days of doubt and despondency, when despair, like a gloomy spectre, always hovered near, and the three chief Christian graces—faith, hope, charity—were lost sight of; when the good Father in heaven appeared only as a stern, unbending, merciless Judge and executioner, and his brother-man hard-hearted and unsympathetic. Every one was selfish and unwilling to help the unfortunate neurasthenic, dyspeptic, or other habitual invalid by listening to the long-drawn-out tale of symptoms and special bad feelings. The privilege of putting this little two-lettered prefix "ex" before the word invalid! What a thrill of gladness one must feel to know that all those morbid feelings, those dismal spectres of Providential partiality and injustice, and his fellow-man's lack of brotherly love and care, were but the phantoms of his own disordered brain,—the result of damage done to his bodily

structures by wrong relation to his environment; that in his surroundings he saw but the reflection of his own morbid imagination. In the home life the chronic invalid is so often the center around which all the family activity must revolve. Often with a hypersensitiveness of feelings which demands that every member shall conform to his narrow, invalid views of life, the sick one in a family has dwarfed and hindered the purpose in life of every other member. When they become ex-invalids, however, they cease to be vampires destroying the ambitions of the other members of the family.

The hard toiling bread-winners (there is usually one in every ordinary self-respecting family, often, but not always, the husband and father, sometimes the mother or a willing son or daughter), with the invalid recovered, feel that they may be able to save something. The home so long desired may be purchased, or younger members of the family may be helped to an education and so started well in life. In cases where the illness was the result of overwork or over-devotion to a mistaken sense of duty, even, the invalidism is demoralizing, and often results in the acquirement of invalid habits. If the mother is ill, the home life is more deranged than by the disease or crippling of any other member. The children, left to their own devices, often drift into bad company; and it does not take long for a peevish, self-centered invalid to lose the respect of her growing sons and daughters.

The ex-invalid at home often needs to reinstate herself again in her place at the head of the family. The husband

and sons must be won from clubs and from other outside influences more or less demoralizing. The growing daughters perhaps need to be brought to appreciate her worth and wisdom as a counsellor in all that pertains to the growth and development of womanliness. She should strive to be to them in life and influence a worthy ideal. Her invalid days of suffering should not be without results for her good and the welfare of others. She has learned the one important lesson, that disease and suffering do not come by chance. Neither are they due to the will and purpose of a kind heavenly Father, but are the direct results of the transgression of law, and in most cases spring from easily avoidable causes.

The Scriptures teach plainly that it is the will of God that all his children should "prosper and be in health," and it is just as plainly taught that it is for lack of knowledge the people are destroyed. Experience both in acquiring illness and getting well again makes the ex-invalid an especially useful member of the family. Nothing teaches wisdom like experience, and the lessons of experience wisely learned and applied may help others to avoid becoming invalids and wasting a portion of their life. One of the first of these lessons is to appreciate the principle that whatever measures helped the invalid to reach the happy state of an ex-invalid will prevent himself and others from becoming ill again or acquiring illness at first,—the all-important lesson of how rightly to use Nature's remedies.

If man had always breathed air clean and pure, and free from human excrement, the army of over a million victims of the white plague would be replaced by robust men and women. The ex-tubercular patient has learned the need for pure air, and that outside

air in cold or hot weather is always the best; that out-of-door life cures lung disorders by increasing tissue, vigor, and improving the general health; that out-of-door sleeping is just as good for the anemic, dyspeptic, the neurasthenic, or any other chronic invalid as for the tubercular patient; also that it is wiser to live outdoors and prevent consumption than to wait for the onset of the disease and then try to cure the disorder by an out-of-door life. The ex-tubercular invalid, by care to destroy all expectoration and to keep his person, clothing, room, and surroundings clean, may be a living example of how mankind may avoid injuring one other or imparting their infections to their friends by strict regard of the law of sanitary cleanliness. Truly, every ex-tubercular invalid at home or elsewhere, ought to be a missionary to his brothers and sisters who may be suffering from the white plague. Not so much should he preach, as practise, the gospel of Rational Sanitation.

And then there is the great army of nervous invalids, who are more or less the victims of wrong habits of thought and morbid imaginations, as well as bad habits of working, eating, drinking, and sleeping. They are afraid to take a normally brisk walk, assume any responsibility, or think any normal thought about life and its activities; they wear themselves out in the wasteful endeavor not to put themselves into normal relation to their surroundings, and to protect themselves from the supposed baneful effects of the work incident to normal life. Such an ex-invalid in the home should be a wonderfully efficient health missionary and be able to minister to other timid, fearful, nervous invalids. He should be expert in the science of rational mind cure, and be able to impart hope to the hopeless, faith to the doubter.

courage to the timid. He, of all others, can appreciate the slavery of morbid mentality, also the therapeutic effects of normal thinking. He can spread the contagion of mental and physical health and bring sunshine into the home and to other nervous invalids. By healthy thinking and acting, he can create a healthy atmosphere wherever he goes and make the world brighter and happier for his having lived in it, leaving "footprints on the sands of time" that will help other nerve-disordered victims to get well and to avoid becoming chronic nervous invalids.

The fact that any one has been an invalid, and now belongs to the army of ex-invalids cured by natural methods, should lead to an increased feeling of responsibility and debt in the one thus healed. He should feel that duty demands of him a faith and practise to correspond, a thankfulness for the knowledge which helped him out of invalidism and into health again. In the home, the science and art of hygiene properly applied is just as potent in preventing disease and lowering the death-rate as

was the same science applied to the Japanese army or in protecting the government employees working on the Panama Canal.

Destroy the mosquitoes which carry the yellow fever or malarial infection, and these disorders cease to afflict the people.

The aseptic hospital is free from hospital gangrene, and no patients die from blood poison.

Feed infants on normal natural food and hundreds of thousands of babies will be saved yearly from bowel disorders.

The ex-invalid in the home is an example of cure by natural therapeutics. He can fully repay himself for the suffering he has endured in the dark days of his illness, and all care, expense, and anxious thought that he has caused his family, by being a practical health missionary in his every-day life at home. Invalidism recovered from means reformation, and the sure evidence of a true reformation is a reformed after-life; so the surest evidence of genuine ex-invalidism is a healthful life rationally regulated afterward.

Some Natural Remedies for the Relief of Headache

BY LINDA M. ROTH, M. D.

IN order to make an intelligent application of any remedy for the relief of physical suffering, it is necessary to have as good an understanding of the conditions present as it is possible to obtain, and this is just as



Cold compress to the head

true if one treats himself as it is if a physician is called in. But how many people suffering from pain of any kind are willing to give themselves a thorough looking over to learn the cause of the difficulty? The majority of mankind thinks only of immediate relief, no matter how secured, and it is largely due to this fact that such vast numbers of people are becoming slaves to morphine, cocaine, and a variety of drugs of this description.



Leg pack

Few realize the terrible thralldom entailed by the use of these unnatural remedies, and if the world could be made to know and appreciate the incalculable harm resulting from their employment, there would be far less call for morphine and other "cures."

Headache, like many other pains, is only a symptom, and not a disease. Back of it there is always a cause, and measures should be directed toward its removal, as far as possible. However, the course pursued by the majority of those suffering from headache is far from this rational one. Instead of endeavoring to treat the cause, their efforts are directed only to the removal of the pain, and that in the quickest possible way. This leads to the use of the numerous "headache powders" found on the market. Their employment is pernicious in the extreme, as their effect is due to their benumbing action upon the nerves. Many of the recent medical journals contain warnings against the use of this class of patent medicines, as they are probably subject to more abuse than any other. The great danger lies in the fact that the chief ingredient of these "powders" is nearly always acetanilid. Warnings against overdose

are rarely placed upon the labels, as this would alarm the public, and prevent their sale. But overdoses of this drug produce very serious, sometimes even fatal, results. The chief symptoms of acetanilid poisoning are collapse and circulatory depression, coldness and



Leg bath

blueness of the skin, superficial breathing, dullness of intellect or total unconscious-

ness, followed by persistent muscular weakness. In addition there is a most disastrous effect upon the red blood corpuscles which so change their composition that they are rendered incapable of carrying oxygen. As "the blood is the life," this drug attacks the very foundation of the vital forces. How unreasonable it is, then, to seek relief for one form of illness only to subject oneself to the danger of falling into a worse condition.

All headache powders do not contain



Cooling the surface after leg pack

acetanilid, but they do contain drugs which, while perhaps not so dangerous, may be decidedly injurious, and should never be employed without the advice of a physician.

There are many kinds of headaches, arising from various causes, but we will consider only the most frequent and suggest some remedies which are not only rational, but also so simple as to be successfully used in the home.

We will first consider the congestive headache, characterized by a flushed face, throbbing vessels, and a sensation of fullness in the head. It is due to an abnormal amount of blood in the brain, and anything which will diminish this quantity will be helpful. As all the blood in the head has to enter through

vessels passing up the neck, by contracting these vessels, less blood will enter the head. This is readily done by the application of a very cold compress around the neck, or by ice-bags to the back and sides of the neck, and to the top of the head. In many cases this will be sufficient to give relief, but in more severe cases the amount of blood entering the brain can still further be diminished by hot compresses to the face, thus diverting the blood into an area where it does no harm. Both the hot and cold compresses should be continued for twenty to thirty minutes.

We can still further relieve the congestion of the head by diverting a large amount of blood into the lower extremities by applications of heat. A hot foot bath, or, still better, a foot and leg bath extending to the knees, may be taken at the same time as the application to the head. The bath

should be finished by a dash of cold water over the heated surfaces to prolong the effect of the treatment.

A still more efficient treatment is the hip and leg pack, applied as follows: On a bed or cot, place a blanket in such a position that when the patient is lying down, it will extend from the waist to beyond the feet. Wring another blanket from very hot water, place it over the first one, have the patient lie down upon it, and wrap it about the hips and legs. Cover snugly with the dry blanket, and cover the patient to keep the rest of the body warm. The heat of the pack may be intensified when desired by a hot bag to the abdomen and another to the feet. At the end of twenty minutes, remove the hot blanket and cool the

surface by spreading over it a linen towel wrung from cold water, rubbing vigorously to secure good reaction. The front of each leg should be treated, then the back. These measures will seldom fail to secure immediate relief from the congestive headache.

The toxic headache is due to poisoning from various sources, but the most common is probably the alimentary canal either from stomach or intestinal constipation. The first thing to do for this is to cleanse the bowels by a thorough enema. Then the patient should be given some sort of sweating procedure, either a cabinet bath for twenty minutes, or a hot full bath for five to ten minutes, then wrapped in blankets and allowed to sweat for twenty to thirty minutes. Or the patient can be given a hot foot bath, then wrapped in a sheet wrung from cold water, and covered very warmly with several blankets, remaining in this till profuse perspiration is produced. The patient should drink freely during and after these treatments; and cold compresses frequently changed must be kept around the head and neck.

On removing the patient from any of these sweating procedures, the skin should be cooled either by a cool sponge bath, a rub with a towel wrung from cold water, or by some other cooling measure. The patient should abstain from solid food for twenty-four hours, drinking freely of water and fruit juices. An abundance of fresh air and deep breathing are also essential.

Preventive measures are, however, even more important in these cases than curative remedies. Careful regulation

of the diet, an abundance of exercise and fresh air, regulation of the bowels, and the moist abdominal bandage worn at night, will often prevent further attacks.

The neurasthenic headache is coming to be very frequent among those suffering from the strain and nerve exhaustion of modern life. This is frequently a sensation of pressure in the back of the neck or top of the head, or sometimes of a band around the head. The im-



Sweating pack

provement of the circulation in the brain will often afford immediate relief. This can be accomplished by the alternate application of heat and cold to the head. Apply a hot fomentation or a hot bag to the back of the neck and at the same time cold compresses to the face, changed every half minute for three minutes. Then reverse, applying frequently changed cold compresses or an ice bag to the back of the neck, and a hot fomentation to the face for three minutes. Several alternations can be made, ending, however, with the cold to the back of the neck, and apply a cold compress to the face for a half minute following the fomentation. A hot foot bath given at the same time is also very helpful, but complete mental and physical repose are also necessary.

Migraine or bilious headache, though largely of nervous origin, is frequently precipitated by fatigue, errors of diet, lack of fresh air and exercise, so that attention to these points will often prevent the attack. For relief, cold compresses to the head, the hip and leg pack previously described, liquid diet for twenty-four hours, and rest, with plenty of fresh air; are usually successful in aborting these headaches. Frequently these headaches are the result of poisoning from the retention of fecal matters in the colon. This is, in fact, the most frequent of all causes of headache and so-called biliousness. Constipation is nearly always present at the beginning of a bilious attack. This fact points unmistakably to the need of colon cleansing by an enema of soap-suds at the very outset of treatment. In many cases lavage of the stomach by means of the stomach tube is also necessary.

Many of the headaches for which no

definite cause can be at the time discovered are often due, we believe, especially during the warmer months, to nothing else but an insufficient amount of water in the blood. It is surprising how quickly such headaches will disappear after copious water drinking at intervals of ten to fifteen minutes. This simple remedy is best resorted to between meals only, at any rate not for one or two hours after a full meal.

To some it may not seem worth while to take the trouble to treat headaches in the ways mentioned, when it is so much easier to swallow a powder. But to those who respect their bodies and wish to preserve them in the best possible condition, the taking of poisons such as are found in headache powders will be out of the question. To such, these suggestions may be helpful, though they are the ones who suffer least frequently from such afflictions.

DR. WALLACE, an eminent English authority, says with reference to mastication: "The beneficent results of mastication *can not* be got by trying to go through the process if the food is not fit for mastication. It is therefore useless to tell patients that they must masticate their food without at the same time prescribing food which can be, and in fact requires to be, thoroughly masticated."

The above instruction of Dr. Wallace is wholly in accord with sound experience. It is unnecessary, however, that foodstuffs should be coarse, tough, or fibrous. The mastication of soft bread is extremely difficult, since the soft crumb tends to form itself into small dough pellets, which resist for a long time the action of the digestive fluids; besides, the moisture present in the

bread prevents the abundant flow of saliva which is necessary for the digestion of starch. If, however, the bread is toasted dry throughout the whole thickness of the slice, it requires thorough and careful mastication, and its dryness stimulates to the highest degree the flow of saliva.

A LITTLE girl who had just returned from church, was asked what the text had been. She replied, "I keep my soul on top." The father did not remember such a text, and inquired where it could be found. Eagerly the child took her Bible and pointed out the well-known passage where the apostle says, "I keep my body under." That child was a born commentator of the right sort.—*Ram's Horn*.

A Torrent of Mixed Drinks

“WINE, wine, everywhere, but not a drop to drink,” was the order of things recently at Boundary Castle, Washington, when the contents of the famous wine cellar of its owner were thrown into the gutter where they belonged. Alcohol is the product

A few years ago Mrs. Henderson's attention was called to the Health movement, and the evils which it was endeavoring to combat. She began a thorough investigation, bringing to bear upon the study all the powers of her cultured mind, and the exceptional



Boundary Castle

of decay, and, as such, is quickly disposed of by nature, when it is not distilled and bottled by man for the gratification of an unnatural appetite.

Boundary Castle, situated on the heights overlooking the city of Washington, is the home of John B. Henderson, former senator for Missouri. Mrs. Henderson has long reigned as a society queen, and her magnificent home has been frequented by the élite of Washington, both political and social, and by prominent persons from all parts of the world. It has been the scene of lavish entertainments and bountiful repasts.

opportunities for observation and information afforded by her position and contact with the leading people from all parts of the world.

Of the results of her investigations, Mrs. Henderson says: "I took to studying hygiene, and that subject kept getting mixed with many other subjects. The more I studied physical culture, the more it seemed primarily connected with every kind of success on earth. It even got mixed up with religion. What are the chief causes of good or evil tendencies? Now, the very first rule of physical culture is this: 'Don't poison

yourself.' To poison oneself is to poison every source of worthy thought and action."

It is hardly necessary to state that flesh food of all kinds, being a prolific source of tissue poisoning, was soon entirely eliminated from the menus served at Boundary Castle, not only for the family meals, but at the most elaborate entertainments.

That it is not necessary to set laid-out corpses before one's guests for their consumption in order to entertain them, has been abundantly demonstrated at Boundary Castle. A satirical Englishman once remarked that the nature of our entertainments was due to our lack of culture, and that it was largely because we have nothing else to give our guests that we satiate them with victuals. Among Mrs. Henderson's distinguished and cultured guests, "the feast of reason and the flow of soul" predominate. "We have found," she says, "that pleasant people seem to care more about meeting other pleasant people than what they have to eat and drink, so long as something wholesome is provided."

Not "meat substitutes," but those natural foods for which meat has been substituted are prepared in a variety of appetizing ways by Mrs. Henderson's famous English vegetarian chef. The vegetarian dinners have been enjoyed by nearly every statesman and diplomat in Washington. The following representative menu was served to twenty-four distinguished men attending the National Society for the Prevention of Tuberculosis:—

Fruit Soup

Mock Salmon, Sauce Hollandaise, Cucumbers

Unfermented Concord Grape Juice, mixed
with Apollinaris

Artichoke Cups and Asparagus

Broiled Slices Pinenut Protose, Nut Sauce

Unfermented Catawba Wine

Eggs a la Villeroi, Mushrooms

C. C. Protose Timbale, Tomato Sauce

Grape Fruit and Cherry Salad Cheese Soufflé

Iced Fruit Gelée Kellogg Gelatine

Mock Coffee

The results of Mrs. Henderson's researches are embodied in her book, "The Aristocracy of Health," a remarkable work touching the vital points of all questions relating to health and temperance, which has already been the means of leading some prominent educators to investigate for themselves. Her object is to promote a movement in behalf of hygienic and temperance reform among the class of society of which she is a member.

Both Mr. and Mrs. Henderson became strong advocates of temperance. Mrs. Henderson became a member of the Independent Order of Rechabites, and a tent of that order was named after her husband. At that time their well-stocked wine cellar contained over a thousand dollars' worth of costly beverages. "I began to think it a pity," says Mrs. Henderson, "that young men and women should be treated to the temptations of a dram-shop every time they attended a social function." So the wine cellar was locked three years ago.

Previously to that time Mrs. Henderson had been accustomed to serving wines and liquors, supposing "that people in general were not physically strong enough fully to enjoy themselves at dinner without something in the way of a poison stimulant." "We have since found," she says, "that people do not miss it at all. People are not so physically degenerate as we supposed."

The problem then to be solved was, what disposition should be made of the dram-shop in the cellar. Concerning



Mrs. John B. Henderson

those locked-up bottles Mrs. Henderson reasoned: "Should I give them away to those who have not yet arrived at my state of thinking? That is no better than to serve them oneself. Should I send them to a hospital? The new school of medical practise is more and more in the way of hygienic methods, and less and less in the way of drugs. Should I sell them? What in all this wide world could be more abominable than to give a person the right to poison his neighbor for a money consideration?"

A meeting of Rechabites was called, and the contents of the wine cellar placed at their disposal. It was at once moved that a committee of six members from Henderson Tent, and six from

Onward Tent, of which Mrs. Henderson is a member, should be appointed to break the bottles and let the contents flow into the gutter. The rule of the order against touching and handling the pernicious stuff, being introduced by a straight-laced member, was promptly suspended for the time being, and the gutters were soon being flushed by a stream of ruby wine while the surrounding atmosphere was redolent of the perfume of the rare old liquors. These enemies of strong drink kept at their work of destruction until the last decanter was broken and the last drops had drained off into the sewers. Not until the demolition was complete did they return to Boundary Castle, where they were entertained by Mrs. Henderson.

Lying Passive

BY HELENA H. THOMAS

THE sun never shone on a bride who more fearlessly and hopefully promised the words, "for better, for worse," than when Marie voiced them, for to her the untried future appeared all *couleur de rose*.

After a few short blissful months, however, the young wife was thrown from a horse and received such injuries that the physician, for a time, gave little hope of her recovery; but a wearisome wait resulted in the verdict, "She is on the road to recovery, but her hip is so injured that she will be a cripple for life."

This so relieved the overwrought husband that forgetting the caution of what seemed to him years, he rushed to the invalid's room, and, dropping on his knees by the side of her bed, wept uncontrollably before he could reply to

her startled queries. Then he said, brokenly:—

"Oh, darling, forgive me for exciting you, but I am so happy I could not control my feelings!"

"Happy to think that you are to walk through life with a cripple, Roger! while I—I pray to die!"

The devoted husband endeavored to assure the sweetheart of his boyhood that life with her, under any conditions, was all he desired. Still, she shook her head, saying, in a tone of bitterness:—

"It is cruel! I never can feel reconciled to it. I had nothing to glory in except my graceful carriage, and now a horrid limp is my brightest outlook! And you, who know how sensitive I am, rejoice that I live!"

Consequently, the anniversary of her glad bridal day found Mrs. Forsythe

slowly coming back to life that now seemed to her not worth the living, in spite of the fact that she was love-sheltered as never before.

Roger Forsythe was indulgent to a fault, however, else he would have put forth greater efforts to arouse his dejected wife to self-forgetfulness. But, when urged by her physician to do so, he would make answer:—

"I haven't the courage! It breaks my heart to meet her pleadings to be let alone."

Marie had been active in church work, so-called, before her injury, and being an accomplished organist, her services were greatly missed, but her pastor's assurance that her return to preside over the organ was impatiently looked forward to was met,—as were the pleadings of her physician to exert herself to ward off chronic invalidism,—with apparent indifference. But when the former had left, she would sob in so anguished a tone that her husband wept in sympathy.

"Do they think that I, who, to use your own words, Roger, used to go to the organ with 'the carriage a queen might envy,' would so humiliate myself as to face the pity of old friends? Never! I will remain right here in self-defense, first."

This was the situation when Marie Forsythe's brother in an eastern city received a letter from his brother-in-law, who, after stating the case, wrote:—

"Can you make any suggestions? If so, I will carry them out, if possible."

The brother lost no time in suggesting a change of scene, and at the same time he wrote to his sister urging her to visit him. He wrote, too, that he understood how she would shrink from meeting people, in her nervous condition, and assured her that she would be more shielded in his home than elsewhere.

Greatly to the surprise and delight of her husband, the semi-invalid seemed anxious to be off, but on their way she said, in a bitter tone:—

"Thank fortune! Those about me will not be contrasting this hateful limp with my old-time carriage!"

At first Mrs. Forsythe shrank from going out or seeing people (after her husband had returned to his home duties), but soon her tactful brother so lifted her out of herself as to interest her in those less fortunate. So, at last, the interview was brought about.

"Now, Marie," urged he one morning, when he judged from the tear-stained face of his sister that her ever-present cross was still unbearable, "I want to introduce you to 'my sunbeam,' as I call her, for it is to her I look for fresh inspiration when my hands hang heavy—a lady who was once the finest organist in our city."

At first his sister urged that she was in no condition to meet strangers, but soon they were on their way to the home of the "sunbeam," of whom she thought, "Her patience has likely never been tried as has mine!"

Her brother, however, did not explain the situation beyond the puzzling caution, "Avoid offering to shake hands," just as they were ushered into the room where a sweet-faced woman, without moving head or hand, smilingly greeted them with—

"It is so kind of you to bring the much-talked-of sister to see me."

"Why, it would have been selfish of me to deprive her of my sunbeam's rays," was the laughing rejoinder.

So the embarrassment of the meeting was bridged over by cheery chat until the thoughtful brother arose, saying, "I will leave you two musicians to talk of a much-loved theme, while I visit a very sick parishioner."

"Then, when alone, Miss Heaton said, with a merry laugh, looking down at the poor shapeless hands: "It must require a stretch of imagination to think they ever made music." Then, glancing toward an organ, she queried, "Won't you play for me, dear?"

Mrs. Forsythe could not refuse the pleading request, and, for the first time since what had seemingly wrecked her life she seated herself before an organ, and soon she half forgot her surroundings.

"I will not urge you to play more to-day," said Miss Heaton, tremulously, "but your playing touched so tender a chord that I could not keep back the tears, something I seldom indulge in."

"Seldom!" exclaimed Mrs. Forsythe impulsively, as her eyes once more tried to grasp the situation—abject helplessness. "Why, if I were so afflicted, I would weep continually!"

"No, you wouldn't," was the laughing reply, "for it is anything but a luxury to weep when one's hands are powerless to wipe the tears away!"

Then, when she could sufficiently control herself, Mrs. Forsythe opened her heart as she had not to another, ending brokenly:—

"How do you bear your dreadful cross when I rebel so over mine, which is trifling in comparison?"

"Why, dear, I do not bear it!" was the earnest reply, "but let me tell you how it all came about. You say that your graceful carriage was once your pride. Just so these poor distorted hands were once mine; but one night after I had given a recital, I returned home much heated, and after thoughtlessly throwing myself on a sofa I fell asleep and awakened in a chill.

"That was the beginning of what brought me to so helpless a condition that I now have control only of my

eyes, tongue, and muscles of the face. But I did not rebel even when my lower limbs were well-nigh useless, for I was thankful so long as I could make music. However, when, little by little, my hands were drawn out of shape and my case was pronounced hopeless I rebelled as no child of God has a right to."

"But how could you help it!" cried the tearful listener. "It was surely beyond human endurance!"

"Yes, dear," was the smiling rejoinder, "and my eyes were then too tear-blinded to see the Comforter, until one day my brother, who was lifting me, said: 'Now, sister, if, instead of trying to help yourself you would just lie passive in brother's arms, it would save you much pain.'"

"Simple and natural words they were, but through them I was led to see that my rebellion, alone, had made my cross unbearably heavy. I saw, too, that my dear elder Brother was able to lift me above it all if I would but lie passive in his hands."

"Was that the end of your rebellion?" was the low query.

"No, it was not easy to lie passive at first, but each rebellious struggle so added to my misery that it ended in a fresh determination, until I gave up my will to His, and then all was rest, perfect rest. True, I am never free from torturing pain; still, I am scarcely conscious of it, so closely do the arms that will not let me go enfold me."

This acquaintance was such an inspiration to Mrs. Forsythe that a little later she wrote her pastor:—

"I will be in the dear home church next Sunday, and if my place at the organ is still vacant, I shall be more than glad to occupy it. My cross has not outwardly lessened, but I am learning to lie so passive in the Everlasting Arms that I scarcely heed it."

Traps for the Sick

BY DAVID PAULSON, M. D.

Superintendent of the Hinsdale (Ill.) Sanitarium

EVIL dies hard. It is startling to observe how soon after a withering curse has apparently been destroyed down to its very roots, it will insidiously reappear under a new guise. For instance, this generation is supposed to have witnessed the complete crushing out of human slavery, when, lo, we find right in our midst nearly one million of the most abject slaves to such habit-producing drugs as morphine, opium, and cocaine. A more nerve-racking spectacle can hardly be conceived than that presented by one of these sad victims twelve or fifteen hours after he has had the last dose of his accustomed drug. Human words are utterly inadequate to describe the agony and distress of these pitiable nervous wrecks.

Last year there was used in this country practically the equivalent of fifty grains of opium for every man, woman, and child in our land, as compared to twenty-eight grains per capita in supposedly opium-cursed China. These figures demand the most earnest consideration from every one who genuinely loves his fellow-men and who earnestly desires the future welfare of his country.

The scriptural admonition, "Train up a child in the way he should go, and when he is old, he will not depart from it," is being echoed and re-echoed in Christian homes. Yet how frequently when the child protests by its cry of pain against an unnatural and unhygienic dietary and other unphysiological treatment, the mother or nurse fails to institute thoroughgoing measures to ascertain their real significance. It is so much easier to smother the symptoms with the contents of some soothing syrup

bottle, which has unquestionably destroyed more infants than Herod ever slew, and has introduced a far greater multitude, even from their cradles, to the bewitching, but cursed influence, of habit-producing drugs. A widely advertised soothing syrup contains half a grain of morphine to every two ounces of the drug, and children are particularly susceptible to the influence of narcotizing drugs. This is one reason why the cigarette evil is playing such havoc with the boys of our nation.

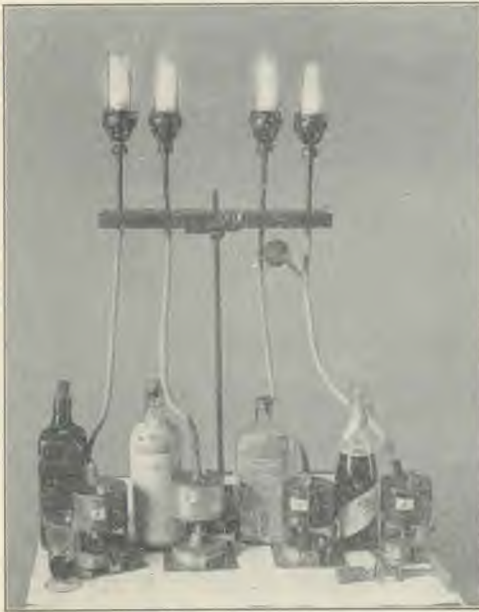
The use of cocaine in this country has trebled since 1888. This is largely accounted for by the enormous increase in the number of unhappy victims who are slaves to its use. There are sections in Chicago where some druggists actually derive the major portion of their revenue from the sale of this drug to those who are addicted to the habit, and the road from the beginning of the cocaine habit to quarters in an insane asylum is an extremely short one, and thousands are traveling upon it. The present indications are that this terrible evil is only fairly launched, as this drug itself was discovered but a generation ago.

One of the traps that is laid for the feet of the unsuspecting sufferer from catarrhal disturbances is extensively advertised catarrhal snuffs and other remedies which owe their fleeting but magic-producing effects to the unknown quantity of cocaine.

As another illustration of the hydra-headed nature of some of these blighting curses, attention may be called to the fact that just at the time when the liquor traffic is beginning to tremble beneath

an overwhelming temperance sentiment in so many sections of our land, and a man can no longer be considered respectable and also be a regular patron of the saloon, when in many instances he must forfeit his position if he persists in the use of alcoholic drinks,—at this very time this same evil is quietly accomplishing its death-dealing work under the guise of the patent medicine evil.

It has been estimated that in this coun-



Burning the alcohol in patent medicines

try last year there was actually more alcohol consumed in the form of patent medicines than in whisky, ale, wines, brandy, and all other intoxicating liquors combined, with the exception of beer. The most distressing part of this picture is that the major portion of this alcohol was actually consumed by women, who are more susceptible to its influence than men, and who will transmit so much of its cursed influence to their children.

Dr. Osborne, of Yale, in a paper read

before the American Medical Association, alluded to a concern that was said to be using five hundred barrels of cheap whisky every week in the manufacture of patent medicines.

With the father getting his liquor from the saloon and with the mother securing hers from the drug-store, is it at all surprising that an official examination of the physical condition of Chicago school children revealed the startling fact that one-third of them were suffering from some form of nervous disorder, thus showing that they have already begun to serve out their life sentences of invalidism? Thus it is becoming more and more evident that the patent-medicine vender is making business not only for the saloon-keeper, but also for the hospital and the undertaker.

Overloading the stomach at unreasonable hours with a large variety of unwholesome food imperfectly masticated and washed down with strong coffee or tea, combined with the strain of modern civilization, or rather our uncivilization, are producing a very large crop of distressing headaches, which in turn are developing an enormous headache-powder and -tablet industry. The essential ingredient of these powders and tablets in most instances is acetanilid, which is a definite heart depressant.

Since these convenient artificial banishers of headaches have been so largely introduced in New York City the death rate from sudden heart failure has increased, until now it is six times as great as the mortality from typhoid fever.

One reason why the people of this land expend eighty million dollars a year for patent medicines, is due to their wrong conceptions of the causes of disease and the philosophy of healing.

As long as sickness is regarded as something which can be "stricken in" or "driven out" of the person, so long the patient will continue to smother the symptoms which are Nature's danger-signals enough to be comfortable while

they are sick and to die easy, instead of taking the necessary trouble to become well. "Killed by the Patent Medicine Bottle" could continue to be written truthfully on many of the tombstones in our graveyards.

Practical Hints on Ventilation

BY PAUL ROTH, M. D.

THE outdoor life affords the benefits of the only ideal and absolutely perfect ventilation. No substitute will ever equal it, but we are far from being in a position to discard all kinds of dwellings, every one of which calls for ventilation of some sort. Even during the most favorable time of the year, a day and night outdoor life is within the reach of but very few.

The daily occupation of the vast majority of people inevitably keeps them indoors, where a constant supply of pure air is seldom obtainable, even where the most perfect system of ventilation ever devised is in operation.

A simple illustration will easily show the impossibility of so perfectly ventilating any room that its occupants will never have to breathe over again more or less air vitiated by previous passage through the lungs. Every one knows how difficult it is to quickly rid a room of smoke. A strong draft may even be created by opening doors and windows, volumes of air may pass in and out, and you wonder why the smoke still lingers. It is because the smoke in those parts of the room not in the direct path of the cleansing current of air simply rolls over and over as in a whirlpool, only to be gradually drawn out by the main current.

Think of the immense quantity of

water which incessantly passes through the whirlpool below Niagara Falls, and yet logs which are brought there, often remain imprisoned for days, slowly circling about until finally drawn down stream again. The same thing happens in the ventilation of any room, and unless the occupants are placed in the direct ventilating draft, near the inlet, they will inevitably have to breathe over again more or less air which has already been breathed and which has failed immediately to find its way out of the room.

Writers on this subject appreciate this fact and speak of ventilation more as a means of preventing the accumulation of poisonous substances in the air beyond a certain amount known to be positively injurious to health. The same writers will tell you that while we take in only about one pint of air at each breath, this small amount, on coming out of the lungs, is charged with enough impurities from the blood, to render unfit for use about three cubic feet of pure air with which it is mixed. Consequently, they correctly state that in order to maintain the so-called standard of purity of the air in a room, three cubic feet of fresh air must be supplied for each person and for each breath taken. In the sick room, this already enormous amount must be increased, even doubled.

It is evident that if we could inhale



Fig. 1

the air where it first enters the room, before it has a chance to mix with that exhaled, one pint for each breath taken is all that would be needed, instead of three to six cubic feet (180 to 360 pints), as required in the usual way of ventilation. If the idea is not practicable during the day, when one must of necessity move about in the house, it is feasible during the time spent in bed, night or day.

A most excellent scheme for this purpose is shown in Fig. 1, its chief value being its simplicity. An iron bed is placed head end against the window. A horizontal iron rod, twenty-two inches long, is fastened to the middle of the frame, two feet or more above the pillow, and supports a sheet spread tent fashion. Fig. 2 shows the same occupied, and the sheet drawn down over the shoulders close to the neck. The window is opened as desired. To obtain the best results

in the ventilation of this miniature head tent, the following points must be observed: The space between the bed and the window sill should be closed to prevent the entering air from passing under the bed instead, of in the tent. The space above, between the window and the bed, should be left unobstructed, to allow the air to pass out of the tent. Under most circumstances the air will then readily find a way out of the room through the space between the upper and lower sash when the window is raised, thus keeping the air in the rest of the room sweet and pure. If this outlet should be insufficient, the window can be opened two or three inches at the top. An ordinary window screen will be found convenient to keep out the snow.

The same idea can be carried out with a wooden as well as an iron bedstead in different positions, as for instance, when placed with the side of the head end



Fig. 2

against the window. This will require a light wooden or iron rod frame placed above the pillow across the bed. A



Fig. 3

sheet is spread over the frame in such a manner as to enclose all sides except that next to the window and the one opposite. With this arrangement, the air must pass through the tent from end to end, then into the room.

GOOD HEALTH has already described the "Porte Air," a very ingenious as well as simple arrangement for bringing fresh air directly to the occupant of a bed placed anywhere in the room.

Figs. 3 and 4 show a wooden bedstead provided with the head tent, one end of which is connected by means of a ten-inch tube, similar to the one used in the "Porte Air," with an opening in a board placed in the window. The other end was made to open directly into the room. It was found, however, that on account of unfavorable winds, the current of

air would at times be reversed, thus bringing warm air from the room into the tent. To prevent this, the end opening into the room was connected by means of another ten-inch tube with an improvised air shaft. This consisted of a piece of canvas encircling three sections of a hot water radiator surmounted by a ten-inch cardboard tube, the end of which is shown in the illustration. A draft was thus created by the heating of the air in the shaft, producing a constant current of air from the window through the tent and up the air shaft, irrespective of the direction of the wind. By opening the window at the top, the foul air escaping from the shaft found an easy exit from the room.

Notice some of the advantages of this mode of ventilation:—



Fig. 4

It will provide you with a constant supply of pure air while you sleep. This alone can not be overestimated when we consider the fact that the ventilation of

dwelling is as a rule poorer at night, when, of all times, fresh air is of the greatest value to the body.

Good ventilation during the cold months is very expensive when from three to six cubic feet of air must be heated for each person and each breath taken. But our scheme calls for only one or two pints of air, which need not be heated.

The head and neck are the only parts of the body exposed to the cold. In excessively cold weather, they can easily be protected, preferably by means of a hood with cape attached. Thus provided, one can enjoy the full value of pure and invigorating fresh air, even at temperatures below freezing, while sleeping in a warm room. No difficulty in keeping warm, no heavy bed coverings needed, and with little expense a warm room always ready to get up in the morning or at any time in the night.

No one will appreciate this more than

the nursing mother. She needs an abundance of fresh air for her own sake as well as for that of the little one and while she has plenty, baby can be within easy reach by her bedside in a warm and comfortable room.

Invalids can find at least one compensation for their confinement in bed in that it enables them to enjoy that great health restorer, pure air, every moment, day and night. Pure air has done marvels for those suffering from consumption, and it will do wonders for those afflicted with almost any kind of disease.

It pays to make some effort to keep well, and in seeking after Nature's remedies for disease, no effort will bring you greater returns than that directed toward securing your allowance of fresh air. One must realize the fact that in matters of ventilation, the simpler the system resorted to, the more satisfactory will be the results.



Good Health in the Family

BY MRS. CLARA C. HOFFMAN

Recording Secretary N. W. C. T. U.

NO wonder the reformer who looks below the surface of things should despair of good health ever being characteristic of our nation.

Our progress in other directions is simply marvelous. When we sum up the achievements of the past century, we find nothing in the world of fiction to equal it. "The Arabian Nights Entertainment" is tame beside it.

We shudder at the statistics given us, of consumption and pneumonia, yet we can understand why it is so. The wonder is that they are not worse than they are when we consider the daily habits of the average family, — habits of eating, habits of drinking, habits of dressing, habits of sleeping.

The average table is furnished with a great variety of condiments, — not only sour and biting condiments, but sweet as well, — "to give relish," "to tickle the palate;" and children learn to require this spur to appetite almost as soon as they are weaned. Nine out of ten children will not eat any kind of breakfast food unless sugar is piled on before the milk is turned on. Then with desserts, cream is used with all manner of preserved fruit, and all manner of fruits not preserved, cooked and uncooked. Think of eating cream with cranberry sauce, and with cranberry pie! Yet it is very often done, because the taste has been educated through the years to these sharp contrasts and unscientific combinations. At the average table meat is relied upon as the staple; it is the first consideration in arranging the menu, and children become flesh eaters at an early age, and what is bred in the bone and muscle and tissue, becomes the life habit.

Two things give hope for the future. First, the high price of all kinds of meat, fixed by the robber meat trust, which the government finds itself unable to control. This may compel people to exist on fruits, nuts, vegetables, and cereals.

Second, whether true or not true, thousands of people undergoing the torture of rheumatism, believe that meat causes this painful disease. Even then, many will endure the rheumatic twinge rather than forego the call of appetite for meat. But the awakening has come, and there is always hope when a few believe and talk.

We talk a great deal about drinking alcoholic liquors which is the curse of the land, because it creates the disease of alcoholism, and intensifies every other evil; but how many think ever of the universal evil of drinking anything at all with meals? How many children ever hear of the necessity of calling forth the saliva, during the process of mastication.

Even in families of the educated, parents who will not allow their children to drink tea and coffee, will permit "cambric tea," as it is called, which is very much sweetened milk and hot water. Or, not permitting this, they will allow little children to drink large quantities of cold water with meals, until it becomes the habit to take a sip of water with every mouthful of food.

We have little use of physiology in our schools until these very primary truths are taught. They ought to be taught in the home, but how can one teach what he has never learned?

Then, about sleeping. The majority of people have a deadly fear of "night air," as if it were made up of entirely

different ingredients from those found in "day air." They carefully shut all doors and windows even in mild weather, because they fear a draft of "night air" will strike them. They can not stand or sit in a draft, even when the sun shines and the mercury stands at 100°. All these "bad habits," and they are simply habits, are destructive to health—even to life itself.

We must learn, the sooner the better for health, that we can not have *too much air*—winter or summer, day or night. When we are inured to the air, day air and "night air," we can bear with utmost composure the cold sponge or shower bath.

Then about dressing. Who but an idiot would ever take off the French (or American) flannel waist worn all day in the well-warmed house and put on the gossamer waist, low-necked and short-sleeved, to attend a ball or theater party?

If comfort has required the use of the high-necked and long-sleeved under suit, it must be discarded when the thin party waist is put on. These

things are done by educated, respectable women not counted as fools, nor yet as criminals. Where *do* they belong?

We hear much about germs. If these infinitesimal creatures live out of doors anywhere, they find easy access to the home on the sweeping skirts which gather up everything in their trains.

Who will explain *why* the girl may, nay, *must* wear her skirts just to the knee until past her early teens, then come the trailing skirts, and for evening the low-cut bodice with short sleeves?

Men dress more sensibly than women, but they have more polluting habits than women, and quite as destructive to health and life. Alcohol and nicotine slay their millions annually; and, naturally, women are copying from them in the use of headache powders, deadly cocaine, and lying patent medicines.

God hasten the day when we shall understand that religion "pure and undefiled" consists most largely in doing one's duty to his neighbor and in obeying God's laws written in his body.

Sterilized Milk and Cooked Meat May Cause Tuberculosis

BY D. H. KRESS, M. D.

IT is generally supposed that the milk or flesh of tuberculous animals is perfectly safe to take as a food, providing the meat has been well cooked and the milk sterilized. Dr. James Law, of Cornell University, Ithaca, calls attention to the fact that while the flesh of some portions of an animal may not contain tubercles, and hence not be likely to communicate disease, and while tuberculous flesh or milk which has

been sterilized by means of heat is incapable of infecting a person with tuberculosis, there is, nevertheless, danger in the use of such articles as food. The danger exists in the presence in all the tissues, and in the milk as well, of a cow suffering from tuberculosis, of the characteristic poison which is produced by the germs causing this disease, which was named by Professor Koch, *tuberculin*. It is this poison which produces

the hectic fever in consumption, the profuse sweats, and other symptoms from which those affected by tuberculosis in its various forms suffer. A small portion of this poison produces little apparent effect, but if one who is suffering from incipient tuberculosis receives even a very minute quantity of the poison, tuberculin, into the system, the results are very remarkable indeed. There are chills and a decided rise of temperature, and the tissues surrounding the point at which the germs are developing soon die.

If tuberculous masses exist in interior organs, the setting free of the mass of germs by the destruction of the living wall of tissues by which it has previously been surrounded, may give rise to a general infection of the whole body. It is in this way, as Professor Law suggests, that grave injury may be done by the use of tuberculous flesh.

The poisons characteristic of the disease, which are always to be found in the milk of a tuberculous animal, even after sterilization, may be the means of converting a simple curable case of tuberculosis into an utterly hopeless one, leading to speedy death. We quote the following paragraphs from Professor Law's article, feeling sure that our readers will be interested and profited by becoming acquainted with some of the astonishing facts presented by this eminent authority:—

"Those who eat this meat and milk are taking in continually small doses of 'tuberculin'; and in case they are already the subjects of tuberculosis, in however slight a degree, or however indolent a form, this continuous accession of the poison will rouse this morbid process into a greater activity and a more dangerous extension.

"If, now, we consider the prevalence of tuberculosis in the human population, we see what a fearful risk is being run

by the utilization of the meat and milk of tuberculous animals, even if it could be shown that such meat and milk are themselves free from the living bacillus. Such reckless consumption of the products of tuberculous animals can only be looked upon as a direct means of sealing the fate of that large proportion of the community which is already slightly attacked with tuberculosis."

We see that the canning of tuberculous carcasses and the boiling or pasteurizing of milk does not render safe the use of these products. A danger signal was held out a few years ago in England by Prof. J. Wortley Axe, in the report of a special inquiry into the prevalence of tuberculosis in dairy herds, instituted by the British Dairy Farmers' Association. Nine herds of various breeds were examined, numbering in all 461 cows. No fewer than 187 out of this number, or forty-one per cent, responded to the tuberculin test, and were found to be tuberculous. In one of the herds, ninety per cent of the milch cows were diseased.

The following table will be of interest:—

Herd	Number	Reaction per cent
1.....	94.....	43.4
2.....	83.....	3.6
3.....	74.....	71.4
4.....	60.....	76.9
5.....	48.....	30.3
6.....	41.....	0.0
7.....	36.....	90.9
8.....	20.....	20.0
9.....	17.....	0.0

It is customary at these dairies to mix the milk, so the milk from one diseased animal in a herd is sufficient to infect the whole milk supply. Milk being one of the best culture media, these germs once planted multiply at a very rapid rate. It seems to us that facts like these made public almost

every day, should set people who have any regard for their life and health to thinking, and that very seriously. Certainly milk should never be used without

being first sterilized or brought to the boiling' point; even this does not render safe the products of tubercular animals, but it minimizes the danger.

Haig on Fruits

MR. HAIG, in his work on "Diet and Food and Relation to Strength and Endurance," offers the following excellent remarks with reference to garden fruits:—

"Most of our fruits contain only a fraction of one per cent of albumens, and are generally equivalent to water with some sugar and salts. These salts, as a rule, may be considered as alkalis, for though they are often present in the form of acid tartrate of potash, which reddens litmus and acts as an acid when first swallowed, their effect on the blood and urine of a whole day is that of an alkali, diminishing the acidity of the urine and probably increasing the alkalinity of the blood.

"Many acid fruits, however, act as acids, at least for the first few hours after they are swallowed, and thus stimulate nutrition, digestion, and the production of force and urea. Almost every one, I suppose, who has gone in for athletics knows the reviving effect of a mouthful of lemon, which is no doubt due to its action as an acid, but even lemon has little or no effect on the acidity of twenty-four hours' urine.

"In the same way acid fruits taken in any considerable quantity with breakfast, and unbalanced by potatoes, influence very decidedly the large morning excretion of uric acid, and so diminish the excretion of that substance for the whole day. Therefore, sufferers from the ar-

thritic group should take no fruit or jam at breakfast, but should take some potato instead, and those who suffer from an ailment of the circulation group should not take much fruit at this meal, or should balance it with an equal quantity of potato.

"Taking the fruit of an ordinary day's food, weighing only the parts eaten, one would probably not be far wrong if one reckoned them as containing about two per cent of albumens.

"Dried and foreign fruits are in the original condition very similar to those above considered, but when a large part of their water has been removed by drying, the relative albumen value is, of course, greatly increased. Such things as figs, dates, and raisins, when eaten in considerable quantity, make a quite appreciable addition to the day's albumens, and those that contain acids or acid salts also act more powerfully as acids when condensed by drying.

"If man is to be regarded as I believe he should be, as a frugivorous animal, nuts and fruits are probably his most natural diet; nearly three-quarters of the required albumens being in this case obtained from the nuts. It is, however, comparatively rare for any one to be able to take this diet who has injured both teeth and digestive organs by years of wrong food. Nevertheless, it is an ideal to be aimed at, and all should try how nearly they can attain it."

How a Neurasthenic Was Cured

MR. PAUL DUBOIS, an eminent specialist in nervous disorders and Professor of Neuropathology at the University of Berne, relates the following case as illustrative of his method of dealing with this class of patients:—

“M. X. was a neurasthenic, forty years of age, who had always been easily fatigued, and whose moods were slightly hypochondriacal. He suffered from dyspepsia, and often from insomnia, but what annoyed him most was his sensitiveness to noise. The noises of the street irritated his nerves and gave him headache. Finding no indications for Wier Mitchell's treatment, I established the patient in a boarding-house. Scarcely had he come there than he began to complain. There was a coppersmith in the neighborhood who every day hammered his brasses; the patient counted the blows of the workman, and when the last had stopped, he would say to himself: ‘It is going to begin again!’ There were a great many carts which passed and which ground on the gravel on the road. That was unbearable. At night there were dogs which barked at the moon, and neighbors who came home late.

“It was with an accent of reproach that he told me his annoyances, for he had warned me by letter, several weeks in advance, that he must have a quiet room.

“‘Monsieur,’ I said to him, ‘I have no other room at your disposal, and if you will take my advice it will be better to stay here. I will acknowledge to you that even if I had a quieter room, I would hesitate to give it to you.’

“‘Ah, really, it is not very amiable of you to say that.’

“‘Pardon me, you misunderstand the

meaning of my words. You want, do you not, to get rid of this sensitiveness to noise which has tormented you for so many years? If I should put you in a chamber of luxurious silence you would suffer less, but when I let you come out you would be still more sensitive; you know that when we have been in the dark the light of a candle dazzles us. You will never get over this infirmity by cultivating your hyperesthesia. I most certainly do not want to exaggerate things, and I have no intention of placing you under particularly difficult conditions, as in a noisy home. But the retreat which I offer to you is as tranquil as the average. You will find noises everywhere resulting from the activity of your fellows. You do not, however, want to live the life of a hermit; your profession requires a sojourn in town. What will become of you if you do not know how to bring back your sensibility to the normal condition?’

“‘But it is stronger than I. My auditory nerves are endowed with a diseased sensibility.’

“‘You are wrong. Your auditory acuteness is normal. It is not your ears which are too sensitive; it is your mind. The noise tires you only because you pay attention to it, because you have the conviction that you can not stand it. Just believe me, no one hears anything but that for which he listens (you have told me that you count the workman's blows); no one sees anything except what he looks at; no one has any sensations except those to which he pays attention. Undoubtedly, if the noise is too loud and the light blinding, our attention is immediately fixed, and I will not ask you not to tremble if a bomb bursts be-

side you. But the noises of life are inevitable, and we must know how to pay no attention to them. What neurasthenics lack is the power of adaptation. Say, then: I will pay no more attention to

these noises; they do not exceed what is possible to bear.'

"At the end of three days my patient had suppressed this wholly psychical hyperesthesia."

Summer Diet for Children

DURING the heated term there is need for the utmost care and precaution with regard to the diet of children, especially of infants. Notwithstanding the efforts made by the health authorities to enlighten and instruct the public, the most alarming ignorance still prevails, as a result of which last summer witnessed a "slaughter of the innocents" unparalleled in any previous reports of the health officers of New York. Many of the cases reported as sunstroke are in reality the effects of unsuitable food which in cool weather and with plenty of fresh air the little one might have withstood, but which are disastrous when the heat is intense, and the child perhaps confined in a stifling room.

"With the children," says one, "the deadly work of the heat is shown by a general collapse, usually taking the form of gastroenteritis, a convenient medical term covering any inflammatory disorder of the digestive organs. The victims are taken to the hospital only at the last minute, and frequently too late for all the skill and care in the world to undo the harm wrought by months of grotesque mistreatment."

A New York journal published the following suggestive case:—

"When the heat was at its worst and the whole city was like a great gridiron with the paved streets' red-hot bars, the district physician of the Post-

Graduate Medical School and Hospital, known through much of the East Side as the 'free doctor,' was called in haste to a stifling room in one of the tenements that line the side streets running off from Third Avenue. There he found a year-old baby in violent convulsions."

"The most frequent cause of convulsions is bad food," the doctor said to himself. Then he turned to the mother crying by the bed. "What did the child have for supper?" he asked.

"Beer and huckleberries," the mother answered.

Beer and huckleberries would be a sufficient explanation for the death of a baby a year old, but when complicated by scorching heat and bad weather a less extraordinary diet creates untold havoc. Penny slices of watermelon, cool, thirst-satisfying, and covered with dirt and dust, visible and invisible, of the streets are rivalled in juvenile favor by penny ice-cream sandwiches made of heaven knows what.

Beer is cheap,—an enormous amount is put into a tin pail for ten cents—it is cool and can always be had at a minute's notice. Milk is neither so cool nor so cheap, and few tenement apartments are provided with refrigerators in which to keep it. So the whole family drinks the beer, and is thankful for it, and the babies are stricken with gastroenteritis of some form and wilt within forty-eight hours.

Give Us Fresh Air

ONE of the greatest blessings to the human race is fresh air, but alas! it goes unappreciated. For years the architect's skill has been spent in perfecting and beautifying dwellings, office buildings, and work-shops, and while he has succeeded in making these pleasing to the eye, he has neglected that more important feature of adapting these structures to the requirements of the health of the inmates. Rooms are built, some with no windows, others with one, and still others, while supplied with several, have them arranged regardless of sunlight and ventilation. And even many windows are made stationary, some for the purpose of supposed beauty, others in order that they may fit more tightly and keep out cold air.

It is very commonly believed that open air — that is the freshest, purest air obtainable — is essential to the cure of tuberculosis. This is true, but fresh air is also good for diseases generally. It is also good as a preventer of disease. Everybody should be taught that fresh air is essential to the maintenance of the best and most perfect condition of health.

The way fresh air and sunlight are excluded from our homes, either through faulty construction or through shades and curtains, is an everlasting disgrace to a civilized people. This one factor is the cause of much ill health, and stands responsible for men's breaking down in the prime of life, and for the pale, nervous wrecks of women which are so commonly seen. The pale, emaciated, scrawny, dyspeptic, and catarrhal child, who falls an easy prey to disease, is also a product of this same factor. The universal cry, "Give us fresh air," is ascending to heaven (unconsciously, to be sure) from not only the hovel and tenement

house, but from the homes of the well-to-do and the palaces of the rich. People of all classes and of all sections are hungering for fresh air, and yet they will not open their windows and bid it enter. Education is needed along this line, then, not only for the tuberculous, but for all. Let us teach that fresh air is not only a requisite to the cure of tuberculosis when once established, but also let us emphasize the fact that it is one of the greatest factors in keeping the strong well, thus preventing not only tuberculosis, but other diseases also.

There is a right and a wrong way to do all things. The employment of the "open-air" cure for tuberculosis is no exception. Many people have an idea that if only they remain in the open air, they will be cured, no matter what follies and indiscretions they commit. Recently an invalid consulted me, who, at the advice of her friends, had gone to the mountains to live in the open air. Although running a daily temperature of from 102-104, she was climbing the mountains, trying "to improve" her "appetite and gain strength." She came home believing there was no more virtue in the pure air of the mountains than in that of the city. Another suffering from acute tuberculosis came to California to get the open air. She was dragged around sight-seeing from one town to another, thinking that all that was necessary was to walk the streets and breathe the fresh air. Such examples could be multiplied by the thousands, every one of which is a libel upon "open-air" treatment for disease.

Fresh air is a good thing, but it must be employed intelligently. Tuberculous individuals must remember that they are ill, and that they can not do what well

people can. They need most careful guidance, and this especially when they begin to feel well. It must also be remembered that open air is not all that these people need. They must have good food. There are symptoms arising in

each individual case that can and should be relieved, and there are many scientific measures which are of value and help to bring about a cure in this disease.—*F. M. Pottenger, Ph. M., M. D., in Journal of the Outdoor Life.*

The Plague of Flies

PHARAOH was not much worse off than summer visitants and country people are over the fly pest at the same time of the year. Yet scientists tell us that the remedy is in our own hands; that if every man who owns a horse would do his duty and every other person be clean enough, there would be no flies to bother us. They even hint that in this case, as in the case of some other plagues, the simpler the remedy, the more it is ignored. So long ago as 1873 Dr. Packard investigated the life history of the common house fly, and in 1895 the Department of Agriculture instituted experiments for the purpose of controlling the evil. The results may be briefly summed up thus: The house fly chooses, before all other places for its eggs, the refuse from a horse or cow stable. The blue bottle deposits its eggs in decaying animal matter. The green bottle fly affects the refuse from a cow stable, and a troublesome, small, jet black fly breeds in the dust under carpets. The question is, How shall we protect ourselves? With regard to the last-named fly, it is simply a matter of domestic cleanliness. With the others, it does not seem to be such a difficult matter, if we will sacrifice a trifling expenditure of labor and money. If all decaying animal matter were destroyed as it ought to be, there would be no bluebottles to drive philosophers and others mad. If the refuse from stables

were treated with chloride of lime, not a single house fly could survive. The Department of Agriculture authorities found that a pound of chloride of lime utterly destroyed all eggs in a quarter of a bushel of refuse. It ought to be possible to make a solution so cheaply that all refuse, in town and country, could be treated efficiently, and thus keep down the plague. There appears to be no difficulty in the matter when the refuse is placed in proper buildings; but, of course, if we are so uncivilized as to neglect necessary cleanliness, we must suffer. Why can not we be decent about our domestic animals? Why do we still, in this twentieth century, refuse to improve upon the methods of the kitchen midden folk? Doctor Leidy proved long ago that flies were the means of carrying hospital gangrene. Flies caught in a room occupied by a consumptive patient were found to be infected with the bacillus of tuberculosis. That typhoid fever is disseminated by flies is a fact demonstrated by bitter experience in camps. If we really desire to exterminate these destroyers of health and peace, we must exert ourselves to persuade people to be cleanly about domestic animals, to reckon disinfecting among the necessary operations of the stable as well as of the contagious disease hospital. The only modern Moses with rod of might is perfect cleanliness.—*Public Ledger.*

A Danger Spot in the Home

SOME form of cold storage for the preservation of perishable food supplies, is one of the essentials of up-to-date housekeeping. A refrigerator or ice-box is almost as much of a necessity as is a stove. While such rank among the greatest of household conveniences, they may be reckoned also among the greatest of foes to the health of the household if not properly cared for.

A writer in a contemporary magazine says:—

“Although every household of any pretensions boasts its refrigerator, or ice box constructed upon the principle of the refrigerator, the ignorance upon the part of housewives in general as to the care of the same is almost incredible, and a review of these household conveniences would betray the fact that only one in ten, or even a less ratio, is wholesome, and in homes, too, where tidiness seems to be the keynote of the establishment. For some unexplainable reason,—but probably from the notion that ice is a purifier,—the refrigerator is supposed to take care of itself, demanding only its daily supply of ice. That ptomain poisoning is not of more frequent occurrence under these conditions is little short of a miracle; for nothing so urgently invites it as does the unsanitary refrigerator, being, as it always is, a veritable store-house of microbes.

“The first responsibility the refrigerator imposes upon the housewife is the duty of keeping it absolutely pure and clean, that the food placed in it may not absorb any impurities which will render it detrimental to the health of those who consume it.

“Once a week the whole inside of the refrigerator, from the ice chamber down, should be thoroughly cleansed with a

strong solution of warm soda water, then wiped dry with a clean cloth, taking care to dislodge even minute particles of food that may have accumulated in the corners, and which, if allowed to remain, will in due course sour or decay, according to their composition, pollute the air of the food chamber, and in this way cause other food to spoil.

“The drain pipe should also come in for especial notice while the cleaning is in process. Although none but the most careless servant, and surely not the mistress herself, would ever put ice into the ice chamber before thoroughly rinsing it, yet foreign particles cling to it, are passed on into the drain and in time, unless removed, render it foul. A long-handled swab should be kept for this purpose and thoroughly cleansed and dried after using.

“Given a refrigerator above reproach as regards cleanliness, the next thing, if it does its work satisfactorily, is to keep the ice chamber *filled* with ice. This course will in the end be found cheaper, to say nothing of having one’s provisions that are to be kept cool thoroughly chilled.

“From mistaken notions of economy, many housewives wrap the ice, before putting it into the ice chamber, in a piece of blanket or similar material, and then marvel that though the ice keeps so well, the refrigerator is never cold. When it is understood that the principle of the refrigerator rests upon the melting and evaporation of the ice, and that in order to secure these conditions the free circulation of air is essential, the reason becomes plain to any one.

“Neither must the doors of the food chambers be left open longer than is absolutely necessary; for the escape of cold

air and the inrush of warm air will bring up the temperature in an incredibly short time.

"Food should never be put into the ice chamber; for it will become more or less tainted. Food should be cold before being put into a refrigerator. Milk, butter, and other foods of an absorbent nature should be kept covered. Not only should raw and cooked meat never be put on the same dish, but they should have separate shelves. Vegetables should be kept from contact with other foods, and, always before finding their way into a refrigerator, should be thoroughly rinsed to dislodge any insects or impurities that might be clinging to them.

"Even in the best refrigerators food will not keep indefinitely, and for this reason should be daily examined, that the first indications of taint or decay may be discovered before the poison is conveyed to other foods. Neither will the air of the most sanitary refrigerators restore the wholesomeness of food when decomposition has once set in, and the risk run by the housewife when she introduces such food into her refrigerator is too great to be incurred.

"In short, if it is to perform its mission properly, and become, not a source of woe, but an article of greatest value, the refrigerator demands eternal vigilance upon the part of the housewife."

An International Cooking Exposition

Cooking has long been regarded as a fine art, but it is only of recent years that it has been recognized as a science. A thorough culinary course includes a knowledge of chemistry and other sciences, and gives scope for the exercises of all one's intelligence as well as skill.

An international cooking congress was recently held in Vienna, presided over by the Grand Duchess Maris Josefa, the object being to give the Viennese the opportunity to study what dishes would be most advantageous to their means and menus. German, French, Italian, English, and American cooks each displayed their culinary skill. In this way the attention of the public was called to a series of simple dishes not generally known, the recipes being presented, with samples of the product.

Fresh Air for Sleeping Apartments

Of all habitable places, the sleeping-space should possess the most soothing qualities which quiet, darkness, and cool,

pure air can give. In most rooms where lamps have been burning and people staying for one, two, or three hours, the air has become heavy and close. It is thought that the room may be "aired" by opening a window some six inches or more at the bottom, possibly two windows or a door, and allowing a current to pass for a few minutes. The upper third of the space remains as it was; the hot air is only pressed the closer to the ceiling by the cold, fresh air coming in below, so that when the window is closed, it begins to diffuse downward. As the lower layer warms, it soon reaches the would-be sleeper, causing that peculiar wide-awake feeling which is so irritating. In the wholesome house, the chambers will be kept full of fresh air, cool and dark until just before bedtime, then very little light other than electric will be used, so that all the unseen, intangible influences will make for sleep, and not for wakefulness. All rooms will have windows on two sides, to permit of quick airing by means of cross currents, and some outlet at

the very top of the room will be provided for the used air to escape, as it is trying to do.—*Selected.*

A "Fresh-Air" Conference

"Since 400 B. C., people have been trying to cure consumption," said Health Commissioner Parlington at the "Fresh-Air" Conference recently held in New York. "Fifteen years ago it was learned that fresh air will cure three-quarters of the cases, with good food, rest and light, and it is the same with almost all infectious diseases. Robert Hunter has recently collected statistics regarding breakfastless children in New York. He has found a great number of such children, but a large majority did not care to eat because they had no appetite after spending a night in a closed, stuffy room. With the coming of warm weather, the death-rate from consumption falls. In winter it rises again, because the one thing needful—fresh air—has been kept from the houses."

A number of other doctors spoke on the same subject, one calling attention to the German system of country school sanatoria for sick children, which are a part of the regular school system.

Housecleaning

It can not be too often repeated that sunlight and pure air are Nature's great disinfectants and purifiers. It is impossible to keep a house really clean in the sanitary sense unless the sun and air have free access to the rooms. "There is only one way to clean house thoroughly and well," says one. "Open doors and windows, shake all textile fabrics, let the light and air penetrate into every corner, not for spring cleaning only, but every day."

Windows should be constructed with a view to their being ventilators and centers of sunshine, and not mere ornaments to the house. Recent experiments have shown that bacilli exposed to the sun and air were destroyed in two hours, while those exposed to the sun's rays, the air being excluded, were alive after a much longer exposure. The oxygen of the air had a marked effect in assisting the sun's rays. In an experiment with cholera bacilli, a Neapolitan doctor has found that those protected from the sun killed guinea pigs in eighteen hours, as usual, while those exposed to the sun were rendered harmless.

If you would be truly clean and healthy, give the air, full of life and sunshine, a chance to flood your home, and drive out dirt, darkness, and disease.

FROM Pawlow's work we can readily see that it is not well to allow those suffering from hyperpepsia to become too hungry, for in that case too much gastric juice will be poured out. He also showed that fat tends to decrease the secretion of gastric juice. So hyperpeptic patients should have a large amount of fat, as this physiologically restrains the excessive secretion.

LAST year there were brought into this country 700,000 pounds of opium and a ton of morphine, which is five times as much as was used six years ago; and the *Chicago Tribune* estimates that a million people in this country are addicted to the use of either morphine or cocaine.—*The Quarterly Journal of Inebriety.*

"To deliberately undermine the health and strength of the body by persisting in an injurious, because false, way of living is a sin of great enormity.—*Rev. Geo. F. Pentecost.*"

... Our Walking Club ...

Oak Apples

BY JULIA ELLEN ROGERS

I INVITE you all to look carefully into the leafy canopy of some oak tree this sultry month of August. What a multitude of leaves there are! Many more, there must be, than the tree actually needs. But the more well-formed leaves it maintains, the heartier it lives and thrives. Remember that leaves are the stomachs and lungs of the trees.

The leaves have become tarnished since June. Then they showed themselves clean and full of sap, and ministering bountifully to the appetites of the growing shoots, the infant buds, and filling out the flowers' promise of fruit. Now the trees' activities are on the wane. Dust is clogging the leaf pores, and the sun has scorched its tender greenness. A leathery texture is noticeable in the foliage mass. Insects which were but hatched from the eggs in June, have been feeding on the leaves, despoiled many, reducing them to skeletons. It is astonishing how many kinds of leaf-eating insects have no other food than our forest trees furnish them.

Chewing insects bite out mouthfuls, thus cutting away the web of the leaf. Then there are *sucking insects* which thrust their sharp beaks through the skin, and suck the juices. Dead patches on a leaf are the work of these. The plant lice do this kind of mischief. See them in colonies lining the curled portion of a diseased elm leaf.

Gall insects are not so straightforward in their methods, but they tell us a more interesting life-story. It is quite worth the effort needed to unravel it. I will have to tell the



Fig. 1

opening chapters, but leave to you those that come after the current number. I will read from August backward.

Look among oak leaves for oak apples. They are shown, life size, in

the illustration, so no description of their form is necessary. Pale green they were in July; now they may be turning to russet in some cases. The leaves to which these strange growths are securely attached are always defective. In truth, the "apple" itself is a distorted portion of the leaf.

You will naturally break open these strange "fruits" of the oak trees. The scientific member is sure to rebuke your



Fig. 2

credulity if you think they are *fruits*. "Acorns are the only *fruits* that oaks bear." This is incontestably true. What are they, then? To answer this question you investigate the internal structure of the green balls. You find nothing much inside but "things and strings." And they are not all alike in the quantity of these commodities.

There is a central round kernel supported by threads stretched to a thin outside wall. Suppose No. 1 has many threads and a spongy substance holding them together. Call it the *Spongy Oak Apple*. No. 2 lacks all sponginess, and there are just the fewest possible delicate threads. It is the *Empty Oak Apple*. No. 3 is half-way between. The threads are more numerous and stronger. It is the *Fibrous*

Oak Apple. Now all we find may be classed under these three names. Sometimes the weight will determine which are the spongy ones. The other two we may have to open before we name them correctly. Distinct species of insects make the three galls.

Now open the core and you always find the young of the insect, a larva. If you object to this rather scientific term, call it a maggot. To me, this is a very unpleasant word. Let's compromise on *grub*. This grub is fat and white and healthy-looking. It is a wise infant of wise parents. For a strict vegetarian diet is all it has ever known—fresh green cells, with rich leaf sap its only beverage. What wonder it is comely!

To go back now some months. When winter lapsed into spring, there rotted under the oak trees, in the leaf mold thereof, a brown oak apple, whose substance went back to earth again with the dead leaves. Out of the central kernel emerged a winged insect, small, wasp-like. Like burnished steel was the gleam of its elegant body and filmy wings. Straight to the new leaves of the old oak this insect flew. Others of its own kind are there; and the May sunshine greets their advent to the world of light they never saw before. Instinctively the females seek the surfaces of the unfolding leaves, and, one in a place, deposit their tiny green eggs. It is a dainty thing to watch, this trim little gall-fly hovering about a spray of oak leaves, all silvery and pink, in early May. Everything is like a fairy world at this time of year to one who peers into the tree tops. All is miracle and promise and beautiful colors and forms of grace, and textures delicate beyond my powers of description.

The eggs are imbedded in the leafy substance, and their presence seems to

irritate the leaf-cells. Any foreign body causes Nature's plans to vary. So the leaf puffs out into an abnormal growth, and the egg is its center. Leaves two inches long show these galls the size of peas, having the outward form and internal structure of the full-grown gall. The egg hatches, and the larva feeds on the green substance it finds ready. Through those suspensory threads the nourishment comes. The gall is green and soft-walled; it is of the leaf, and receives its share of sap.

At the proper moment, the grub finishes its career, and goes to sleep after the rule of infant gall-flies. This is the chrysalis or pupa state, a quiescent period, wherein development proceeds; under the snow, with the decay of its outer tenement at hand, the gall-fly unconsciously prepares for its adult life. Possibly it has premonitions. Nothing in dreams could surpass the perfection of the life upon wings. Merry but brief it is, for death overtakes them all after the eggs are laid, insuring a new generation.

It is not unusual to find in the soft tissues of the spongy oak apple the grubs of other insects. The owner always keeps to his central castle solitary. The ones we may find outside this citadel are known as "guests." They feed upon the spongy tissues and are happy. They do no harm; so give no offense to the rightful owner. These are the young of certain parasitic gall-flies which puncture the little galls, and lay their eggs within. There are other insects, relatives in truth, that work a deadly injury to the gall-fly that causes the oak apple. Piercing the gall at a very early stage, it lays a number of eggs within the very center, and on the body of the young larva. Hatching, this litter of invading grubs attack the rightful owner of the place, eat him up,

and succeed to his house and his living. It is one of many tragedies that may cut short the career of the infant maker of oak apples.

Bullet galls are found on twigs of oaks. They are hard and small. Look in the center. Can you account for the straight tunnel through the side of an old one you find on a two-year-old twig?

What strange notions people have as to what produces oak apples! In the old Herbal of Gerard, published in 1597, is told in the quaint English of the



Fig. 3

period what the country people found revealed by the innocent baby gall-fly and his guests. It is worth quoting.

"The oke apples being broken in sunder about the time of their withering doe foreshew the sequell of the yeare by the living things found in them. Before they have an hole through them they contain in them either a flie, a spider, or a worme; if a flie, then warre ensueth; if a creeping worme, then scarcitie of victuals; if a running spider, then followeth great sickness or mortalitie."

"Superstition is ever the offspring of ignorance." I wish each member of the Walking Club would clear the mind of at least one child of the mystery of oak apples. Impress on them the fact that the tree is able to spare one leaf to act as food and shelter for each little gall insect that the mother trustingly leaves in its care.

"What do *them* do to yuh?" a little slum boy asked shuddering, as a strange insect was shown him. What an epitome of the pitiable attitude of ignorant people toward unknown things that fly and creep and hum! It is for us to cast out such fear, and to let joy take its place by instilling a knowledge and love of nature.

August Bird Notes

BY BELLE M. PERRY

AUGUST is not a month for tramping excursions, though there is much well worth tramping for, despite the fact that the song and nesting seasons are so nearly past and the majority of birds are in hiding. But there is also much to see close at hand, and our bird talk this warm month will be from a hammock under the shade of trees, or may be just from a secluded porch with trees and shrubs close by, where the hum of insect and the whisperings of the trees will come to us.

It is surprising how much of interest may come through the sense of hearing alone, when one has learned to observe by listening as well as looking. To most people the voices of the outdoor are a medley of sounds. They hear just birds, if they take note at all, where the bird lover hears orioles, wrens, robins, pewees, bluebirds, vireos and song sparrows, and experiences a sense of pure pleasure in it all that makes each day interesting when he can have access to the outdoor.

The way the majority of people go through life, never noting the common things of absorbing interest, is one of the saddest results of our book-system of education. Dr. E. W. Scripture, of Yale, has well said, in the opening pages

of his text-book on psychology, "Thinking, Feeling, Doing," that "the fundamental method of all knowledge is observation, or watching. This is the first thing to be learned—the art of watching. Most of us went to school before this art was cultivated, and, alas! most of the children still go to schools of the same kind."

A lady who has been a high school teacher for years, once asked me what bird it was that sang so much nights and mornings, and proceeded to describe the robin's song. She was as much surprised as I was to know she really did not know the song of the robin. But teachers have been buried in books.

A gentleman at whose house I was calling one day, invited me to go to see a nest of song sparrows on his grounds. I was filled with pleasant anticipations and was somewhat disappointed to find his song sparrows were only the dear little "chippies."

One day when walking on the street with a friend who is quite a musician, I stopped still to listen to a song sparrow in plain view and close by. She had never consciously heard one before, and seemed much interested to have her attention called to the charming songster.

How much she had missed in not making familiar acquaintance with this bird alone, which is with us so much longer than most of the song birds, and which sings almost any hour of day for the greater part of the time. I could multiply instances which tell their own sorry story of how the world has gone to school to books instead of to life. But better days are coming. Many hopeful indications point that way. One of the committees of the General Federation of Women's Clubs, in a recent circular sent to the women's clubs of America and other countries, commends practical nature study in the following strong terms:

"Every child should be made a gardener and a horticulturist. The winter term of school should be devoted half to books and half to work on the benches, and the summer term should be devoted to agriculture. The summer school should be held at the edge of the city, where children from the kindergarten to the high school could attend.

"They could be taught to raise everything on five acres that goes to make a home."

"If the child in the elementary school raises his seedling tree, idealizes it with sentiment and song, plants it on Arbor Day when he can watch its growth, if nature work leads him to watch its growth from all points of view, surely he will love and value the forests, and wanton destruction will cease."

We hear much in these days about the simple life. The world is hungry for what is included in these three little words, but it will never find the way to it until some nature interest claims due place in people's lives, and they know in their own experience that—

"The best things any mortal hath,
Are things that every mortal shares."

Recruits to the simpler and more

rational order of life are being slowly gathered from the ranks of those who are learning that if they are to live at all they must live much out of doors, and from another class who have sought for happiness in the possession of artificial things, only to find each object of pursuit, in its turn, an apple of Sodom, fair in outward appearance, but turning to ashes and smoke when grasped. Eugene Field voiced a growing hunger in the human heart when he sang,—

"It seems to me I'd like to go
Where bells don't ring nor whistles blow,
Nor clocks don't strike, nor gongs don't sound,
And I'd have stillness all around.

"Not really stillness, but just the trees'
Low whisperings, or the hum of bees,
Or brooks' faint babblings over stones
In strangely, softly tangled tones.

"Or maybe a cricket or katydid,
Or the songs of birds in the hedges hid,
Or just some such sweet sounds as these
To fill a tired heart with ease."

And so, from our hammock under the trees, in this month of vacations and outings, we will try to get a bit closer to our great Mother through a little quiet observation, and enjoyment of the sweet sounds of which Mr. Field wrote.

Of course the bird-sounds will not be many. The time to get acquainted with these, or to begin an acquaintance, is before the leaves come, in the spring, when every songster can be easily sighted. It is then easy to get the robin and bluebird and song sparrow well learned before the other birds arrive. And when a few are learned, it is easy to add others, until practically every bird of note in the morning chorus can be easily identified. There is now a book of bird songs which can be made to help out if one has a piano to try them on. Though this is August, Mr. W. H. Gib-

son tells us of a bird song peculiar to this month, which is so good an imitation of a grasshopper that most people are deceived into believing it is this insect or some of its kindred. It is known in the bird books as the grasshopper sparrow, and is said to be a very common resident of almost every field at this time. Its zee-e-e-e-e-e-e-e, however, has a bird quality which soon distinguishes it from the wing-music of the grasshoppers, and it is well worth an acquaintance.

It is worth while, too, to get a peep at some of the locusts and grasshoppers when they are making their music, and see how they use thighs for fiddle bows and their wing-covers for strings. A little listening and looking will reward the observer. I well remember my first chance view of a performance of this nature. It would not be surprising if we had more than one opportunity from our hammocks to get a view of them, especially with the aid of an opera glass. To have seen even a very few at this work is to add new interest to the open-air symphonies of these days. We may also enjoy a quiet hour now and then in listening to the music of the wind on a breezy day. One tree or set of trees after another takes up the harmony as we listen. A swell of rustling music is added to the concert from one direction and then another; the swell diminishes to the faintest whisperings, only to rise again in a fine sweep of leaf melody. We will be able to distinguish the sounds that come from the pines if we are so fortunate as to have one or more within hearing distance, and maybe from the poplars. It is a delightful way to spend an hour on the right sort of day. Try it!

The familiar birds we may chance upon now may sometimes puzzle us with their unfamiliar looks, for a moulting

bird often presents quite a different appearance from the same bird in full spring plumage; and the young birds add to the confusion. Charles Darwin gives a few interesting rules regarding the plumage of young birds:—

“1. When the adult male is more beautiful or conspicuous than the adult female, the young of both sexes in their first plumage closely resemble the adult female, as with the common fowl and peacock, or, as occasionally occurs, they resemble her more than the adult male. 2. When the adult female is more conspicuous than the adult male, as sometimes, though rarely occurs, the young of both sexes in their first plumage resemble the adult male. 3. When the adult male resembles the adult female, the young of both sexes (usually) have a peculiar plumage of their own, as with the robin.”

A number of additional rules covering the unusual and exceptional cases are omitted.

One frequently chances upon bird feathers at this season. An interesting hour may be spent in the close observation of a few of these, if one has access to a good hand lens and a microscope. Most of us as children have played with feathers and noted how they could be restored by a process of smoothing, after they had become ragged and tangled. But we never dreamed of the wonderful mechanism of the feather which made this possible. Our hand lens will show something of its delicate construction, but it will require a microscope to reveal the hood-like barbicels which are made to fasten on one another, thus making it possible for a bird to smooth and dress its ruffled and disordered plumage. This is done daily in the process of preening, which one will watch with more interest after examining a feather under the microscope.



CHAUTAUQUA SCHOOL OF HEALTH

The Temperature of the Body

BY J. H. KELLOGG, M. D.

THERE is a slow combustion taking place in the body all the time by the burning of the substances taken in as food. The several food elements—starch, sugar, fats, albumins, and even vegetable acids—furnish fuel for the maintenance of the bodily heat. Of the several different kinds of fuel-food, fats furnish the largest amount of heat. The body requires, per diem, about ten thousand heat units; that is, about as much heat as would be required to raise the temperature of ten thousand pounds, or five tons of water one degree in temperature. Each ounce of fat produces about one thousand heat units, or heat enough to raise a thousand pounds of heat required for the body would be produced by ten ounces of fat. An ounce of starch, sugar, or albumin produces about half as much heat as an ounce of fat, or five hundred heat units. Hence twice the amount of these substances would be needed, or twenty ounces.

The amount of body heat required depends upon the amount of clothing worn, upon the temperature of the surrounding air, and to some extent upon the amount of moisture contained in the air; hence, there must be a constant regulation of the heat functions of the body so that the temperature of the body may be maintained at the right point, which is at about one hundred

degrees, neither falling much below nor rising much above the normal temperature. The ordinary variations in health are very slight, amounting to less than a single degree. If the temperature is taken by placing the thermometer in the mouth or under the arm, it is found to be slightly above 98° F. But this is the temperature of the muscles, which is slightly lower than that of the deeper parts. The regulation of the temperature of the body requires constant adjustment; first, of the heat production, and second, of the heat loss or elimination. The heat is produced chiefly in the muscles. The heat loss takes place at the surface of the body.

While heat produced chiefly takes place in the muscles, heat regulation occurs at the surface, through changes which take place in the blood circulation of the skin under the influence of special nerves and nerve centers. The blood is heated in the interior of the body. At the surface, the temperature of the blood is lowered by contact with the air and by evaporation of moisture from the skin. Thus the blood is continually carrying the heat from the interior to the surface to be absorbed by the air, thrown off by radiation, or utilized in the evaporation of the sweat. Under the influence of the nerves and nerve centers, these heat-eliminating processes are perfectly regulated. It is evident that the more widely

the arteries of the skin are dilated, the larger the amount of blood which will pass through, and consequently the greater will be the amount of heat given off. On the contrary, when the vessels are contracted the amount of heat loss at the surface will be diminished, as less blood will be brought to the skin to be cooled by exposure to the air. It is easy to see that the heat loss may be easily regulated by the contraction and dilatation of the surface vessels. This process may be easily observed. The application of cold to the skin causes it to become pale at once by contraction of the vessels, whereas a hot application causes reddening of the skin by dilatation. The face and even the whole surface will be flushed and red when the body is exposed to a warm atmosphere, because of the general dilatation of the surface vessels. By these changes in the circulation of the skin, the heat loss may be increased to three or four times the normal amount, or diminished in like proportion.

Another very interesting method by means of which the heat loss is modified is the regulation of the action of the sweat glands. By the evaporation of the sweat a large amount of heat is carried off. In the evaporation of one pound of water as much as one thousand heat units are absorbed; that is, as much heat is consumed in the evaporation of a pound of water as would be required to raise half a ton of water one degree in temperature. About two and a half pounds of water are evaporated from the skin daily, representing a heat loss of about two thousand five hundred heat units, or one fourth of the entire amount of heat generated in the body. The amount of water thrown off by the sweat glands may be increased by exercise and exposure of the body to heat, and hence by this means the heat loss through

evaporation may be greatly increased.

The remarkable arrangements for the regulation of heat production and loss are among the most interesting and necessary phenomena of life, and demonstrate in a most striking manner the presence of an intelligent control of every bodily function in the interest of the general welfare of the body. Similar provision is made for the lower animals which belong to the warm-blooded class, though not altogether in the same way. In flesh-eating animals the skin does not sweat, but the blood is cooled by the evaporation of moisture from other surfaces. In the dog, for example, this evaporation takes place from the surface of the lungs. This is why a dog pants when overheated either by exercise or by hot air. By the act of panting, the air is rapidly passed out and in the lungs, and so by the evaporation of moisture, cools the blood. The common house cat has large and active sweat glands on the soles of its feet.

So-called cold-blooded animals, such as fishes or frogs, have but little power to regulate their temperature, and consequently assume a temperature near that of the water or air with which they are surrounded. Children and aged persons have less power to regulate their temperature than have healthy adults. In other words, they are more nearly like cold-blooded animals, and hence require special care to prevent injury from extreme cooling or over-heating of the body.

In fever, the heat centers are disturbed by the poisons which are circulating in the blood, and in such a way that heat production and loss are not so perfectly controlled as in health. In some fevers, as, for example, in typhoid fever, the body seems to establish a new standard of temperature at about 101° to 102° F., or 2° to 3.5° F. above the

normal. Let us see the reason for this.

It has been ascertained by experiment upon animals and observation on human beings that elevation of the temperature of the blood is one of the most effective means of destroying the disease germs which are present in the body in fever.

In the exact adaptation of the process of heat production and perspiration to the changing temperature of the surrounding atmosphere and the varying conditions of the body, we have a most marvelous evidence of a most beneficent care. These processes are absolutely beyond the control of the human will. It is quite impossible for one to raise the temperature of his body one-half a degree by an effort of the will. One cannot by mere thinking cause a perspiration by

commanding the skin to cease its activity. One can control his muscles, at least a part of them, by an effort of the will, but the sweat glands and heat-producing organs are as much beyond the control of the will as are the heart, the stomach, the liver, and most of the other vital activities; yet these heat-regulating functions are all controlled with a nicety which is altogether beyond our comprehension. A change of temperature of one degree, or even less, necessitates a readjustment of the process of heat-making and the throwing off of heat. The opening of a door or a window, the opening or closing of a register, necessitates a change in the finely balanced adjustments whereby the body temperature is maintained at the normal standard.

Food for Diabetics

BY LENNA FRANCES COOPER

THERE is no disease, perhaps, in which the diet is a more important consideration than that of diabetes mellitus, for the reason that there is absolutely no cure or help for it unless the diet is regulated. The physician is powerless unless this is properly attended to.

This disease is not of the kidneys as is generally supposed, though to the laity the symptoms seem to indicate it. It is a condition in which the body is unable to oxidize the sugars, and hence that substance is found as sugar in the blood and in the urine; consequently all sugars must be eliminated from the diet, and since starches in the process of digestion are also converted into sugar, they are ordinarily proscribed also.

In a normal individual these two classes comprise more than half the diet, hence when these are proscribed it means a radical change in the diet. One excep-

tion, however, is made to the starches, that of potato. Physicians find that a very small amount of starch is needed and that the very best form in which to take it is the potato starch. Baked potatoes or preparations made from the potato meal are the most wholesome.

The human body is so wonderfully made that if one of the food elements—starch, sugar, fat, proteid, or fruit acids—is lacking, it can, under certain circumstances, utilize the others for the purpose for which the lacking one was originally designed.

Starches and sugars are the great source of heat and energy for our bodies, but the fats also serve this important purpose; hence, when the former are withheld, we must make up this deficit from the fats. But the fats in large quantities often interfere with digestion so that it is important that they

should be taken in the most easily digested form; viz., emulsions, as in cream, nuts, and olives. Salad dressings, where the fat is emulsified with the egg yolk, is another good form in which to take it.

With the disease under consideration there is excessive waste of tissue, which must be supplied by an increased amount of proteid in the food.

The proportions of the food elements per day for a diabetic will vary according to the advancement of the disease, but will be about as follows:—

	Calories
Proteid	400
Carbohydrates (potato starch and fruit acids).....	400
Fats.....	1400 to 1500
Total.....	2200 to 2300

These amounts are for those who thoroughly masticate their food. When food is not thoroughly masticated a large amount of it is not assimilated. It is always important to thoroughly masticate food, but especially so with those who suffer from this disease, for they need all the nourishment they can get, but the system should not be burdened with food that can not be assimilated.

The source of proteid is another important consideration. Formerly a flesh diet was supposed to be a necessity, but now diabetes is most successfully treated without it for the reason that it decreases the alkalinity of the blood, thereby lessening the resistance of the body against disease.

Gluten, eggs, cottage cheese, and nuts are the best sources of proteid.

Below is a list of foods which the diabetic can take with safety:—

Protose	Vegetable Gelatine
Nuttolene	Sanitas "Meat"
Potatoes	Egg
Spinach	Gluten Sticks
Jerusalem Artichoke	Apples

Gluten Bread	Nuts
Kumyss	Nut Butters
Buttermilk	Nut Oils
Butter	Sour Oranges
Tomatoes	Cottage Cheese
Dandelion Greens	Celery
Lettuce	Asparagus
Cucumbers	Olives
Beet Tops	Parsley
Endives	Okra
Cauliflower	Cabbage
Brussels Sprouts	Oyster Plant
Onions	String Beans
Water Cresses	

The Sanitas Nut Food Co., Ltd., of Battle Creek, Mich., have an especially valuable line of gluten and nut foods for diabetics.

Since many of these recipes are suitable for the entire family, the amounts in the recipes are given for a family of four. The "Calories in Common Measurements" do not include articles given the preceding month.

Breakfast

	Quantity	Proteids	Fats	Carbo Hydrates	Totals
Sour Oranges	1	4.5	2.5	67.5	74.5
Potato Meal Puree		5.8	28.1	38.9	73.3
Cream Baked Eggs	2	59.1	194.7	11.9	265.8
Gluten Puffs	3	66.2	41.6	66.7	177.5
Butter	1/2 oz.	.6	113.3		113.9
No Coffee with Cream	1/2 c.	3.2	55.4	5.9	64.6
		139.4	435.6	190.9	769.6

Savory Potato Meal Purée ("Science in the Kitchen")

	Proteid	Fats	Carbo-hyd.	Total
1 Small Onion or				
2 Stalks Celery				
1 cup Boiling Water				
1/4 cup Cream	6.5	110.9	11.9	129.4
1/4 cup Potato Meal	16.9	1.5	145.5	163.9
3/4 cup Cold Water				
Salt				
	23.4	112.4	157.4	293.3
1/4 of Totals	5.8	28.1	38.9	73.3

Steep the onion or celery in the boiling water a few minutes, then remove with a fork, add salt, and stir in the potato meal braided with cold water, and lastly the cream; cook until thickened.

Cream Baked Eggs

	Proteid	Fats	Carbo- hyd.	Total
2 Eggs	52.6	88.8		136.4
$\frac{1}{4}$ cup Cream	6.5	110.9	11.9	129.4
Salt				
	59.1	194.7	11.9	265.8

Break two eggs into a baking dish, salt if desired, and cover with cream. Bake in the oven about eight minutes or until jellied.

Gluten Puffs

	Proteid	Fats	Carbo- hyd.	Total
$\frac{3}{4}$ cup Water				
$\frac{1}{4}$ cup Cream	6.5	110.9	11.9	129.4
1 Egg	26.3	41.9		68.2
1 cup 40% Gluten flour	232.0	13.5	255.0	501.5
Salt if desired				
	264.8	166.3	266.9	699.1
$\frac{1}{4}$ of Totals	66.2	41.6	66.7	177.5

Sift the flour. Beat the yolks of the eggs together with the water until full of bubbles; add the salt and flour gradually, beating about twenty minutes, and lastly the stiffly beaten whites of the eggs. Turn into hot, oiled gem irons and bake for one hour.

Dinner

	Proteid	Fats	Carbo- hyd.	Total
Cream of Celery Soup	10.5	111.7	27.7	149.9
Protose Roast with Tomato Jelly	12.4	8.5	10.4	31.3
Cauliflower with cream sauce	5.0	1.8	21.5	28.3
Mock Chicken Salad	17.8	116.3	36.5	170.6
Gluten Bread 2 slices	35.6	228.8	21.6	386.2
Butter 1 oz.	69.6	4.0	76.4	150.0
Pine nuts 1 oz.	1.2	226.6		227.8
	39.5	131.7	8.0	179.0
	119.6	929.4	202.1	1323.4

Cream of Celery Soup

	Proteid	Fats	Carbo- hyd.	Total
1 pt. Chopped Celery	13.0	3.0	39.0	55.0
1 pt. Boiling Water				
1 cup Cream	26.1	443.7	47.7	517.5
1 heaping tsp. Gluten flour $\frac{1}{4}$ oz.	2.8	.2	24.2	27.7
	41.9	446.9	110.9	600.2
$\frac{1}{4}$ of Totals,	10.5	111.7	27.7	150.0

Chop quite fine enough fresh, crisp celery to make a pint, and cook until tender in one pint of boiling water. When done, add the cream, salt, and gluten flour, braided with a little cold water; cook a few minutes longer and serve hot.

Cauliflower with Cream Sauce

	Proteid	Fats	Carbo- hyd.	Total
Medium sized Cauliflower	33.6	20.8	88.0	142.4
1 cup Cream	26.1	443.7	47.7	517.5
$\frac{1}{2}$ cup Water				
2 level tsp. Gluten flour $\frac{1}{4}$ oz.	11.6	7	12.2	25.0
Salt				
	71.3	465.2	147.9	684.9
$\frac{1}{4}$ of Totals	17.8	116.3	36.5	171.2

Prepare the cauliflower by removing the outside leaves, cutting off the stalk about two inches below the flower, and washing in several waters. Then place with the top down, in a pan of salted water to drive out any insects which may be hidden within. Break into small sections and steam or boil in a small amount of water until tender. Serve with a cream sauce made by heating one cup of cream and one-half cup of water to boiling. Then add the salt and two level teaspoonfuls of gluten flour braided with a little water.

Protose Roast

	Proteid	Fats	Carbo- hyd.	Total
$\frac{1}{2}$ lb. Protose	45.6	32.0	20.4	98.0
$\frac{1}{2}$ cup Strained Tomato Bay Leaf	6.3	2.2	21.1	29.6
Salt				
	51.9	34.2	41.5	127.6
$\frac{1}{4}$ of Totals	12.9	8.5	10.4	31.3

Cut a pound of protose lengthwise through the center. Take one-half of it and place in a baking pan. Baste with



the tomato to which a bay leaf and salt have been added. Bake in a moderate oven for an hour. Serve with tomato jelly.

Tomato Jelly

	Proteid	Fats	Carbo- hyd.	Total
1½ cups Canned or Stewed Tomatoes	18.2	6.5	61.1	85.8
2 Bay Leaves				
1 Small Onion	1.9	.8	11.6	14.3
½ tsp. Salt				
½ tsp. Celery Salt				
½ box Sanitas Vegetable Gelatine			13.5	13.5
¼ cup Lemon Juice	20.1	7.8	86.2	113.5
¼ of Totals	5.0	1.8	21.5	28.4

Soak the vegetable gelatine in warm water an hour or more. Put the tomatoes, with the seasonings, to cook. When it is reduced one-fourth, add the vegetable gelatine, from which the water has been drained, and let boil five to ten minutes. Strain and turn into small individual molds or a flat-bottomed pan which has been wet with cold water. If a pan is used the jelly may be cut into cubes. This is also excellent served on a lettuce leaf with mayonaise dressing.

Mock Chicken Salad

	Proteid	Fats	Carbo- hyd.	Total
½ lb. Nuttolene	115.2	221.6	64.8	401.6
¼ cup Chopped Celery	3.2	.8	9.7	13.7
Dressing				
1 Yolk of Hard boiled Egg	10.8	41.3		52.1
1 Yolk of Raw Egg	10.8	41.3		52.1
¼ cup Olive Oil		561.2		561.2
¼ tsp. Salt				
Juice of ½ Lemon			6.7	6.7
¼ cup Whipped Cream	2.9	49.3	5.3	57.5
¼ of Totals	142.9	915.5	86.5	1144.9
	35.6	288.8	21.6	386.2

Cut the nuttolene into small cubes and toast until a light brown. Add the chopped celery and the dressing made by creaming the hard-boiled yolk with a little water and adding to the beaten raw yolk. Add the salt and then the olive oil, drop by drop, beating vigorously all the time. A small Dover egg-beater is best for this. After a spoonful or so of the oil has been dropped in, it may be added a little faster and in larger quantities. After about half the oil has been added a part of the lemon juice is added. Continue to alternate with the oil. When

all the oil and lemon juice have been used add the whipped cream, pour over the nuttolene and celery and serve on a lettuce leaf.

Gluten Bread

	Proteid	Fats	Carbo- hyd.	Total
¼ cup Warm Water				
½ tsp. Salt				
½ cake Compressed Yeast				
3 cups 40% Gluten flour, cut into 20 Slices	696.0	40.5	765.0	1504.5
1 Slice	696.0	40.5	765.0	1504.5
	34.8	2.0	38.2	75.2

Have all the ingredients lukewarm. Put the yeast to dissolve in one-eighth cup of warm water. Mix water, salt, and dissolved yeast together. Stir in flour with spoon until thick as possible. Knead in rest of flour on board. Let rise about one and one-half hours. Knead and form into a loaf. Let rise one hour, bake one hour. While rising it should be kept at a temperature of 90 or 95 degrees. This quantity is for one loaf.

Luncheon

	Proteid	Fats	Carbo- hyd.	Total
Toasted Gluten Biscuit	2 48.5	2.8	56.1	107.4
Butter	½ oz. .6	113.3		113.9
Kumyss	1 glass 19.8	33.6	37.8	91.2
	68.9	149.7	93.9	312.5

Calories in Common Measurements

	Proteid	Fats	Carbo- hyd.	Total
1 cup Celery Chopped	6.5	1.5	19.5	27.5
1 cup Potato Meal	67.8	6.0	582.0	655.8
1 cup 40% Gluten flour	232.0	13.5	255.0	501.5
1 Medium Sized Cauliflower (1 lb.)	33.6	20.8	88.0	142.4
1 lb. Nuttolene	230.4	443.2	129.6	803.2
1 cup Whipped Cream	5.8	98.6	10.6	115.0
1 Yolk of Egg	10.8	41.3		52.1
1 Baked Sour Apple	3.3	7.8	99.6	110.4
1 cup Olive Oil			2244.8	2244.8
1 lb. Almond Butter	416.0	2444.8	342.4	3203.2
5 Sour Oranges Medium Sized	4.5	2.5	67.5	74.5
1 Slice Gluten Bread	34.8	2.0	38.2	75.2
1 Large Potato	27.2	2.4	172.0	199.2

The Daily Ration

	Proteid	Fats	Carbo- hyd.	Total
Breakfast	139.4	435.6	190.9	769.6
Dinner	191.6	929.4	202.1	1323.4
Luncheon	68.9	149.7	93.9	2405.5
Total	299.9	1555.1	486.9	2405.5

Sunstroke and Overheating

SUPPOSE one has been overheated, or had an attack of sunstroke; what is to be done? Water is the life saver, the best means in the world of rescuing one from the effects of sunstroke or overheating. Hippocrates, who lived three hundred years before Christ, had a very simple method of treating people for sunstroke. His plan was to have one person pour cool water on the patient while two or three others rubbed him vigorously. The application of cold water alone is dangerous, because it drives the blood inward; but when cold water is applied, and accompanied by vigorous rubbing, the blood is kept at the surface, and the body is rapidly cooled.

When sunstroke is about to occur, there is an elevation of temperature, the skin is dry, and the man stops sweating, so that there is no evaporation. But perspiration, the evaporation of which is constantly cooling us off, carries away the heat of the body so rapidly that the temperature does not ordinarily rise

above 100° (98.5° in the mouth, or 100° in the interior of the body). This is the temperature at which the vital processes are naturally carried on, and if the temperature rises above that, there is usually disease. At a temperature of 107°, death occurs quickly; at 109°, very quickly. If we apply cold water to the skin, and at the same time rub the surface vigorously, this brings the blood into the skin, and keeps it there, thus encouraging the cooling off.

Sunstroke is a very dangerous accident, and is likely to prove fatal without proper treatment; but by the aid of cold water poured from a height of five or six feet, the water being about 60° or colder (ice water, if you can get it), and with two or three people rubbing the patient vigorously, we may expect a cure in almost every case. Especial pains should be taken to wet the head and back of the neck, and to keep these parts cool. Continue the rubbing both until the skin is well reddened and consciousness restored. J. H. K.

The Real Source of Energy

The feeling of strength which one has after eating beef tea or beef juice, or bouillon, or chicken broth, or beefsteak is an ephemeral feeling of strength, but *not only* of strength. It is a stimulating effect—the same sort that one feels after taking brandy or wine.

Dr. Edward Smith, of England, and his assistants experimented with tea, coffee, beef tea, and similar things, and found that when they took those substances they had a greater readiness for effort. They could work, could walk,

could exercise more easily, but the sense of fatigue afterward was greater. Dr. Horsely, an eminent London physician, found that when he applied beef tea or Liebig's extract of beef to the brain of a monkey, the cells were paralyzed at once, so that the connecting muscles no longer contracted. This shows the effect of beef tea upon the brain—it is *paralyzing*. The reason why one feels stronger after eating meat is not because he is stronger, but because the nerves which notify him of fatigue are suppressed, or paralyzed.



WRONG AND RIGHT WAY OF DOING THINGS

Children's Department

A "Good Health" Picnic

ONE of our little readers bounded into her mamma's sitting-room on a summer day, exclaiming, "O mamma, we're going to have a picnic. Aunt Nan's children are going, and they say we must go, too, and Olive, and Aunt Jenny; 'cause we want to have all the good times we can with Uncle Nat before he goes back to the city. We can go, can't we?"

"Why, probably; where is the picnic to be held?"

"At the lake; and, mamma, may I wear my white dress? Linny is going to wear hers, and most likely Olive will wear hers, too."

"You would be in danger of ruining it at the lake."

"Oh, but I'll be careful."

"Would you rather wear your white dress and have to be careful of it all the time, or wear the seersucker, and be at liberty to ramble through the woods and brush, as you will want to, after flowers and ferns, and ride in the row-boat, and hunt stones and shells, and climb the banks, without being afraid of injuring your clothes? The seersucker will not tear as easily as the white, and it is much more easily laundered."

Nina hesitatingly consented to her mother's plan. She wanted to look as nice as the other girls, but still she was an observing little person, and had discovered that her mother's way always proved the best way in the end.

How many of our little readers have been acute enough to find out that their mothers know best? We know some dull children who seem not to have learned that yet, and sometimes they appear to very poor advantage, on account of thinking that they know better than their mamma does.

Soon Nina asked, "May I go and tell Olive and Aunt Jenny about the picnic?"

Permission obtained, she sped away, but within an hour she returned, exclaiming: "They're going, and they intend to take lots of things. What are we going to take? And Olive expects to wear her white dress," this last being added in a half-regretful tone.

"What shall we take?" repeated her mamma. "Oh, we will take a hammock, and bathing-suits, and—"

"But I mean to eat!"

"Do they propose to go before dinner? Then we will take some nice light buns for hungry folks, and some lemons, and fruit in abundance."

But here Nina interrupted, "Aunt Jenny's going to take lemon pie, and orange cake, and banana cake, and pickles, and—there come Glen and Linny!"

They were Aunt Nan's children. Their arrival was immediately followed by the declaration from Glen, "We're going to fish out there! and papa's going to teach us to swim, too. He wouldn't let us learn of the boys, 'cause I might get drowned."

"O Glen Olney," exclaimed his sister, "didn't papa tell you there wasn't any such word as 'drowneded'?"

"Well, I mean might drowned."

"No; might drown, or get drowned. Aunt Delphia, what are you going to take? Mamma says she's going to take old-fashioned things,—such as any one else won't be likely to take,—sandwiches; and Yankee cheese, and catsup, and—"

But Glen again began: "And papa is going to fix a pole to practise gymnastics on; and we're going to have lots of fun."

The day appointed for the picnic arrived, the party reached the lake, and the good time began, though Nina's pleasure was marred a little by the contrast between her dress and her cousins'; and Olive's brother Bert annoyed them by teasing to have dinner the first thing, and Aunt Jenny had a headache because she had worked so hard making preparations for the picnic.

Nina confessed to her mamma, privately, that she would rather go without cakes than have her get nervous and "fidgety" baking them.

Soon some of the children began running races along the shore, then hunted ferns and flowers, found fungus brackets on old dead trees, gathered wild berries, waded after water lilies, tried their skill at climbing, etc.

When they got hungry and, as the old people thought, tired,—though the children declared they were not tired,—Uncle Nat told them stories about the city, while they rested on the grass and in the hammocks.

When they came to dinner, Aunt Jenny exclaimed: "O Bert; how you are soiling your clothes romping about so! I do wish you would be more careful."

"I have been careful; haven't I, mamma?" asked Olive.

"I should think you had," volunteered Aunt Nan, "you have scarcely been out of the hammock all day."

"Well, for my part," added Uncle Nat, "I would rather see the children enjoy themselves, even if they don't keep quite so clean."

"You might think differently, if you had to pass through the ordeal of washing-day and ironing-day a few times."

Nina gave her mother a wise look, and said, privately, "I'm so glad I wore my seersucker."

"I'm afraid some of these little folks will spoil their appetites for everything, at the rate at which they are eating," remarked Uncle Nat, as they sat at lunch under the trees. "I must tell you about a little boy that the superintendent of a Sunday-school found crying at a picnic, because he hadn't had all he wanted to eat. The superintendent proposed to find some one to wait on the little fellow, so he could finish his dinner; but the boy explained, 'Oh, no, there's enough here to eat, but I ha'n't got room for any more!' And sure enough, his stomach was full, and his pockets were full, and his hands were full; but he wasn't satisfied."

"Wish you had kept the bananas separate from this cake, Aunt Jenny; then I could have eaten them," suggested Nina.

"Can't you eat them as they are?"

"Yes, I could; but I'm afraid if I eat too many kinds of victuals, they might get into a quarrel down there."

When the day began to grow cooler, a boat-ride was proposed; but who was going? Linny had a headache; her mamma guessed she had eaten too much cake. Bert was whining dolefully; Nina suggested that his pickles and cheese were probably having a conflagration, and he was suffering the consequences. Linny was mourning over a fruit-stain on her

dress, drabbed skirts, and water in the bottom of the boat, which hindered her going.

Uncle Nat exclaimed, "Nina and Glen seem to be my only stand-by's;" to which Aunt Nan replied: "We'll hear from Glen hereafter, though; he's always cross for several days after eating such a big dinner."

"How is it with Nina? She didn't eat very much, did she? Saving your appetite for future usefulness, Nina? Thought you wouldn't spoil your day's pleasure for the sake of a big dinner, eh?" said Uncle Nat.

"It was rather hard to go without some of the things, and I did want some more fruit; but I knew I wasn't hungry

any more, so I quit, and I'm glad now that I did. Come on; I'm ready for a boat-ride."

"But where are the others?"

"Oh, Aunt Nan has a sick headache, because she didn't have any tea. Mamma doesn't drink tea at all, and she never has sick headache."

"Come on, Glen! Where is your pole? I thought you were going fishing."

"Oh, I don't feel like fishing, or anything else, this afternoon."

"Ah! paying for that big piece of lemon pie you ate?"

Then Nina remarked, "I guess, Uncle Nat, that you and mamma and I had a "good health" picnic to-day; and that's the best kind, after all."

A Castle in the Air

FEATHERLY-FLUTTER and figgety-wing,
Twitter and flitter and warblety-sing,
Were five little birds who lived, one spring,
In the castle in the air.

Each was as happy as queen or king,
Without a care about anything;
When the mother bird a worm would bring,
Each birdling had a share.

If a bee came by with a flip and a fling,
They welcomed him gaily, nor feared his sting;
And they cheerily chirped as they sat in a ring,
While the bee flew here and there.

When their little air-castle would sway and
swing,
Then closer together the birds would cling,
And merrily chirrup a ting-a-ling-ling,
For the gladness everywhere.

— *Edwina Robbins, in St. Nicholas.*



By the Editor

Summer Complaints

OF the various maladies which are most frequent in the hot months of the year "bowel troubles" occupy the chief place, both on account of their frequency and because of their fatality. When the thermometer gets up into the nineties babies wilt and die, like houseplants in the sun. Extreme heat is a powerful vital depressant. Under the influence of heat the body becomes more susceptible to the action of germs. This is one of the principal causes of the fatal maladies which are so frequent during the hot months.

The most active cause of summer maladies is germs of various sorts. These are communicated through dust, in which they rapidly multiply by decomposition, especially in cities where the air is often charged with millions of germs to the cubic yard.

Cow's milk is another source of dangerous germs. Milk always contains countless numbers of colon or manure germs, which are capable of setting up cholera morbus or cholera infantum, and other forms of gastro-intestinal disorders, especially in young and feeble children.

Fruit is another source of mischief. Not that the fruit itself is unwholesome, but when exposed for a long time in the market it often undergoes partial decomposition. When decomposition has not actually begun the surface of the fruit is often covered with molds and germs of various sorts, more or less of which are likely to be swallowed when the fruit is eaten.

These germs are often of a deadly character. Fruit should always be fresh and ripe, and should be well sterilized. For thorough sterilization, fruit should first be well washed. Such fruit as cherries, apples, and similar fruits may be washed with soap-suds or a half-of-one-per-cent solution of formaldehyde. After disinfecting the fruit should be thoroughly washed. Another excellent plan is to dip the fruit for ten or fifteen seconds into boiling water after thorough washing.

Stale vegetables are of all things particularly unwholesome, not only because of infection with germs, but because of their indigestibility. Cheese, moldy bread, putrid meat, stale milk, especially in the form of ice cream,—these and other foods in which decomposition has begun, are a frequent source of gastro-intestinal disorders.

The drinking of ice-water weakens the digestive organs and opens the way for inflammatory disease. Ice-water, if taken at all, should be taken in small sips. Copious drinks of ice-water should never be taken, especially when overheated and exhausted. Getting chilled is another means by which the general vital resistance is lowered and the door opened for inflammatory or other infectious troubles. Extreme exhaustion renders the body exceedingly liable to disease.

The hot months are not necessarily more unfavorable to health than the cool portion of the year. It is only necessary that spe-

cial precautions should be taken. With proper care, the summer season affords an opportunity for laying up a stock of vigor and vitality through the increased

amount of sunshine, the free perspiration induced by the higher temperature, and the great abundance of fresh fruits which the summer season brings.

Animal Proteids Inferior to Vegetable Proteids

ONE of the stock arguments of those who insist that flesh foods are a necessary part of man's bill of fare, is that proteids derived from the flesh of animals resemble more closely the proteids of human flesh, and hence must be more readily assimilated. This argument has been literally crushed by the experiments of Cohnheim, Henderson, and Dean, who have shown that proteids are not utilized in the body as such, but that before absorption they are, at least in large part, completely broken down into crystalline products so that whatever may be the nature of the proteids the digestive process brings them all to the same condition before absorption.

The case is really, then, to use a simple illustration, somewhat like this: A man wishes to build a house. Shall he build his house with brick fresh from the kiln or shall he obtain his brick by tearing down some other house. The actual brick are exactly alike, but there is nevertheless a difference between them in the fact that the brick which have been once used in a house are likely to have some fragments of mortar clinging to them, whereas the brick fresh from the kiln are smooth and clean and hence more convenient for use. To say that proteids derived from the vegetable kingdom, from whence all proteids originally come, which have been once built into an animal body can be more readily utilized by another animal because of this fact, is, according to these experiments, practically the same thing as to say that brick which have been once used in the construction of a house, by such use are somehow rendered more convenient or suitable for use in house construction than are brick fresh from the kiln which have not been so used.

The fallacy of this argument resides in the supposition that proteids are utilized in the form in which they are presented to the body; whereas, in fact, proteids, whatever their origin, are complex structures which must be torn into their constituent elements before they can be utilized, just as brick houses to be used in the construction of other brick houses must first be reduced to the original bricks out of which the new houses must be constructed just as were the original ones.

Within the last few years Professor Lafayette B. Mendel, of the world-famous Sheffield Laboratory of Physiological Chemistry of Yale University, in conjunction with his students, has carried on extensive researches in relation to the question of the absorption and utilization of proteids. He has, to a considerable extent, confirmed the facts above cited, and, to use his own words, has found that "the typical vegetable proteids show no marked difference from those of animal origin in their relation to the processes of metabolism."

Professor Mendel observed the fact that when injected directly into the blood the utilization of vegetable proteids "was unusually good in practically all of the trials." At least one vegetable proteid, edestin, when injected into the blood or peritoneal cavity was found to be absorbed without the appearance of proteose in the urine.

No experimental facts have ever been presented to show that animal proteids are more easily assimilated than vegetable proteids. The experiments quoted have been entirely inadequate to prove this. They have only shown that in their natural state when eaten in the form of peas and beans, proteids were less completely absorbed from the alimentary canal than when taken in

the form of meat. No regard seems to have been given to the fact that in beans the proteids are entangled in a compact structure of cellulose, starch, and other products which must, to a considerable degree, interfere with the action of the digestive fluids upon them, and a considerable portion of proteid must adhere to the undigested residue which is discharged from the intestines.

One by one the arguments by which even scientific men have sought to defend the practise of flesh eating have melted away in the advancing light of modern laboratory research. But now, this, the last excuse which has been offered on scientific grounds, has finally disappeared, and the partizans of a flesh diet must be forced to admit that custom and the demand of the palate are the only apologies which can be offered for the destruction of animals as a source of food. In the light of these facts how perfectly appalling is the spectacle presented by the great packing-houses and the horrible industries connected with them, the disgusting details of which have been so graphically set forth by Mr. Sinclair and the United States Commissioners who confirmed the awful charges made by the

novelist. In the light of modern physiologic research, confirmed by the testimony of thousands of experienced clinical observers, flesh eating is unnatural, harmful, and unnecessary; and hence the whole packing industry is an excrescence, and in the light of recent revelations an extremely unclean and loathsome excrescence, upon our modern civilization,—a veritable Pandora's box of death-dealing ills, a putrescent fountain spouting out disease, misery, and corruption of various sorts, physical, social, moral, with the activity of a Yellowstone geyser, sending its festering streams of deadly germs and abominable parasites, trichinae, tapeworms, etc., in every part of the civilized world.

No intelligent man or woman can afford to longer neglect the study of dietetics. We are made of what we eat. What we swallow into our stomachs to-day is walking around and talking to-morrow. We must earnestly study. If we would have the strong, live, enduring, forceful minds and bodies necessary to keep pace with the strenuous life of the twentieth century, we must obey the Bible injunction, "Eat ye that which is good," and "Eschew that which is evil."



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—Thorndike in the Philadelphia Press.

The Out-of-Door Life

THOUSANDS are coming to appreciate more and more the value of the outdoor life.

Physicians have discovered that the advantages of the outdoor life are far superior to those of any other form of treatment or medication in cases of consumption or tuberculosis of the lungs. Proper eating, and continuous life out of doors cure sixty to seventy per cent of cases of consumption which are given the advantages of this method early in the disease.

Life out of doors is equally potent as a curative measure in other chronic diseases as in disease of the lungs.

One of the greatest advantages of the outdoor life is the exposure to the direct rays of the sun. The sun's rays are vitalizing, healing, disinfecting, and stimulating to all the vital processes.

Exposure of the skin to the sun is an effective means of curing nearly all forms of skin disease. Stimulation of the skin produced by contact with the sun's rays diverts the blood from internal parts to the surface, and thus relieves congestion of the stomach, liver, and other internal organs.

The cold air which one encounters out of doors is one of the most powerful of all vital stimuli. Improvement in the appetite, increase in nerve-tone and vital resistance, and acceleration of all the functions of life are the result of continuous contact with cool air.

The purity of the outdoor air is also a

factor of great importance. Indoor air is confined air. The mere confining results in contamination by the poisons thrown off by human bodies, the volatile poisons associated with the growth of molds and other fungi, poisons from lamps, coalstoves, and furnaces. All these are sources of contamination which vitiate indoor air and render it unfit for respiration. Persons with good strong vigor may endure these conditions for a long time without injury; but an invalid exposed to these objectionable influences suffers immediately, and unless speedily placed under better conditions may suffer irretrievably.

One of the greatest of all advantages of the outdoor air is that it is pure air, at least the purest that can be got.

Close contact with nature is always inspiring. There is something invigorating and healing in the association with the trees, flowers, grass, birds,—all the world of things which interest the invalid when brought to the sickroom in the great amphitheater of nature out of doors.

Take the sick out of doors. A porch, an awning, an arbor, a tent, the sheltering branches of a tree, a mossy bank, a green cozy-corner—any place out of doors is a good place for the sick one, old or young.

There is no disease which can not be more successfully combated out of doors than indoors. There is no malady, chronic or acute, in which the outdoor life is contraindicated.

An Unsavory Smell

The stench of the Chicago Stock Yards, which has for so many years polluted the atmosphere of a greater part of the city of Chicago, has finally acquired such a degree of volume and intensity that it has spread itself out over the whole country, and has even reached across the Atlantic. Never before, perhaps, in the whole history of civilization has there been exposed so malodorous and far-reaching an imposition upon the public as the disclosures made in relation to the packing-house business.

Sinclair's description of the crime and filth in connection with the canned meat business and other branches of the packing-house industry, and the rottenness which millions of people are consuming under the guise of sausage and canned meats, has turned the stomachs of multitudes against flesh eating. The cattle on a thousand hills rejoice in the good work which is going on, and so do those who have learned a better way in diet, having excluded flesh meats from their bill of fare. May the good work go forward.

The Skin the Keyboard of the Body

Most chronic invalids are suffering from some form of internal congestion. There is not enough blood in the skin and in the muscles, and too much in the interior of the body. The skin is capable of holding two-thirds of all the blood in the body; so if the blood is drawn into the skin by dilating the blood-vessels, or in some other way, the amount in the interior of the body will be greatly lessened, and the internal congestion relieved.

The muscles are another reservoir for the blood. If the blood is diverted into the muscles by exercising them, or by massage, the congested liver or kidneys, the catarrhal stomach, the intestinal or nasal catarrh will be relieved.

If there is too much blood in the brain or in the spine, these congested parts will be relieved by diverting the blood into the skin.

Great benefit is in this way derived from hydropathic treatment. The towel rub, the mitten friction, wet sheet rubs and frictions of various kinds, operate in the same way by drawing the blood to the surface of the body and relieving internal congestion.

The temperature nerves ending in the skin are connected with all the nerve centers of the brain and spinal cord, and in such a way that the whole body is mapped out upon the surface of the skin. The surface of the face is connected with the brain. A point at the back of the neck is connected with the base of the brain. Certain areas of the skin are connected with the lungs, the heart, the stomach, the intestines, the pelvic viscera. When cold applications are made to these surfaces, the result is contraction of the blood-vessels

of the internal parts with which they are connected. For instance, apply ice over the heart, and it makes the heart contract and beat harder and slower, but with greater force. Apply ice over the lungs, and it relieves the congestion of the lungs. The best thing to check hemorrhage of the lungs is an application of ice over the lungs, which causes contraction of the arteries of the lungs. For a congested liver, extremely cold water should be used over the liver; a cold jet, an ice-bag, or a cold compress will cause contraction of the vessels.

The skin is a sort of keyboard on which the experienced hydropathic doctor plays, as the pianist plays upon the piano. If he wants to operate on the lungs, he uses the lung key. If he wants to make an impression on the stomach, he touches the stomach key with cold water, which brings an immediate response. By means of a knowledge of these facts the physician is able to control every vital function of the body with simple hydropathic measures, and by applications of electricity, and massage. By the alternation of heat and cold we are enabled to control the circulation of the blood through every organ of the body.

This is a thoroughly scientific system that has been developed by years of research on the part of hundreds of men and women. There is nothing more scientific in therapeutics to-day than the use of water; but unfortunately it is used empirically by many. The world is finding out the value of massage, electricity, and water in the treatment of disease, and the medical profession are constantly giving more and more attention to these simple, natural forces.

SIR FREDERICK TREVES, one of the most eminent of London surgeons, who operated upon King Edward when his life was in danger from acute appendicitis, in a recent address at Westminster, denounced the use of alcohol in such unmeasured terms that quite a sensation was produced among

the alcohol-loving people of Great Britain. Every surgeon of wide experience has encountered in his practice sufficient evidence against the use of alcohol to lead any intelligent man not addicted to the use of this drug to forswear it for himself and forbid it to his patients.



Question Box

10,345. Charcoal Tablets—Sticky Saliva—Simplex Spirometer.—A. B. E.: "1. Are any harmful effects liable to follow the prolonged use of charcoal tablets sold by the Sanitas Nut Food Company? 2. What is indicated by abundant sticky saliva? 3. What are the bad effects of swallowing mucus? 4. How can this habit be broken? 5. Do you know anything of the Simplex Spirometer made by E. Payson Ryder of Brooklyn, N. Y.? 6. Is its principle as a lung-testing instrument correct? 7. What should be the nature and principles of a correct spirometer? 8. Would not continual practice on a proper spirometer be very effective as a lung developer?"

Ans.—1. Probably not.

2. Low vital resistance and the growth of bacteria in the mouth. Such a condition of the saliva is apt to injure the teeth. The mouth should be rinsed out several times daily with a weak solution of bicarbonate of soda—half a teaspoonful to a cup.

3. Mucus swallowed from the mouth carries into the stomach germs which may prove injurious to the stomach.

4. First, by giving careful attention to the matter, and second, by cleansing the mouth several times daily with some simple antiseptic mouth lotion, such as cinnamon water.

5. No.

6. We do not know.

7. The principal thing is that the spirometer should be accurate.

8. The best means of developing the lungs is to take such exercises as create a necessity for vigorous breathing. In other words, an air hunger must be created. This method is far superior to any mechanism of any sort, since it produces a thirst for air.

10,346. The After-Treatment of Diphtheria.—Mrs. F., Wisconsin: "Please advise treatment for a boy of seven who has had diphtheria one month following an attack of scarlet fever."

Ans.—It being understood that the boy has recovered from the diphtheria, and re-

quires only general recuperation, we would prescribe an outdoor life, sleeping in a tent; a simple, nourishing, non-flesh dietary; and cold bathing twice daily. The cold bath should be administered very carefully. At first it should consist of a cold wet hand rub, in which the hands of the nurse are dipped in cold water, and then employed in rubbing the various parts of the body systematically.

10,347. Nervous Headache.—E. J., Ohio: "1. Is a severe neuralgic headache every two or three weeks, sometimes two or three days of each week, a nervous headache? 2. Suggest treatment and diet. 3. What causes cold feet and hands? 4. What is the treatment? 5. Will tomatoes and potatoes (both cooked), if eaten together, disturb digestion?"

Ans.—1. In a certain sense all headaches are nervous headaches, since nerves only are capable of aching and feeling. It is quite likely, however, that the stomach or the colon, most probably the latter, are also at fault. Indigestion and the accumulation of fecal matters in the colon are among the most common causes of headache.

2. The colon should be emptied daily. The diet should be simple, containing no meat, tea, coffee or condiments, and should be carefully regulated to the patient's needs. It is especially important to avoid the use of an excess of proteid.

3. This is due to a disturbance of the vital centers. It is a common symptom of neurasthenia, from which it is quite likely you are suffering.

4. Exercise daily in the open air. Rub the feet thoroughly with a towel dipped in cold water until they are warm. Vibration to the feet and hands is an excellent measure to stimulate the circulation in these parts.

5. Probably not, if thoroughly masticated.



LITERARY NOTES

No life amounts to much until it has a program—something definite, something particular. Nothing else can take the place of it. Education can not, talent can not, genius can not, hard work can not. Until there is a definite aim, the energies will run to waste, the ability be squandered. The faculties deteriorate when working without a definite aim.—*Success Magazine*, July.

The third article in the series on "The Railways of the Future," in *Scribner's* describes the great Canadian project of a new transcontinental road, backed by the Government for fifty million dollars. This road, officially known as the Grand Trunk Pacific, will open up the great Northwest, where are boundless wheat lands. In the July *Scribner*

this daring and romantic project will be described by Hugh D. Lumsden, chief engineer of the Government section, and Cy Warman, the well-known writer of railroad stories. The bearing of this project on the development of our own Northwest is very important. Already thousands of emigrants have left Montana and other States for this region.

The epidemic of typhoid fever in Chicago in 1902 fixed guilt on the fly. It was especially severe in the nineteenth ward, which furnished one-seventh of the deaths, while containing but one-thirty-sixth of the city's population. This locality did not differ from the rest of the city in its water or its food supply, but it did differ in having more than fifty per cent of its houses without sanitary plumb-

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ing, the water being insufficient. Flies caught in undrained closets, on the fences, and in the room of a patient were proved to carry the germ.—From "*The Responsibility of Disease Laid to the House-Fly,*" in the July *Delineator*.

Copenhagen, Denmark, is a city of canals and cleanliness—a land of pure delight, free from beggars, organ-grinders, and stray dogs. The inhabitants thereof are born courteous and seem never to have recovered from the habit. When a passenger boards a car in Copenhagen, he exchanges greetings with the conductor; a gentleman, on leaving the car, usually lifts his hat in acknowledgment of a salute from that official. When a fare is paid, the conductor drops it into his cash-box, thanks the passenger, and gives him a little paper receipt. He offers change with a preliminary "Be so good," and the passenger accepts it with thanks. If, in addition, transfers are required, complimentary exchanges go on indefinitely. Yet there is always time enough in Copenhagen.—From "*Courteous Copenhagen,*" by Caroline Domett, in *Four-Track News* for July.

If the removal by act of Congress of the tax on denatured alcohol produces all the beneficial results expected, light, heat, and power in many general and useful applications are going to be a great deal cheaper. The odious smell of gasoline will vex the nostrils no more. Kerosene will be an expensive illuminant in comparison. We shall wash, iron, drive on land and water, read, plow, harrow, and generally live and move by means of denatured alcohol. Doubtless there was some exaggeration in the "claim" of its friends, but much has been done with it in Germany, and the petitions of all sorts of persons and interests for the removal of the tax showed how wide was the expectation of good results from free denatured alcohol.—"*With the Procession,*" *Everybody's Magazine* for August.

John M. Bulkley's article, "The Transfigured Niagara," is the leading article in the August *Pilgrim*, and shows the great falls in summer contrasted with the fastness of the frost king. The illustrations are beautiful and really wonderful.

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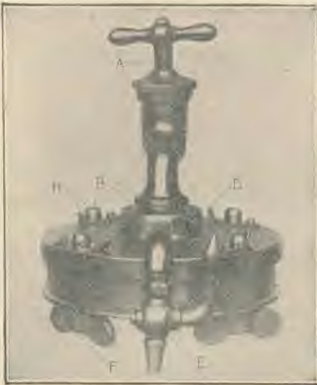
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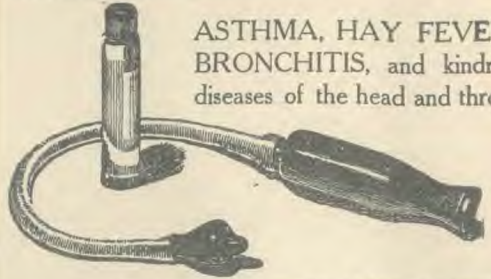
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