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THE HYGIENE OF BEAUTY.

BY J. H. KELLOGG, M. D.

"As a man eateth, so is he," runs an old German proverb. Food constitutes the marble, the granite, the strong steel beams and columns, or the wood, hay, stubble, mud, untempered mortar, cobblestones, rubbish, of which that wonderful temple, the body, is built. Eating is a divine ministration by which the Creator puts into our bodies his own energy. This energy is passed down in the sunbeam, and by the incessant activity of Omnipotence, is woven into the life, strength, and beauty of fruits, nuts, and grains — that portion of nature's great storehouse of energy, the vegetable kingdom, which God has especially appropriated for the use of man.

It is entirely within our power to choose whether we will supply the daily needs of the body for life and energy from sources which are pure, sweet, good, and beautiful, with bread of heaven direct from the divine laboratory in which it is especially compounded for man's use; or whether we will build our bodies of such rubbish as pickles, chow-chow, blistering condiments, dyspepsia producing pastry, painted confectionery, ices, brandied fruits, putrefying stuffs like cheese and sauer-kraut, the disease-contaminated corpses of animals, with their livers, lungs, kidneys, brains, and other entrails, and offal of various sorts.

The things God made for man to eat are in themselves beautiful, and impart beauty to the eater. The apple, the peach, the plum, the cherry, are beautiful everywhere — on the tree, on the table, in the chubby hand of the baby, set against the teeth of a rosy-cheeked maiden. An ox, a sheep, a fish, a bird, is beautiful as it stands in life, trembling with throbbing impulses, eyes flashing with intelligence; but lying pulseless, flayed, blood-stained, eviscerated, it is a thing hideous, repulsive, and loathsome. Only when it has been dressed and garnished and disguised by those "layers out of corpses," as Plutarch calls them, "the butchers and cooks," are we able to endure the sight of it. We call these dead things by decent names to hide their repulsiveness. One would scarcely relish beef under the name of "roast ox;" "broiled sheep" would certainly be less appetizing than mutton chop; and who of those that enjoy stewed chicken, for example, would be able with any sort of complacency to pick the bones of a dead mother hen with her young brood peeping close at hand?

What awful depravity of taste permits us to turn away from the delectable things which Heaven hands down to us from the trees, in nuts and fruits of infinite variety in form, flavor, color, inviting alike to all the senses, and to plunge down beneath the scum of some stagnant pool to seize a sprawling frog and devour it like a hawk or a turkey-buzzard, or to descend still deeper into the slime and ooze of the ocean bottom to fish out a germ-infected oyster!

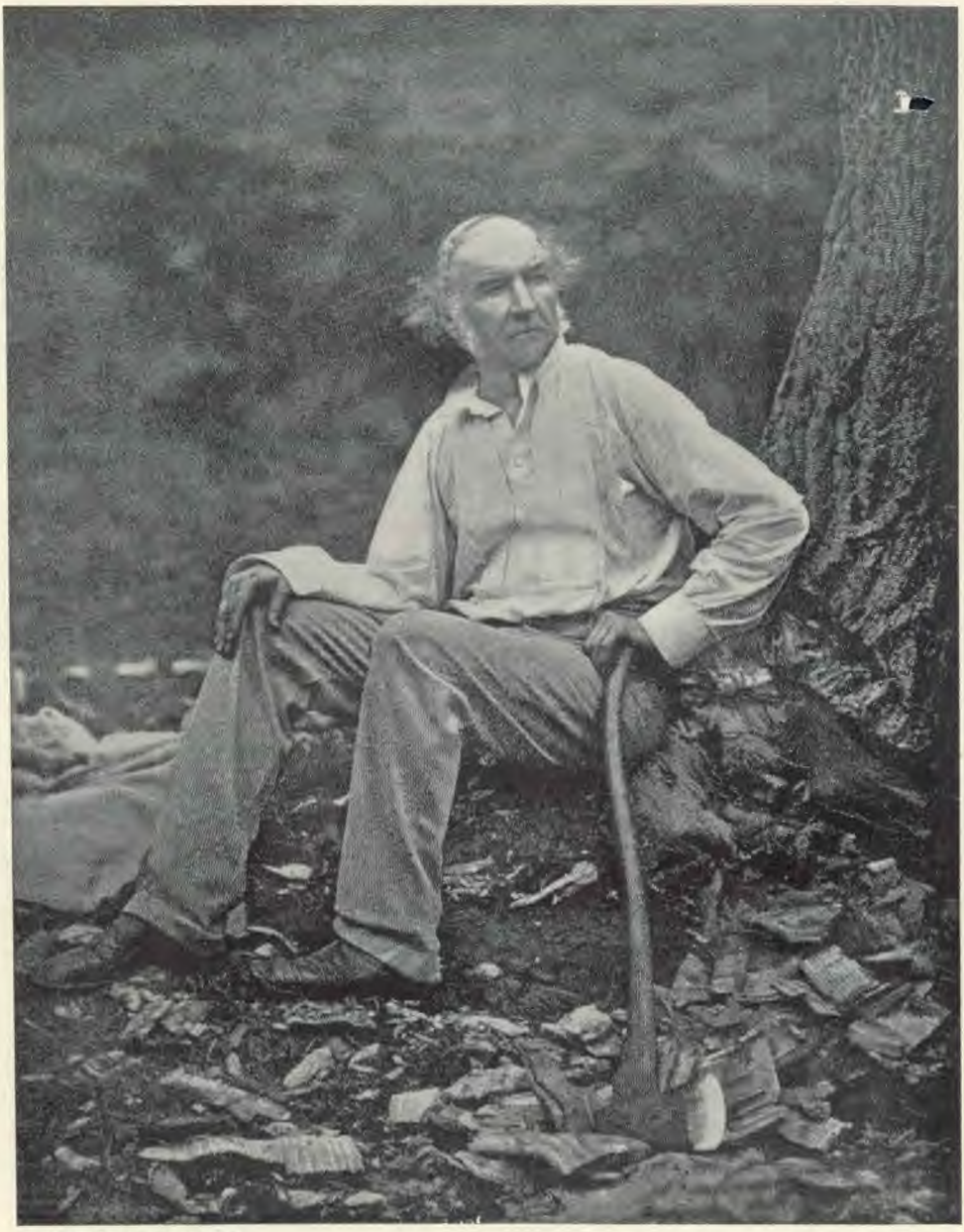
The juices of fruits, and especially the acids which most of them contain, are exceedingly valuable for blood purifying. Used freely, fruit stimulates the action of the liver, the kidneys, and the bowels. In this way the body is freed from impurities, the skin is cleared, the eye is brightened, all of the bodily functions are quickened. Grapes, strawberries, peaches, apricots, apples, pears, bananas, and oranges are especially wholesome. The free use of these fruits is one of the best of all means of removing from the mouth the metallic taste which is indicative of retained excretions, and of cleansing the tongue from the thick coat of germs which is generally found upon it in the case of persons whose skins present a dirty, dingy hue. Many a leathery-skinned dyspeptic has recovered the bloom of health by a six weeks' sojourn among the vineyards of the Swiss Alps, enjoying that most delightful of all therapeutic prescriptions, the grape-cure. The apple-cure, the cherry-cure, the raisin-cure, and other forms of fruit-cures have long been practised in European countries, and to some extent in this country. A fruit diet weeds out the germs which often infest the stomach and make of it a veritable factory of poisons which, diffused throughout the body, paralyze the vital functions, and seriously interfere with the activity of the liver, kidneys, skin, and other excretory organs, besides affecting brain and nerves, sometimes to an extraordinary degree.

For a steady diet, fruit is not sufficiently substantial. It does not contain an adequate amount of the proteid or albuminous elements upon which blood and tissue making depend, but by the addition of nuts to fruit we have a dietary which is perfectly competent to sustain life for an indefinite length of time, and in this combination we have presented, without doubt, the choicest bill of fare which the whole earth affords. Nuts contain not only a sufficient supply of proteids, but fats also, which are usually lacking in fruits, in a form most easily digestible. One of the offices of the oleaginous element is to give to the figure normal rotundity and symmetry. Such nuts as the almond, the filbert, the pine-nut, the hickory-nut, and even the peanut, if properly prepared, furnish fat in its most digestible and assimilable form. I have known a lean-visaged, hollow-eyed, dyspeptic woman to gain half a pound a day for several weeks, on a diet consisting wholly of fruits and nuts, with a moderate allowance of bread in the form of well-browned zwieback.

The cereals are among the most easily digestible of foods consisting largely of starch. They are digested chiefly in the small intestine, being broken up in the stomach by the combined action of the saliva and the gastric juice. For prompt digestion, however, the cereals must be taken dry, and must be so thoroughly cooked that the starch will be, so far as possible, converted into dextrin. It is because of this thorough cooking that the crust of bread is more digestible than the crumb. The twice-baked bread, or zwieback, of Carlsbad, is without doubt as helpful to the multitude of dyspeptics who visit that famous Bohemian watering-place as are the mineral waters which the patients so conscientiously imbibe.

There is not to be found a hardier, handsomer race than the natives of the Canary Islands, whose chief diet is parched, partially browned corn, coarsely ground in a rude mill, and mixed with water. Many a woman whose face was disfigured by ugly blotches and pimples, has acquired a skin as fair as an infant's by adopting a diet consisting of granose, nuts or nut products, and fruits.

It must be added, however, that it is



COURTESY OF MCCLURE'S MAGAZINE.

WILLIAM EWART GLADSTONE.

easy to spoil the most wholesome and effective beautifying diet by the use of tea or coffee. Even chocolate and cocoa must be discarded, not only because of the poisons which they contain and which tend directly to produce muddiness of the skin by inducing indigestion and inactivity of the liver, but also because their use encourages a habit of swallowing food without proper mastication. It is easy to find plenty of girls and boys from twelve to sixteen years of age with sparkling eyes, ruby lips, and plump, ruddy cheeks, affording abundant evidence that health reigns within; but the girl of twenty or twenty-five who has been brought up in the city and has acquired the habits of the ordinary city girl, presents a very different picture. Thin features, pale lips, yellow teeth, dull eyes, sallow skin, betoken premature decay, not by any means, as is generally supposed, as the result of overstudy or too intense devotion to music or art, but rather because she has neglected to cultivate health by correct habits of eating, drinking, exercise, and of life in general.

Most people, especially women, desire a beautiful complexion. Too often, however, their interest in the subject of complexion is confined wholly to that portion of the skin which is ordinarily visible, especially the face and hands. This solicitude for a clear, transparent skin is perfectly proper, but it should extend to the whole body; for such a condition of the skin is one of the signs of health.

A course of life which will produce health and activity of the whole skin will necessarily result in a beautiful facial complexion. There is, in fact, no way by which the skin of the face can be made so certainly and permanently beautiful as by adopting such a regimen as shall bring about health to the whole skin. For this, the daily bath, followed by adequate rubbing, is one of the most essential measures. A warm bath taken at night two or three times a week, and a cold sponge, plunge, spray, or shower-bath every morning, is a practise which has wonderful power as a beautifier. The cold morning bath, followed by a vigorous walk in the cool, fresh morning air for fifteen or thirty minutes, will bring color to the cheeks and brightness to the eyes more rapidly than any medicinal tonic known to the materia medica.

The person who would become beautiful must recognize every law of health, must carefully scrutinize every habit of life. Adequate sleep as well as abundant exercise, proper diet, and the daily bath, must be recognized as essential, for sleep is nature's great restorer and healer. An abundance of fresh air in the dwelling night and day, proper clothing, especially the avoidance of overheating the body with excessive clothing, and the selection of the right materials to suit the varying atmospheric conditions, are all matters worthy of consideration by one whose ideal is beauty.

Another source of beauty is to be found in the contemplation of beautiful things. Soul culture is, after all, the important consideration. Every beautiful object, as well as every beautiful thought, emanates from the divine Source of all good, hence the sure road to idealistic beauty lies through the channel of absolute harmony with God. The study of the beautiful in art, but especially in nature, the cultivation of noble sentiments, the pursuit of truth, the espousal of every good principle, of every worthy cause, self-forgetfulness, complete surrender to noble aims and purposes, looking into the face of Jesus Christ, seeing him in all humanity about us, in all the perfections of the universe of life and beauty that surround us, a daily longing, hungering, thirsting to reflect these graces of heart and mind in the soul, will ultimately lead,

as the apostle tells us, to such a change from "character to character," to such an unfolding of grace and beauty, that even the physical frame will be transformed "through the renewing of the mind," and will be illuminated with the beauty which restores in man the image of his Maker.

VEGETARIAN BOYS AND GIRLS.

BY MARY HENRY ROSSITER.

BESSIE. AGNES.

"IF vegetarianism provides the ideal diet for man, why are so many of its disciples pale and thin?" This is a frequent query, and a pertinent one. The querist refers, of course, to American vegetarians of his own acquaintance and observation. An eminent physician who is an authority on this subject, when asked how to meet the objection implied in the question quoted, said, "That is simple enough, tell them the truth. Most people do not become vegetarians until they have one foot in the grave. They refuse to give up the flesh pots until they are forced to do so. Their stomachs have been ruined by their sins against it, and they are only too fortunate to live at all, to say nothing of looking pale and thin. Most of them would be dead were it not for their reform in diet."

The physician added, "If you wish to

HATTIE. HELENA.

see rosy and plump vegetarians, look at the vegetarian children. You can not find children brought up on rational principles, that are pale and thin."

This physician's own children afford a fine proof of his assertion. They are all rosy-cheeked, healthy, and vigorous. They ride a troop of Shetland ponies. They swim, row, sail, skate, ride bicycles, raise flowers and vegetables, and are well acquainted with forest trees and flowers; keep weather observations, know how to use the saw, plane, draw-shave, chisel, bitts, and all sorts of cabinet maker's tools; they weave baskets, sketch, draw, paint, take care of a large house, do all

CECIL. TERISITA. IVALINE.

sorts of housekeeping, cooking, and laundry work, and are always well and strong.

Bessie, Agnes, Hattie, and Helena are fast growing into young womanhood, and happier, more useful, more sensible maidens could scarcely be found. They have been reared upon strictly hygienic principles. When Bessie was a very little girl, her mother took her upon a railway journey. A lady fellow passenger gave Bessie some candy. The child did not know what to do with it, but finally decided to play with it. When she had a favorable opportunity, she threw it out of the window.

ROBERT. PAUL.

None of the children in this family of fifteen ever thinks of eating candies, or ever sees any meat at home. They all look upon flesh eating with the same feeling that most people have toward cannibalism. Little Ivaline, with some other children, was invited to a birthday dinner. Nothing whatever was said to her about what she should eat or decline. She had some tiny yellow chickens at home, of which she was very fond. One of them she called "Fluffy." When the dinner was served, she was helped to a bountiful plateful of chicken pie. On hearing what it was, she seemed startled and confused. After hesitating for a few moments, and making a brave effort to keep back her tears, she decided to eat nothing, and pushing back her plate, sat

GEORGIE. RICARDO. NEWELL.

in silence throughout the meal. On the way home she confided to her mother that she did n't want to eat any little "Fluffies" made into a pie.

Several adopted children are included in this physician's family. The two little boys, Robert and Paul, were meat eaters when they were taken, and although so very young, Robert being only sixteen months old, they were extremely irritable and ill-tempered. Their dispositions have wonderfully changed for the better under a rational diet. Robert is now four years old, and is an unusually original and lov-

ORA. EVA.

able child. On one occasion he had heard his father and mother talking of Dr. Tanner's fast. The next day he announced that he did not care for any dinner — "only just all the water I want to drink." He resolved to fast, and proposed to do it.

At another time, he and Terisita were playing, and each wished to teach the other gymnastics. Robert, who is generally the dominant spirit, said, "No, Terisita, I teach you. Now! hips firm, neck firm," suiting the action to the words; "position, feet place," repeating the same when Terisita demurred, and wished to be teacher herself.

Terisita is a dear little native child from sunny Mexico. When asked by Hattie, "What makes Robert's hand white and yours dark?" she answered, "God painted mine brown."

Cecil gave as her reason for not eating meat, that God did not give it to Adam when he made out Adam's bill of fare. The children all delight in singing a vegetarian song composed by a member of the family. The following are two stanzas: —

"You may talk of mutton-chop,
You may say it is tip-top
For a man who really wants to live both well and strong;
But you 're much behind the time,
As I 'll show you in this rhyme,
For there 's better food than flesh to make one well and strong.

"It was God's appointed plan,
Given long ago to man,
That no creature of another creature's flesh should eat,
But that all alike should dine,
On the fruits of tree and vine,
And the toothsome grains which Heaven has given man to eat."

Many incidents might be told about this one family, for they are not being educated according to a conventional plan, and have every opportunity to develop individual talents. Among other enterprises they conduct a complete printing-office, and publish a paper called the *Cricket*. We quote from it an account of a vegetarian dinner prepared by the girls. The account was written, edited, and printed by the children, who also arranged the menu for the dinner: —

"HOW SOME VEGETARIAN GIRLS COOKED A VEGETARIAN DINNER.

"These girls were brought up vegetarians. There were five of them, ranging from thirteen to sixteen years. As their parents believe in an all-round education, they had been given instruction in the various branches of housekeeping as well as in books. They had long taken turns at preparing the family

meals, so although their mother was absent from home and there was no older person to assist them, when it was desired to invite some friends to dinner, they volunteered to undertake its preparation and serving. The people to be entertained, together with the usual family, numbered nearly fifty persons. The dinner was strictly vegetarian, and was prepared without the use of eggs, milk, cream, or butter. They tried to make their bill of fare one that would contain a proper amount of all the important food elements."

Eva and Ora are also the daughters of a physician, in fact, of two physicians, for both father and mother are practitioners. The children have always lived on a strictly vegetarian diet. Eva is twelve years old and Ora ten, and each weighs about ninety pounds. Neither has ever been sick, although Eva has had the measles, and both were supposed to have had the whooping-cough and chicken-pox. During the visit of the whooping-cough, when a paroxysm came on, the children would drop their playthings, sit down in their little chairs, and go

MILDRED.

through the required exercise with all patience and thoroughness, then they would laugh and run back to their play.

"A strictly vegetarian diet" in their case means dry grains and hard breads, fruits, and nut products. They never eat

THE TWINS.

butter, eggs, cream or milk, condiments, or stimulants. The photograph can not show their rosy cheeks, but it does express the happy, earnest spirit that animates their minds. They are very helpful little girls at home, and although they have been systematically studying books only two years, they easily keep pace with other children of their age.

Mildred is the daughter of a business man, and has not always been a vegetarian. But since the adoption of hygienic principles by her parents, several years ago, she has steadily improved in health and vigor. Like all the children who have learned the difference, she very much prefers a vegetarian fare.

The young girl next to the twins, eighteen years of age, is a stranger to the writer, but she has an exceptional record. She has never tasted meat or flesh of any sort whatever, nor lard, butter, pepper, or soda. She has eaten very little white bread, salt, corn-starch, sugar, extracts, or candy, and no spices, tea, berry coffee, vinegar, or baking-powder. She has never taken drugs, and has never been

sick. Faces speak louder than words to show the spiritual effect of a pure physical life.

Most of the boys and girls thus far mentioned live in a town where vegetarianism is popular, but Florence lives in New York State, in a city where she never hears of hygiene outside her own family. Her father is a physician, and both her parents have been vegetarians for many years. They gave up flesh eating for ethical reasons, believing that it is not only wrong but loathsome to kill for food any living creature.

Florence is now eighteen, and has tasted neither flesh, fish, nor fowl since she was seven years old. In some respects she is rather peculiar as a vegetarian. The only vegetable she eats is the potato. She uses butter sparingly, but no eggs except as they form an ingredient of cake. Her only drink is cold water. She has never tasted tea, coffee, or any kind of wine or liquors. She usually takes but two meals a day, especially when working hard. One of these consists chiefly of fruit, — apples, grapes, and oranges. She has never been sick, except from the contagious diseases of childhood. She studied at home until she was nearly fourteen years old, when she entered the preparatory department of a high-grade normal school. From this she was graduated with honors before she was eighteen. She passed the competitive examination, thus winning a scholarship in Cornell University. Here she has successfully carried eighteen hours' work a week, consisting of Greek, Latin, French, German, chemistry, American literature, and history. Usually she takes plenty of sleep, but as an illustration of what one in good physical condition can endure without much effort or apparent injury, it may be stated that she sat up studying all one night, slept from five to six in the morning, ate three oranges for her breakfast, and took examinations all the forenoon, failing in none. She has never worn a corset or a corset waist. She never has a headache, or suffers any inconvenience from missing a meal, studying hard, or losing sleep.

These boys and girls have not been chosen as shining examples. They show the average in vegetarian homes. Twenty-five years hence it will not be difficult to

FLORENCE.

prove by statistics the advantages of a natural dietary, even among highly civilized Americans.

MAN'S NATURAL DIET.

BY J. H. KELLOGG, M. D.

(Continued.)

THE TESTIMONY OF PHYSIOLOGY.

As function is based upon structure,— that is, since the activity of an organ depends upon its anatomical construction, —it is evident that we may reasonably expect to find the testimony of physiological facts in perfect accord with what we have seen to be the incontrovertible evidence offered by the structure of the human body when compared with that of other animals.

In this article we shall especially consider the following functions in their bearing upon the question under consideration : —

1. Digestion, including prehension, or the act of taking food ; mastication ; salivary digestion ; gastric digestion ; intestinal digestion.
2. The excretions.
3. Other poisons.

Prehension.— The act of taking food, or prehension, the first act of nutrition, is closely related to the character of the food material. For example, herbivorous animals simply walk about and take their food precisely as nature has made it for them. They find a table spread before them, so to speak, in the fertile plain and in the forest.

The carnivorous animal, on the other hand, takes its food by violence, suddenly springing upon some defenseless or unresisting beast, by preference a vegetable-eating animal, and tearing it in pieces with its sharp claws and teeth.

The frugivorous animal uses that wonderful organ, the hand, to pluck its food, which it finds in the form of fruits and nuts, prepared for its immediate use so long as it adheres to a strictly natural dietary ; man appears to be about the only creature which has departed from the natural bill of fare indicated by its structure.

Mastication.— The process of chewing food, the first of the active processes of digestion, is also characteristic of each class of animals. In the herbivora, as the ox, the movements of the jaws in mastication are very free. There are three distinct motions,— the vertical, the lateral or sidewise, and a movement forward and backward. By this means the large grinding teeth can be used in a most effective manner in reducing to a pulpy mass the twigs and coarse herbage upon which this class of animals feeds.

Carnivorous animals, on the other hand, are able to move their jaws in only one direction. The jaws open and shut like a pair of scissors, so that the animal eats with a chopping movement, hatcheling its food by means of the trenchant or saw-shaped surfaces of its molars, after having first reduced it to coarse fragments by means of its claws and tearing teeth. The carnivora do not, in a proper sense, masticate or grind their food. They simply shred it to a slight extent, then send it to the stomach to be acted upon by the powerful gastric juice with which nature has provided this class of animals.

In the frugivorous animal the movements of mastication are of three kinds, as in the herbivorous, though the latitude of the movement is not quite so great. The teeth and jaws are by their structure admirably adapted to grinding and reducing to a soft, pasty mass the food substances upon which the animal naturally feeds ; viz., fruits, nuts, and soft grains.

We find in man organs of mastication and masticatory movements correspond-

ing exactly to those in the higher apes, the orang-outang, the chimpanzee, and the gorilla.

The Saliva.— Herbivorous animals secrete a large amount of diluted saliva, which appears to be useful chiefly as a means of masticating the coarse food-stuffs upon which these animals subsist.

In the carnivora, as, for example, the dog, the salivary glands are small, and the amount of saliva secreted is scanty. The saliva, also, has comparatively little activity in the digestion of starch, its most important function in the frugivorous class.

In frugivorous animals the salivary glands, while not so large as in the herbivora, are well developed, being much larger than in the carnivora, and are very active in the formation of a saliva which is highly effective in character, and capable of rapidly converting starch into a form of sugar known as maltose.

Gastric Digestion.— The stomach in herbivorous animals is an exceedingly complicated organ, consisting of four distinct parts or compartments. The process of digestion is very slow, as might naturally be expected from the fact that the alimentary canal is, in this class of animals, often from twenty to thirty times as long as the body.

In the carnivora the stomach is simple and the alimentary canal short. The substances on which carnivorous animals subsist are almost identical in character, and are generally readily dissolved by the powerful gastric juice with which these animals are provided. Another property possessed in a high degree by the gastric juice of carnivorous animals is its active antiseptic or germicidal element. When exposed to conditions of warmth and moisture, flesh, whether that of mammals, birds, or fish, readily decomposes or decays, giving rise to poisonous substances of most offensive character. The gastric juice of the dog is capable of preventing this putrefactive change while the food is undergoing the process of stomach digestion. That such changes occur later, however, while the food residue is lying in the colon previous to expulsion from the body, is evidenced by the extraordinarily offensive character of the fecal matters of this class of animals.

In frugivorous animals the structure of the stomach, while less complicated than in the herbivora, is somewhat less simple than in carnivorous animals, being evidently adapted to food requiring a longer time for the extraction of its nutritive elements. The gastric juice provided by the stomach of the frugivora is less powerfully active than that of the carnivora, and less highly antiseptic; consequently it is less adapted to the digestion of such food substances as flesh, which is likely to undergo decay in the stomach, especially if taken in considerable quantities, and in which putrefactive processes are likely to be in progress when it is eaten. The stomach and gastric juice of the frugivora are, however, exactly adapted to the digestion of the foods which are natural to this class of animals. The farinaceous food substances, which are represented in the starchy seeds, or cereals, are best digested in a stomach in which the gastric juice is not too highly active and acid, for the reason that such acidity interferes with the digestive action of the saliva. This remark applies to starch only when it has been cooked, but to other farinaceous substances, such as dextrin, in the form in which they are abundantly furnished in fruits like the apple and the banana.

Intestinal Digestion.— The alimentary canal in herbivorous animals is not only very long, but is so constructed as to delay as much as possible, without actually obstructing, the movement of the intestinal contents along the canal, thus giving op-

portunity for complete digestion and absorption of the nutritive elements contained in the coarse material upon which these animals feed. This purpose is beautifully shown in the sacculated structure of the capacious colon of the ox and the sheep.

In carnivorous animals the alimentary canal is not only short,— only three or four times the length of the body,— but smooth also. By this arrangement the movement of the readily soluble and decomposable food substances along the canal is facilitated to the greatest possible extent.

In frugivorous animals, including man, the alimentary canal, although three or four times as long as in the carnivorous, is less than half the proportionate length found in the herbivorous, but, like the latter, is so formed as to delay to the necessary degree the movement of the alimentary mass, the colon being sacculated as in the herbivorous class. This fact alone is sufficient to condemn the use of flesh foods in any form by frugivorous animals, since the less active antiseptic and germicidal properties of the gastric juice in these animals render unsafe the long retention of such easily decomposable substances as flesh.

THE EXCRETIONS.— The liver of carnivorous animals is not only much larger in proportion to the size of the animal, than in the other classes, but is also more highly developed, its five lobes being far more distinctly shown than in herbivorous and frugivorous animals. The amount of bile secreted by the large, active liver of carnivorous animals is much greater than in either herbivorous or frugivorous animals.

That the greater secretion of bile is due to flesh-eating has been clearly shown by experiments made by Bouchard and other investigators. By means of a surgical operation, the bile-duct in dogs has been made to discharge the secretion outside of the body in such a way that it could be collected, and the amount accurately measured. Such dogs have been fed upon various dietaries, and the amount of bile carefully determined. When kept upon a meat diet, the quantity has been uniformly found to be increased fifty per cent. or more. In an operation for the removal of gall-stones made by the writer several years ago, the influence of diet upon the secretion of bile was very clearly shown. Thus it appears that the use of a meat diet requires a far greater degree of activity on the part of the liver than any other diet. In carnivorous animals, this additional work is provided for by a larger and more perfectly constructed bile-making organ; but as such provision for the secretion has not been made in the case of man, it is evident that he was not intended to subsist upon a dietary requiring an excessive amount of work by the liver.

According to Landois and Sterling, the amount of uric acid excreted through the kidneys daily is 32.5 grains on a flesh diet, and from three to ten grains on a non-flesh diet. When we recognize the fact that uric acid is a product of imperfect nutrition, that it is the result of the flooding of the body with an excessive amount of nitrogenous waste substances; and when we take into account the further fact that uric acid has been shown to be, when taken in connection with other poisons which are always found present with it, one of the most active of all known disease-producing agents, the figures cited become exceedingly significant. If a meat diet increases the amount of uric acid found in the urine to from three to ten times the amount found when a pure natural dietary is used, it is evident that the question is one well worth careful and earnest consideration.

OTHER POISONS.— Succinamic acid, creatin, creatinin, and other poisons are in-

creased in quantity in proportion to the increase of uric acid as the result of a flesh diet. As before remarked, the presence of these poisons in excess in the urine is evidence of their presence in excess in the body. It needs, then, no argument to impress the fact that the body of the flesh-eater must be contaminated with tissue poisons to a much greater extent than that of an animal or a person subsisting upon a non-flesh diet. That this is really the case has been abundantly proved by numerous investigators. For example, Bouchard showed that the fecal matters of a person subsisting upon a mixed dietary were twice as poisonous as those of a person subsisting upon a non-flesh dietary. This fact accounts for the extraordinarily offensive character of the fecal discharges of all carnivorous animals, such as the cat or the dog, as compared with those of herbivorous animals, as the sheep or the rabbit.

Another fact that emphasizes this point is the strong odor which characterizes carnivorous animals. This odor is evidently due to the absorption of poisonous matters from the decomposing contents in the colons of these animals. The flesh of carnivorous animals is always strong, and repulsive to the smell and taste. It is doubtless for this reason that carnivorous animals very rarely seize or destroy for food other carnivorous or flesh-eating animals. A lion does not molest when alive, or eat when dead, other lions, panthers, leopards, or wild-cats. The dog may catch and kill a cat, but he will not eat it. The flesh of hogs which have been fed upon flesh food is strong and offensive in flavor. No reason can be adduced for supposing that the flesh of human beings does not, by the use of flesh food, become so tainted with the products of decay and other poisons which that flesh contains as to acquire the same obnoxious properties which render the flesh of all carnivorous animals offensive even to rapacious beasts of prey.

(To be concluded.)

TO A LITTLE UNKNOWN.

BY MARY ALICIA STEWARD.

ROSEBUD, how I long to see thee,
With thy laughing eyes so brown,
With thy sunny ringlets curling
Over neck, and brow, and crown.

Send me just one baby kiss, dear,
In a letter dainty white;
Mama give thee one returning,
All wrapped up in rosy light.

Then we 'll know each other, honey,
Though our lips may never speak;
And we 'll throw each other kisses
Every day through all the week.

HABITS OF LIFE AND CHRONIC DISEASE.

BY D. H. KRESS, M. D.

ONE of the earliest theories of disease considers it as a direct and arbitrary visitation from God, completely beyond human control. We have now nearly outgrown that idea, but have not yet fully grasped the relation that exists between disease and its causes, or the importance of understanding and obeying the laws upon which health depends. Few persons realize that the enjoyment of health and the prolongation of life depend upon the efforts which man exerts for himself, and that chronic disease is always the result of bad habits. This fact is taught by revelation, by science, and by experience; but so little are we accustomed to trace disease to its true origin that if no evil results follow any wrong practise within twenty-four hours, we come to the conclusion that it must be harmless.

Because the results of many physical sins are not experienced at once, wrong habits of living are indulged in, and handed down from parents to children, generation after generation. As a result, gradually and almost imperceptibly each generation has grown weaker, and the vital powers have been lowered, until chronic disease in every form is afflicting the human family. There are thousands of poor mortals who have never known a day of perfect health. With shattered nerves and broken constitutions they drag out a miserable existence, hardly knowing what health means.

By careful hygienic and sanitary regulations, contagious and infectious diseases in the form of epidemics have in a measure been prevented, but chronic disease and invalidism are on the increase. Physical sin and physical disease bear to each other the relation of cause and effect.

The enjoyment of health depends entirely upon our habits of life. Each individual may prolong his life or shorten it; he may of his own volition enjoy health, or suffer from disease. Infinite Wisdom has arranged a plan for the good of mankind, whereby it is decreed that if a man violates nature's laws, he must pay the penalty. This penalty is designed as a means of correction, to restrain the evil-doer and thus prevent further injury. The pain experienced on touching a heated object is a danger-signal held out by nature to save from worse results. The various disagreeable symptoms called disease, should not, therefore, be regarded as enemies, to be hushed or smothered by some opiate, but should be considered as friends, warning us that natural law has been transgressed. They should lead us to inquire into the causes or wrong habits which produced them, and to correct them. Not until this is done can we expect complete freedom from disease. When these causes are discovered and abandoned, health is assured. By placing ourselves in harmony with natural laws we place ourselves in harmony with God, for these laws merely indicate to us the means through which he has been pleased to minister health to the human race.

In the human body, even when in a perfectly normal condition, poisonous substances are constantly formed. A healthy man may drink pure distilled water, eat only aseptic food, and breathe only pure air, yet his excretions will contain poisons which, if retained in the body, would result in disease. These poisons are produced by the breaking down and decomposition of tissue. Besides this, toxic properties are constantly being developed

by putrefactive changes of foods in the alimentary canal. Bouchard estimates that in each twenty-four hours the amount of poisonous alkaloids formed in this way alone in a perfectly healthy man, living on an ordinary mixed diet, is sufficient, unless eliminated, to cause death.

Chronic diseases are nearly always due to the accumulation of these poisonous products. This accumulation may be due to poor elimination, as in the sluggish circulation of the blood, caused by lack of physical exercise, an inactive condition of the skin from neglect of cleanliness, the constriction of the lungs by the use of corsets, or the worn-out condition of all the eliminative organs, as in old age. There may also be an excessive production of waste matter through the breaking down of tissue from overexertion or prolonged labor. Bouchard has shown that urine excreted during the hours of activity is much more poisonous than that excreted during the hours of rest. An accumulation of poisons may also result from their excessive formation in the alimentary canal from overeating, or the use of foods in bad combinations, or the use of such foods as readily undergo putrefactive changes or fermentation. Again, poisonous or other substances, when not appropriated by the organism, but introduced directly into the system, overwork the organs of elimination, and thus cause an accumulation of effete products.

The consumption of alcohol, tobacco, drugs, flesh foods, tea, coffee, and condiments, including the free use of salt, is therefore injurious. The evils resulting from the use of alcohol need not be mentioned here, as the public is only too familiar with the effects of its use. "Tobacco is a slow, insidious poison, and its effects are more difficult to cleanse from the system than those of liquor," and the habit is more difficult to overcome than the habit of drinking. More injury results from the use of tobacco than from the use of alcohol, for not alone is the user of the tobacco injured, but the constant exhalations of nicotine from his lungs and skin poison the air around, and contaminate all who are compelled to be near him. Wives and children are often slowly poisoned, and disease is the inevitable result.

Among the diseases resulting from the use of tobacco may be mentioned cancer, dyspepsia, degeneration of the muscles of the heart, resulting in heart failure and paralysis. Besides this the user of tobacco becomes more susceptible to contagious diseases on account of lowered vitality and lessened power of resistance.

If alcohol has killed its thousands, drugs and patent medicines have slain their tens of thousands. Disease being due to the accumulations of poison, it is evident that it can not be cured by the introduction of another poison in the form of a drug. If an additional poison is added, abused nature has two evils to contend against in the place of one, and her efforts are enfeebled and crippled. Overburdened and discouraged, she often gives up the struggle, and the patient dies. The cause of death is not suspected, but had nature been assisted or even left alone to carry out her eliminative processes, the patient would in all probability have recovered. Drugs, like alcohol, are deceptive; they create a feeling of well being by deadening the nerves of sensation, but they never cure disease.

In mild fevers drugs are often administered to reduce temperature, but injury invariably results from such measures. Fever is not an absolute evil; it is a protective process, an effort on the part of nature to oxidize and eliminate from the system the poisons which have been accumulating often for years, owing to wrong habits of living. By reducing the tem-

perature in this way we deprive the body of a therapeutic protective measure, and endanger the life of the individual. Galmalcia, in his clinical experience and researches in connection with Pasteur, has proved that animals which receive a small dose of germs or their toxins speedily develop fever, and will survive if left alone. If the same dose is given, and fever prevented by the use of artificial means, they die. Quinine, the remedy usually resorted to in fevers, reduces temperature by lessening the ability of the red blood-corpuscles to carry oxygen to the tissues, thus lessening oxidization. It is therefore injurious, although the temperature may be reduced by it. The only rational way to reduce temperature is to assist the oxidization and the elimination of these toxins. Remove the fuel, and the fire of its own accord will cease to burn.

The excessive use of flesh foods is undoubtedly the cause of numerous chronic diseases. In the body of the healthy animal sufficient poison is produced every ten minutes to cause death. The blood flowing constantly through the tissues carries the wastes to the emunctories for elimination. The 'existence of the animal depends on this process. When it is killed, the circulation is stopped, and the poisons which were on their way to the organs of elimination are retained in the tissues; when we eat the flesh, we take these poisons directly into our own systems.

This is not a new statement. Dr. David Ingalls, of Detroit, in a paper read before the Detroit Medical Association, said: "Beef tea is practically an infusion of uric acid. Instead, then, of thinking of a diet rich in meat as peculiarly nourishing, it is nearer the truth to consider it as a stimulating diet, and to regard the person who takes it as eating a considerable quantity of uric acid and other poisons, which he must sooner or later get rid of. If he fails to do so completely, he accumulates in his tissues poisons from which he will hear later on. The reason that this relation of the ingestion of uric acid to disease is not commonly recognized, is that the effect is not immediate; not until the accumulation has reached a certain point of saturation does the protest of nature become loud enough to be heard."

Uric acid and other poisonous products resulting from the decomposition of foods in the alimentary canal are undoubtedly the principal causes of gout, rheumatism, migraine, neurasthenia, hay fever, epilepsy, Bright's disease, nervous prostration, skin disease, and other maladies.

Most Americans suffer from dilatation of the stomach. The free use of flesh is especially injurious in such cases. In addition to this dilatation and muscular weakness of the walls of the stomach, the glands often do not secrete sufficient acid to disinfect the food. As a result, foods are retained in the stomach too long, and undergo putrefactive changes, developing deadly poisons.

A third reason why I believe the use of flesh as food to be injurious, is the prevalence of disease among cattle. There are at present few animals that are free from disease. In the process of fattening they are confined in dark, close stables, deprived of exercise, light, and pure food, and left to inhale the poisonous gases which are constantly generated from their own filth. The lungs soon become unhealthy; tuberculosis, tumors, and cancerous growths are developed, and the entire system of the animal becomes diseased. When they are killed and prepared for market, the meat is saturated with poisonous products. No doubt many persons die every year of maladies resulting from eating diseased flesh, yet the cause is never suspected. The following account is taken from the Annual

Report of the State Board of Health of Michigan, 1896: "The board of the Coldwater (Mich.) School for Homeless Children and Orphans had a fat cow, which they had slaughtered for their own use by —— of their city, who informed the board that the animal was diseased. The board at once secured two surgeons to inspect the meat. They found the lungs badly diseased and filled with pus, and pronounced the meat unwholesome. The board asked —— whether they could dispose of the meat by feeding it to the hogs that were about the slaughter-house, and they said they would do so [the hogs of course would be afterward killed, sold, and eaten]. A few days later —— cut out the tumors neatly, and shipped the beef to Toledo, O., consigned to Armour and Co. The school board was notified to that effect, and they at once sent their superintendent to Toledo, and informed me of the facts. I immediately looked after the case, and found the meat at the Lake Shore freight depot in a car. At once I obtained an order from Armour and Co., paid the freight, and took the meat in my charge, and I have it in my possession now. *It is a very fine-looking piece of meat*, weighing between 700 and 800 lbs. The superintendent identified the meat as soon as he saw it. The place where —— had cut out the tumors can be plainly seen."

This case illustrates the danger of using any flesh foods. Many more instances of a similar character might be cited. Fatal cases of poisoning from the use of sausages and dried beef and poultry are too common to need special mention.

The free use of milk is also injurious. The belief that because mother's milk is the natural food for infants, cow's milk must be suitable food for adults, is a mistake. On account of dilatation of the stomach, the milk taken as a food is retained longer than the normal digestive period, and large curds are formed; casein, being a nitrogenous substance closely allied to flesh, undergoes decay, just as meat or eggs do, and the same poisonous products are formed. In the writer's experience milk has been found to be accountable for many serious chronic diseases, and its disuse has resulted in much benefit to patients. Many of the diseases of children are without doubt due to the use of cow's milk.

Dr. Brush, of New York, some time ago read a paper before the New York Medical Society, calling attention to the close connection between consumption in human beings and the same disease in cows. The doctor cites a number of instances in support of his view that the disease is communicated to human beings largely through the use of the milk and flesh of diseased animals.

Tuberculosis is the most devastating of all diseases that affect the human family. The number of deaths caused by it in its different forms exceeds the total number of deaths from diphtheria, cholera, smallpox, scarlet fever, typhoid fever, and all other infectious diseases. In New York five thousand persons die annually from this one disease. The imperial health officer of Berlin is reported as stating that he found evidence of tuberculosis in the body of every third person examined by him between the ages of fifteen and sixty years of age. The writer believes that the most important cause of consumption in man is the use of infected milk and of flesh foods.

FOURSCORE YEARS AND EIGHT.

BY F. MAGEE ROSSITER, M. D.

FOR the origin of Mr. Gladstone's extraordinary vitality and of the unprecedented vigor of his old age, we must go back more than two centuries to the sturdy Scotch family of Gledstanes. The very name — *gled* meaning hawk, and *stane*, stone — is indicative of fierce activity and rugged strength. Sir John Gladstone, William's father, was a man of great energy and ability, and, like his distinguished son, seemed destined never to grow old. One of William Gladstone's brothers possessed a magnificent physique, being six feet and seven inches tall, and of fine proportions.

Mr. Gladstone himself was endowed by nature with an iron constitution. That he entered life with a large capital of vitality and an enormous potential energy, to be manifested later in physical and intellectual power, has been without doubt the most important factor in the development of his personality and career. If his active work had ended when he was fifty years old, his life would have been no more remarkable than that of many other distinguished leaders in Parliament. It is true that many other men have been born with as many or even more chances of success and length of days; but by squandering their vital forces by the needless expenditure of energy and by wrong habits of life, they have cut short their usefulness at fifty years when they might have rounded out a full cycle of fourscore years and ten. But Gladstone made a conservative use of his capital of vital force, living most of the time on the interest instead of the principal; and, as a consequence, at the advanced age of eighty-eight, he is still the "Grand Old Man."

The majority of mankind to-day are living artificial lives, drawing upon their future reserve for present existence. All such are sure, sooner or later, to pass into physical bankruptcy. On the other hand, there are many who, coming into life with the disposition to make a grand success, being actuated by noble and lofty principles, and inspired by high and worthy ambition, are handicapped by a deficiency of vital force; consequently their energies are exhausted before the zenith of life is reached.

In this inherited difference in vitality more than in any other natural feature exists the inequality of man. While many forces combine to produce a character, yet it must be admitted that one of the most potent of these is heredity. It is an inestimable blessing to be well born; and if more of our race to-day had been the recipients of this greatest of all natural endowments, there would be more Gladstones in the world.

A good inheritance, however, is not enough to insure success; it must be conserved and developed. Mr. Gladstone appreciated his great natural force, and was able to use it to advantage. He was not an athlete in a professional sense, but was noted from his college days for his pedestrian disposition. From youth to old age he was a great walker, and many stories are told of his long tramps through the forests. He takes very little interest in the recreations that absorb the attention of the average Englishman, but he always had a passion for fresh air and physical exercise. He sought an outdoor life. Hawarden Park has been his hermit refuge from the city and the exacting duties of the premiership. One form of exercise to which this great statesman has given world-wide celebrity,

is that of chopping wood. Not alone his opponents in Parliament, but the huge elm trees of his famous park as well, have felt the thundering energy of his tremendous blows.

A glance at the frontispiece in this number shows that the noted Englishman has a spare frame. As years advanced upon him, he did not develop the bulging waistcoat so characteristic of many of his countrymen, nor was he encumbered by any accumulation of superfluous adipose tissue. He was unceasingly active, developing muscle instead of storing up fat. His outdoor life is a shining illustration of the benefits to be derived from physical recreation by those who lead intellectual lives.

Mr. Gladstone was not confined to any one system of exercise or to physical hygienics alone. He was always careful to avoid continuous labor of any one kind on the same level of intensity. He recognized that the brain needs what the eye requires, a change in the accommodation and the angle of vision — it requires rest. He never became so engrossed in affairs of state that he did not take time to read Homer, to cultivate a taste for Italian literature, or to enjoy the latest novel. Amid the scenes of a ministerial crisis he found diversion in making a careful analysis of Butler on the future life, and in writing extensively on his favorite subject, the immortality of the soul. Mr. Gladstone recognized the value of a symmetrical development of mind and body. He realized that too close concentration upon one line of effort is destructive to nerve force ; that all who hope to develop a symmetrical life must have the rest that comes from a change in employment, and that irregularity in work tears down and wastes both mind and body before their time. Regularity was therefore a fixed habit of his life. He has always been punctual at meals, and partakes of his food with great relish, casting aside for the time being all perplexing problems. He is a moderate eater, but is not a teetotaler as to drink. He has never used tobacco in any form. Doubtless, had he known and accepted all the latest scientific principles of health, and carried them out with the same ardor that he threw into those he did know, he might have lived to be as hale and hearty at one hundred as he was at eighty.

It is said he was able to dress for dinner in three minutes if pushed, and ordinarily in five minutes. If he had to wait for a meal or a train, he was never at a loss to know how to improve the spare moments. The most studious and the most successful men have always been those who made a judicious use of the odds and ends of time.

Another influence that has tended to keep Mr. Gladstone in health and to add to his years has been the gift of sleep. Sleep has been his servant, waiting his command. At a moment's notice he can take a nap, and though it lasts no longer than ten minutes, he awakes refreshed. His nightly allowance is usually seven hours. Once in bed, he is there to sleep ; immediately his mind is shut off from business cares. For this reason sleep to him is an exceedingly healthful recreation, and one that conduces largely to the serenity of mind which he always enjoys. The fact that he could at once turn his attention from the exciting scenes in which his waking hours were spent indicates that he has absolute control over his thoughts, and hence over his body. No one agency tends to perennial freshness of youth like an abundance of natural sleep.

Mr. Gladstone is free from worry, a characteristic that he has turned to good account. It is said that at one time when he was in the midst of a cabinet crisis, he attended church three times on one Sunday. Amid all the turmoil of politics he

was enabled to maintain a uniform and undisturbed peace of mind.

This "Grand Old Man," now in his eighty-ninth year, by his noble and persistent conservation of strength, has shown to the whole world that though "the days of our years are threescore years and ten," yet "by reason of strength" they may be fourscore years. Though none can escape the "trouble and sorrow," by right living they may be minimized, and man may go to his long home blessed of humanity and of God.

FRUITS: THEIR QUALITIES AND USES.

BY J. H. KELLOGG, M. D.

(Concluded.)

FRUITS are a valuable source of water supply. Especially in a dry country, there is nothing more grateful than the juice of an orange, a lemon, a lime, or a sweet almond. The water of fruits is distilled from heaven, and is absolutely pure. There is no danger of contamination from drinking it.

In the winter, one who consumes fruit freely does not really need to drink. If he eats a proper amount of fruit at meals, he will have all the fluid he needs, and that of the best quality. The watermelon is a very good drink, and can be taken *ad libitum*, but the pulp should always be rejected. The person who eats the hard flesh of the melon will be certain to suffer, for it is indigestible, absolutely innutritious; it is simply so much wood, and one might as well eat splinters, shavings, or sawdust. But the juice is perfectly wholesome at all seasons.

It is true that eating watermelons sometimes causes malaria. This is because they are eaten green, without scalding. When eaten green, they should be taken from boiling water, which will kill every kind of germ. Cracked watermelons should not be eaten at all, as they contain germs; the same is true of watermelons with loose stems. Some germs may have worked into a melon that has been plugged, but one that is fresh and sound and not contaminated from the outside is a perfectly wholesome drink.

Fruits are not only useful as drinks, but also grateful as nutrients, particularly the fig, the date, and the banana. The Arab of the desert not only lives upon dates, but feeds his camel and his horse upon the same fruit. His food consists almost exclusively of dates, camel's milk, and barley cakes, with once in a while a little flesh. In Arabia, as in Mexico, the cakes are baked on a tin sheet over a coal fire. In Mexico they are called tortillas. Upon this diet the Arabs are strong, hearty, and vigorous. Travelers who go to the pyramids of Gizeh say that these Arab guides lift men from one step to another, pulling the portly travelers along after them, and otherwise assisting them, without fatigue; it is astonishing to see their vigor. Professor De Lesseps, the great engineer of the Suez Canal, asserted that he never could have accomplished the construction of that great work without the aid of these vegetarian Arabs. The porters of Smyrna, who are noted for being, perhaps, the strongest men in the world, often carry a burden of half a ton on their shoulders. In South America, porters carry travelers on their backs through most dangerous mountain passes, sometimes crossing great chasms upon logs, with the travelers strapped to their backs.

They will travel twenty or thirty miles without resting, excepting, now and then, by leaning their shoulders against the rocky wall. These men live entirely on bananas, oranges, pineapples, and a little rice or some other cereal food.

Fruits, then, must be regarded as important nutrients. It is possible to live entirely on some of them. The prune, the apple, and the date are especially valuable. One can live upon the fig, the date, the banana, the prune, or the raisin for an almost indefinite length of time. Figs and dates might constitute the entire diet year in and year out, because they contain all the elements of nutrition, and in sufficient proportion to meet all the requirements of the body.

Fruits are valuable because of their influence on certain functions of the body, for instance, upon that of the kidneys. Fruit is a natural diuretic; first, because of the water, and, second, because of the acid which it contains. It is also a natural laxative,— not in the same way in which medicine is laxative, but as stimulating the salivary glands and increasing peristalsis. Fruit is a natural food, and when a natural food is taken into a normal stomach, the processes of the stomach are normally normal; they are naturally natural without producing any particular medicinal effect, or any special effect other than the relation of one normal action to another. When one takes dry food into his mouth, the salivary glands pour out an abundance of saliva; and when he takes natural food into his stomach, that organ pours out an abundant supply of gastric juice. Although fruit acts as a stimulant, its effect does not wear out. The stomach and the alimentary canal do not become so accustomed to it that it is necessary to add more fruit or a medicine. If old troubles return in spite of the continued use of fruit, it is not the fault of the fruit, but is due to errors of diet, to sedentary habits, or to some other violation of the laws of health. It is not because the fruit is of no value, but because one has come down to so low a level that some other aids are needed. One wrong has been corrected, but others must be treated so that the functions of the body shall be rightly performed.

The relations of fruit to digestion are particularly interesting. Perhaps the most important is the influence of the juices of fruits upon germs. Fruit juices are disinfectants, they are germicidal. The juice of the lemon is as deadly to cholera germs as corrosive sublimate, or sulphur fumes, or formaldehide, or any other disinfectant. It is so powerful a germicide that if the juice of one lemon be squeezed into a glass of water, that is then left standing ten or fifteen minutes, the water will be disinfected; it makes little difference where the water has been obtained, or whether it has been boiled or filtered. This is a fact worth knowing, for any of us may find himself under circumstances in which it is impossible to get either boiled or filtered water. In such a case, the juice of a lemon will purify the water perfectly.

This disinfectant peculiarity of fruit juice does not belong solely to citric acid or lemon-juice; all kinds of fruit juices are inimical to the growth of germs. This the writer has demonstrated by repeated experiments. Different preparations of fruit juices were arranged, some raw, some slightly cooked, and some boiled, but all were made perfectly sterile. These juices were filtered, and a preparation of beef tea was also made. A drop of stomach fluid was then dropped into each of these different juices or media in test-tubes, and the effect watched. It was found that when beef tea, or other similar preparation, was inoculated with a certain stomach fluid, a large quantity of

germs grew and developed,—germs so deadly in character that the poisons which they produced, when injected into a small rabbit, a guinea-pig, or a rat, were capable of killing it; but the same stomach fluid, when inoculated into apple juice or grape juice, or almost any kind of fruit juice, failed to produce any such effect; germs would not grow. It was found that very rarely indeed can germs be made to grow in any of these juices; so that if fruit juices will not destroy germs, they will at least prevent their growth in the stomach. The germs will die of themselves if they have no chance to grow and develop. These experiments show why it is that fruit is so useful in certain conditions, especially in cases of biliousness, when people have coated tongues, unclean stomachs, and allied troubles.

The effect of a pure fruit diet is to disinfect the stomach so that one does not need to be constantly washing it out by means of the stomach-tube; in fact, fruit juices are a substitute for the stomach-tube. Sometimes a discouraged sufferer exclaims, "Doctor, I have been using a stomach-tube for a year, and I feel no better than when I began." If asked, "What have you been eating?" very likely he replies, "Ham and eggs, sausages, beefsteak." It is no wonder that he spoils his stomach, if he continues to eat such things; he might as well wash his hands, and then dip them into mud, and expect them to be clean. But instead of washing out the stomach by means of the stomach-pump, let us live on fruit.

Ptomain-producing germs cannot grow in fruit acids because they require an alkaline medium. Another reason is that fruit contains only a small proportion of albumen. Germs require albumen, or proteids, to nourish them, and they can not grow in a food in which albumen is not present. Every housewife knows that she can not make bread rise unless there is enough gluten present to support the germs; the absence of albumen starves them to death.

A few years ago it was erroneously believed that germs were necessary to digestion; that the body captured germs and then formed a sort of health combination with them,— a kind of health society; that the stomach would harbor germs and take care of them, while the germs in turn would help the stomach to digest the food. That theory is exceedingly absurd; there is not the slightest foundation for it, and there is no logic in it. When a healthy man eats food with no germs in it, there will be no germs in his stomach. He will enjoy perfectly healthy digestion. Germs are not to be found in a perfectly clean stomach. To the mind of the writer, these are the most interesting bacteriological discoveries in relation to germs that have been made within the last ten years. Nothing could add more to genuine human comfort than the practical use of these two facts: that food can be digested without germs, and that by the use of fruits, germs may be driven out of the stomach and kept out of it. By long fasting, germs are starved. It is more comfortable, however, to fast on fruit than on water and air. By living entirely on fruits, one can bring about the same results as by living on air and water.

The idea of the use of fruit for cure is not new. The grape-cure was mentioned by Pliny in the early part of the Christian era. In our own times it has been tried, notably in Cincinnati, California, and New Mexico. The cure is based entirely on this very fact,—that the juice of the grape kills germs. Until this discovery was made, it was supposed that the cure was effected by some change in the blood produced by the fruit diet, but it is now known to be due to the fact that a fruit diet cleanses the alimentary canal, stops

the production of germs, and cuts off the causes of disease. In Switzerland, persons using the grape-cure eat eight, ten, or fourteen pounds of grapes daily, either with or without other food. But the grapes should be taken when the stomach is empty, for fruits, to be effective in their work of disinfection, must be taken alone. If other substances, like eggs and meat, or even breads and cereals, are eaten, food for germs is supplied, which causes them to grow and hide in it, so that the acid juices of the fruit can not destroy them.

An eminent physician, some years ago, fed a consumptive patient twenty pints of strawberries a day. The patient ate nothing else, and recovered. Another patient who had chronic diarrhea which was intractable and had resisted all other forms of treatment, was fed upon cherries for several weeks, and another excellent recovery was the result. Uffelman reports a number of such cases. During the Rebellion, many soldiers who were dying of dysentery found that by the use of ripe peaches a rapid cure could be effected. This is contrary to the general opinion that fruits should not be eaten when there is intestinal irritation. The reason a cure is accomplished in these cases is because of the antiseptic, or cleansing, effect of fruit. Catarrhal affections of the intestines and other infectious troubles begin in the stomach, so that if we cleanse the stomach and the lower portion of the alimentary canal, and keep them clean, we shall be free from these diseases.

When fruit is taken with vegetables, it remains in the stomach too long to have its proper effect as a disinfectant. The fruit should be taken half an hour before the meal, and by itself. A better plan is to eat fruit at one meal, with no vegetables, and vegetables at the other, with no fruit. Two meals a day, including one entirely of fruit, are very efficient in keeping the blood pure and the stomach sound.

THE DOCTRINE OF HAPPINESS.

BY ARTHUR HENRY.

If we are wise, we will be happy. For a year or so I have been preaching the philosophy of happiness, and I could not have met with greater contention had I been defending the devil. Through all manner of circumstances I have maintained a cheerful temper in spite of the attacks, the scorn, and even the righteous indignation of others. I have refused to be miserable, and have been ostracized by the conventional. My most intimate associates have rebuked me for seeing blessings in distress, opportunities in adversity, and good in everything. In putting the most readily accepted beliefs into daily practise, I have been looked upon as a heathen and an outcast. I have met sickness with a smiling face, and death as an ordinary event.

Happiness is good; it is better to be happy than miserable. It seems to me that wisdom is alone necessary to open our eyes to the timeliness of an ever-present happiness within us. Misery is a sign of the deformity of one's soul. Do you wish to progress? Then hail every extending horizon as an open way. Do you wish to grow strong? Then rejoice at every obstacle.

If your object in life is to eat peaches, an early frost might be a calamity. If you live only to catch flies, you would be

seriously at a disadvantage in a cold climate. But if you have for your object the strengthening and perfecting of your character, there can be no such things as calamities or disadvantages. The only calamity is the belief in calamities. To him who delights in happiness all things will work him joy; and for those who are miserable there is no heaven. I have never heard any one deny the general statement that it is better to maintain a cheerful and contented temper under all circumstances; but when you apply the accepted principle to particular incidents of life, what a storm of protests, horror, and abuse breaks over you! Commiseration is companionship in ignorance.

Happiness is a condition independent of all other conditions; it is like the atmosphere, always about you and for you. You may smother yourself with a blanket or with sorrow, or you may keep your head free and your soul serene. You may be deprived of every earthly possession, of friends and comforts, but your happiness is in your own keeping. If you lose that, you are yourself the thief. The secret of life is hidden from those who desire anything but happiness — happiness for its own sake, just happiness.

There is a siren who sings to destroy us. It is desire, a sweet-faced jade, a lying, thieving misrepresentation of hope. You may hope and be happy, but are you acquainted with hope? Hope is an emotion of the soul, and above accidents. Hope extends her arms upward and outward, and looks beyond gratification. Faith, hope, and charity — you can not separate them. Can hope regret? Can faith despair? Can charity repine? Have you ever looked hope in the eyes? They are wise, and tender, and smiling. Have you known a happiness not connected in any way with a desire? If not, you know nothing of happiness. The glutton mistakes his greed for hope, and a brief tickling of his palate for happiness. The result of greed is gout or malice. The young girl who knows little of the companionship of her own soul looks for happiness in the attentions of a lover. She pins her happiness to her desires. It runs to meet the postman, and follows him away. Despair is the shadow of desire. Happiness rides as easily in the wagon of death as in a coach at the carnival. It is not created by circumstances, nor can it be affected by them. Gratified vanity, the elation of victory, the passion of a vengeance achieved, none of these are happiness.

Is it not enough to be happy? To possess happiness, we must be content with it. It will allow of no conditions. A baby cries at pain, and brings on a fever and more pain by its cries. It is ignorant. You reason with it against the folly of its wailing, but your voice is like the rumbling of wheels; it does not understand. But I have seen old men and women weep because some one whom they loved had died. How strange such a spectacle must appear to the angels! Generation after generation passes in lamentation. Death is the condition on which we live. It is the most ordinary and certain of earthly happenings. It is a cause for neither sorrow nor regret.

Were I to become blind, I would have need of my happiness. If I am happy, what matters if I can not see? Think nothing of your desires; insist on happiness, and the casualties of a brief and uncertain life will affect you only to strengthen and enlighten you.

Go find Pandora's box, and take a peep at hope; you will find no desire in her eyes. If you speak of disappointment, she will not understand you. Perhaps you will think her cold and cruel because she does not weep at your complaining. She is as warm as the sunlight, and as gentle as love. Poor thing, she can not

weep; she is doomed to an eternity of peace.

Did you ever consider that virtue remains steadfast? It is we who voluntarily abandon it. Was there ever a condition improved by regret or anxiety, by tears or despair? I know that there are those who, if robbed of their grief, would have nothing left. He who seeks sympathy in sorrow is no better than a leper who goes visiting. To condole with one who admits sorrow is like helping a foolish neighbor to sow thistles out of a spirit of accommodation.

If you can but once comprehend the difference between hope and desire, life will become less of a mystery to you. When you have discovered happiness, and proved for yourself how accessible and abiding it is, you will seek no further for the object of life. Happiness is a sufficient object. To hope is to be happy. Your misery will be in proportion to the strength and tenacity of your desires. You desire and doubt, but there can be no doubt with hope. Desire, doubt, jealousy,— these three are one. Take every element of desire from your conception of hope. The faith which is in hope is equivalent to fulfilment. Faith needs no results; it is sufficient. The charity which is in hope acknowledges that whatever is, is best; what place, then, is there for desire? Nothing can produce happiness; nothing can destroy it. It is yours always for the assumption of it. Disappointment, regret, anxiety, fear, and sorrow are profitless, and without reason or excuse.

We believe that happiness is at the end of all our desires. All our plans are laid to encompass happiness; all our labors are for its achievement. We struggle for riches, for the happiness we fancy they will bring; we anticipate the happiness, and it exhilarates us. Whatever the desire, however, its achievement fails to usher us into the expected state, and we seek for it again through other desires.

When will the world learn that happiness is free? It is a quality of the soul, more accessible than the light at noonday and more abiding than the hills. Dwell with your soul, and you will abide in happiness, you will know no want; the little events of life that now annoy or perplex you will become as acceptable as the fulfilment of your fancies; the more revolutionary events that you now look upon as disastrous will become but the ordinary occurrences of an hour, bringing with them their own peculiar opportunities; and the terror, death, will appear to you as it is, the concluding incident of life, as simple as those that have preceded it. I have heard people contend that happiness was impossible without the fulfilment of certain desires; that death must cause grief; that an enduring, and undisturbed serenity was either impossible or a sign of selfish indifference. If you believe with these, give me a few paragraphs of your doctrine, and I will have at you.

I HAD no time to hate, because
The grave would hinder me,
And life was not so ample I
Could finish enmity.

Nor had I time to love; but since
Some industry must be,
The little toil of love, I thought,
Was large enough for me.

— *Emily Dickinson.*

THROUGH THE GOOD HEALTH SPY-GLASS.

THE sum of $12,267,012.59 was received by the State of New York for the fiscal year ending Sept. 30, 1897, from the sale of liquor-tax certificates and from transfers and fines. This is the statement of the annual report of the State Commissioner of Excise.

An Indian doctor has lately shown, says the *Vegetarian*, that almost every child fed from babyhood on soft foods, like milk, porridge, and white bread, is likely to lose his teeth at an early age; while those who are nourished chiefly on raw fruits, whole wheat, vegetables, nuts, and similar foods, develop firm, well-formed teeth, which last much longer and cause far less trouble.

The eminent English surgeon, Brudenell Carter, in a paper read before the London Society of Arts, urged the importance of systematically training the eyesight. He gave reasons for believing that the vision of country-bred children is more acute than that of city-bred; the latter see chiefly large objects, such as houses and omnibuses, under large visual angles, while the former habitually give attention to smaller or more distant objects, and use the eyes under smaller visual angles.

"Tortoise shells are separated from turtles by means of great cruelty," says a writer in the *Union Signal*. "The turtles are firmly fastened to the ground by means of pegs; then a bunch of dried leaves or sea-grass is spread evenly over the back of the turtle and set on fire. The heat is not great enough to injure the shell, but merely causes it to separate at the joints, so that it can be pried from the back with a large blade. This operation involves great suffering, and many turtles, we are told, do not survive it."

Dr. Schmidt Mounard, of Leipsic, who has closely investigated the bodily development of children as affected by their attendance at school, states that acute sicknesses are not caused by the fact that children must study, but are produced by defective hygienic schoolrooms. Lack of cleanliness, of fresh air and light, decreases their ability to resist attacks of contagious diseases. Chronic troubles, such as weakness, headache, insomnia, and nervous disorders in general, are found to a much greater extent in schools of higher grade than in the elementary.

The savage neither keeps a tooth-brush nor employs a dentist. His teeth wear out by use, but they do not decay. The civilized man loses his teeth in spite of the dentist and the best of care. *Popular Science* gives as one reason why the savage has stronger teeth, the fact that his teeth are better nourished than those of the civilized man. He eats harder food, which gives abundant exercise to the jaws, enlarges the muscles and blood-vessels of these parts, and keeps them well supplied with blood; while the civilized man eats soft food, which does not exercise the jaws, and their muscles or blood-vessels, and does not bring abundant food to the teeth to keep them strong and healthy.

The persistent use of brandy has been found to develop in dogs as well as in other animals a mental derangement similar to delirium tremens, says a writer in *Lippincott's Magazine*. The victims are subject to all sorts of hallucinations. At first these occur only in the dark. A dog to which Magnard, the famous French physician, gave a large dose of brandy daily for four weeks began to howl piteously at night, and became quiet

only when a light was brought. After another week he saw hobgoblins even in daylight, and would run around biting and snapping at the empty air, and then skulking away with piteous whines, as if chased by a terrible enemy.

Another physician tried the effect of wine, brandy, and absinthe on fowls. They lost flesh rapidly, especially those that drank absinthe. Two months of absinthe-drinking would kill the strongest rooster. Alcohol affected not only their health, but their personal appearance also. The roosters' combs swelled to an enormous size, and assumed a deeper color. The most moderate feathered toper did not live a year.

Sunstroke as a germ disease is discussed by Dr. L. Sambon in the *British Medical Journal*. He regards it as a germ disease, requiring great heat for its development, but not directly caused by heat. The editors, in the same issue, speak of his argument as clearly and logically stated, and as being one that can not fail to arrest attention, and to lead to the reconsideration of the whole doctrine of the etiology and pathology of heat-strokes. They conclude: —

"It is interesting to note the striking parallel in the evolution of the ideas of pathologists as to the causes and nature of rheumatism and siriasis (heat-stroke). Originally attributed to meteorological causes, in the one case to rheum or cold, in the other to heat, they were next attributed to autotoxin, in the one case to lactic acid, in the other to retained heat; and now they are both being referred to germs.

"Whatever may be the ultimate fate of Dr. Sambon's theory, he certainly has given expression to an idea which is bound, directly or indirectly, to elicit much needed light on what, especially to Englishmen and Americans, is an important subject."

"God's creatures who can not speak" have a valiant friend in George T. Angell, the humanitarian. *Our Dumb Animals* recently rebuked a clergyman, who, after being fined for going out in the woods in the early spring and shooting little yellow birds and robins "just for fun," suggested in a sermon that the United States raise an army of five million men, and establish a navy that should sweep the seas. One who signs himself "Jewish Quaker," commenting in the *Philosophical Journal* upon a religion that could find such an "unchristian" expression, says: —

"It is stated that the pagans of the Orient are often disgusted with the missionaries who practise what to the Buddhists is a sort of cannibalism — slaughtering and eating God's creatures. Denouncing the hog as a very dirty animal and then eating it, is, in the eyes of the pagans, worse than barbarism.

"A prominent church-member of Philadelphia, who talked his kind of religion on the streets of the city from a carriage drawn by a bob-tailed horse, was rebuked by a secular journal. No noble man, no gentleman, will sanction the mutilation of God's creatures to suit the whim of bipeds of low aspirations. Great souls abhor such cruelty. The declaration of the Son of Man relative to those that are saved — 'inasmuch as ye did it unto one of the least of these, ye did it unto me' — applies not only to man, but to all of Allah's creatures."

"The pipe face" is described by the *Medical Record*. "It is declared that the constant habit of smoking pipes has a perceptible effect upon the face. The pressure of the lips to hold the pipe in position increases the curvature of the lips around

the stem, and the muscles become more rigid here than in other parts. Thus the lips at a certain point become stronger, and the pipe is unconsciously held in the same habitual position. After long continuation of the habit, small circular wrinkles form parallel with the curvature of the lips around the stem. These are crossed by finer lines caused by the pressure of the lips to retain the pipe in position.

"In the case of old men who have smoked a pipe for years, the effect upon the lips is very marked, not only altering the form of the lips, but of the entire side of the face, causing the wrinkles that are the result of age to deepen, and, instead of following the natural course of facial wrinkles, to change their course so as to radiate from that part of the mouth where the pipe is habitually carried. Furthermore, one or both lips often protrude, just like the lips of people who used to suck their thumbs when children.

"The effects of pipe smoking upon the teeth and lower jaws are even more apparent than in the case of the lips. If any man who has smoked a pipe for any considerable length of time will take the trouble to examine his own teeth, he will find that at the point where he usually holds the stem between his teeth the latter have become worn."

"Involution through Drink" is considered by E. Mac Dowel Cosgrove, M. D., in the *Medical Temperance Review*. He says: "'The history of the race is repeated in the development of the individuals,' is a well-recognized law of biology, and by tracing the single cell in its course until it has built up the highly organized, many celled individual, we can follow the chief steps by which that highly organized individual has, during the ages, been evolved. But this can be done analytically as well as synthetically, and that easily enough by watching the retrogression of a man during a bout of drinking.

"Starting with the clear intellect, the erect position, the capable hand, and the other attributes that have placed him in his proud position, these are thrown aside, one by one, and the man remains but in outline. First, the erect gait is impaired, and he has to use his hands to assist in his support; here he has reverted to the monkey type; a little later he is more unsteady, and crawls like the four-footed beasts; still later he rolls on the ground, his limbs being useless appendages in his worm-like condition. By this time co-ordination is at an end, the cells no longer pull together; he has ceased to be a multicellular unit, and is but a colony of unicellular organisms; he has fallen from his pre-eminence to the lowly form in which life was first created. Sometimes the involution does not stop here, and drink bridges the dark space that lies behind the first vestige of life, and the living man is reduced to lifeless matter."

The mosquito requires two and one-half hours to develop from its first stage, a speck resembling the germ of cholera, to its active and venomous maturity. The *Public Health Journal* states that this insect, in any stage of growth, may be instantly killed by contact with minute quantities of permanganate of potassium. It is claimed that one part of this substance in fifteen hundred of solution distributed in mosquito marshes will render the development of larvæ impossible. "A handful of permanganate will oxidize a ten-acre swamp, kill its embryo insects, and keep it free from organic matter for thirty days, at a cost of twenty-five cents. A single pinch of permanganate has killed all the germs in a thousand-gallon tank."

MOTHER AND CHILD.

BY MRS. E. E. KELLOGG.

THERE are no children without faults. All have natural tendencies to evil, and most of them acquire wrong habits from their very infancy. There is no patent way of training children. The child's nature must be carefully studied. Each child must be considered as a separate individual, to be treated according to his special needs and proclivities. Faults must be analyzed to see what causes lie back of them. Treatment must be directed as the skilled physician directs his treatment of bodily disease — toward the rooting out of causes.

In small children nearly every fault is a reflected one. They are apt imitators of both good and evil. Far too often parents themselves are the cause of the deficiencies in their children; perhaps not the direct occasion of a sudden outburst, but the indirect cause, leading back sometimes through a long train of circumstances. One occurrence is not likely to affect a child unless it is something of such unusual character as to merit his special attention, and thus become emphasized upon his mind; but the constant recurrence of a good or an evil influence will have a molding power over him. Let the first step in the correction of our children's faults be a close heart-searching into our own lives. If we have any reason to suspect that we have been in the slightest degree instrumental in leading a child into error, then let us go to work at once to overcome the fault in ourselves, at the same time making every effort to correct it in the children.

The child's environment must also be the subject of special study and care. Example and environment are the most successful teachers of all little children. A child's physical condition is often sufficient to explain all its so-called naughtiness. Any one who has had the experience of a fit of nervousness resulting from physical causes can remember how ill-tempered and unamiable one is likely to feel at such a time, and can readily understand how the child, who has not yet learned to hold his feelings in check, would be likely under similar circumstances to exhibit disagreeable traits. Too often there is reason for the complaint of the little girl who said, "When I feel bad, they say I am naughty; but when mama feels bad, they call it nervous." What many a child needs for the correction of seeming faults is a better physical condition.

The mental status of the child is often the basis of what we term faults. Lacking judgment, perception, ability to reason, or some other mental attribute, the child is unable to grasp a complete situation as the adult mind does, and hence arise what, viewing the matter from the adult standpoint, are called faults, but which, were we to look at things from the child's standpoint, might not appear so far out of line after all. The writer has often heard a child say, "Why, mama, So-and-So says that what I did was wrong, but I can't see anything wrong about it;" and when the child had analyzed the matter from her standpoint, it was necessary to acknowledge that the wrong was really in the mind of the other person, who had been educated to look upon the act as evil, though the motive connected therewith was in nowise wrong.

The necessity of every mother's having a deep insight into a child's nature so that she may be able to fathom the child's mind, unravel his motives and guage her treatment of him according to his needs,

becomes more and more apparent with each step in our study of mother's work. A child's mental weaknesses or lack of judgment and reasoning power should never be treated as faults. They cannot be corrected by punishment. It seems almost marvelous that any child should reach maturity with even a modicum of good sense, good temper, and good nature when we realize what bunglers we are in our work of trying to mold and train human beings. More carefully than we guard the child we must guard ourselves in correcting him, lest some unworthy motive influence our conduct.

Mothers must be on the alert; they cannot drift along, letting life take its course. Evils come into our children's lives with muffled tread, often so wholly unannounced as to be unsuspected until they are dangerously well grown. It has been truly said, "Most good habits must be instilled by constant diligence, but evil habits grow by magic."

In the correction of individual faults one point is pre-eminently important, viz., the selection of a right time and place. Any one who has studied the cultivation of flowers understands that even a thing so necessary to their growth as water may be given them at a wrong time; so discipline which is necessary for the child may be administered at the wrong time. When a child is tired, sleepy, hungry, fretful, is seldom the right time. There are hours when his heart is softened and his conscience awake; there are moments when the little one creeps into his mother's arms; then she can reach him, and exert a lasting influence. It requires the exercise of much love and patience on the mother's part to restrain herself from giving reproof except at suitable times; it is so natural at the moment to consider the offense the chief thing, rather than the offender. Most of us are too often influenced, even more than we would be ready to acknowledge, by the effect of the child's misdemeanor upon our own personal comfort or peace of mind.

Tact and continuity of purpose are necessary requisites in child-training. One author says, "The difficulty in correcting children's faults lies not so much in the general plan as in working out the details each day. The efficiency of correction lies in its continuity, its absolute invariableness at all times. It is of little use to attempt to correct a fault by occasional threats and punishments. For example, a child has acquired the habit of leaving the door open. Occasionally speaking to him, now and then punishing him, will never cure him of the fault. But if there were an automatic figure standing by the side of the door to say, 'Door, door,' to him every time he came through without shutting it, which call would be a signal for him to go back and close the door, then sit down in a chair near by and say, 'Door' ten times, and if this slight penalty were invariably enforced, he would be most effectually cured of the fault in a very short time. Now the mother can not serve exactly as this automaton, for she cannot always be there; but she can recognize the principle, and carry it into effect so far as possible." Many mothers would demur at the amount of time and effort demanded of them, nevertheless it seems to me to be the only sure way to help children to overcome some faults.

The only way to displace a wrong habit is to put a right habit in its stead. Doing anything habitually is an element of no small account in child-culture; and if a child is habitually doing a wrong thing, it must be led habitually to do the right thing in its place. This takes much effort on the part of the mother, and we often feel inclined to let the mistake pass without correction; but every such interruption only lengthens the time of the

cure, if it does not avert it altogether. If the mother's part in the correction of her child is hard to perform, who shall say that the child's is not harder?

Loitering is a fault common with many children, and often difficult to overcome, because the child disposed to loiter is not always willing to make an effort to overcome it. In the correction of all faults it should be the mother's aim to secure the child's co-operation as fully as possible. With the habit of loitering the writer's experience has been that punishment is of little avail. What may be called strategy has proved more effective than anything else. Simple pleasures awaiting the child when a task is completed,—not rewards for not loitering, but pleasure ready at an appointed time,—have been arranged for the child, having apparently no connection whatever with his habit of loitering. For example, the mother can say to the girl given to loitering about her work, "At two o'clock I will be ready to help you with your doll's dress; I think I can spare you fifteen minutes then." In her calculation she has allowed the child just time to complete her work well, but has said nothing to her about hurrying to get it done, because it is better not to remind her of her usual failing. It is wiser not to admonish her by saying, "If you have your work all done by two o'clock, I will help you," because she should not be taught to consider the pleasure as in any way a reward for doing her work quickly. The time during which the pleasure will be obtainable is limited, so that she will understand that she can not linger or she will lose it. This inducement serves as a spur to help her to complete her work on time, and a little judicious commendation when it is really done helps her to try next time to do as well. For the child who loiters on the way from school, an appointment at a time just long enough after the close of school for him to reach home, will generally bring him on the run. Try to have something he particularly likes to do, ready at that point in the twenty-four hours when he is most likely to fall into the temptation of loitering. There is a great deal accomplished by the child-trainer when in any way she can intercept temptation.

For the treatment of the habit of carelessness perhaps there is no better plan, especially as to some phases of it, than to insist that the task be finished, and to consider no work completed until everything is put in the right place. Of course this necessitates a right place to put it. If the mother fails to provide this, she can hardly expect the child to do otherwise than "leave things around." The idea of entirely finishing the work can be utilized to help the children in many ways. If sewing, the work is not done till the needle and thread, as well as the work, are put away in the right place, and all the litter cleared away. If changing the clothes, this is not completed until all soiled garments are carried to the laundry, and those exchanged are hung in the proper places. If the child has been feeding the cat or dog, the dishes and crumbs are to be taken care of. The insistence on the part of the mother that whatever the child undertakes shall thus be completed will in almost every case prove one of the surest aids in breaking up the habit of untidiness.

It is also an excellent plan when the regular work hours are over, to call all the children together, and ask each one what he did to complete his work, having them name over the things they remembered to do; this calls their attention to the things that they ought to have done, and they will generally of their own accord mention anything they have left undone, and will desire to go at once and do it. Sometimes go the rounds with

them, and let them find the things that are out of place; have a sort of hunt-the-thimble game. This serves to quicken their perceptions, and teaches them to notice little things.

To correct a small child that is exceptionally noisy, the plan is usually successful of sending him to a room that is unoccupied by others, to make a noise until he gets tired of it, telling him that other people enjoy quiet, but that so long as he prefers noise, he shall have the privilege of making it, in his own company. So long as he continues his noise, it will ordinarily be safe to leave him alone; but when he becomes quiet, it is best to investigate the cause, for quiet under such circumstances may mean mischief.

How to cure an obstinate child is one of the most difficult problems which parents have to solve. Both obstinacy and quick temper should be aroused as little as possible. The more frequently such characteristics are called into action, the stronger the tendency will become, since bad traits as well as good ones are strengthened by exercise. The writer has known both of these tendencies to be successfully treated in small children by the parents' assuming that a fit of obstinacy or an outburst of temper was an indication of serious disease; the little one was treated as if suddenly taken ill, and was given a foot-bath and put to bed in a darkened room, with cold wet cloths over his head and eyes, while his temperature was taken. Quiet was enjoined upon every one, that he might get well the sooner. Half a day's experience of this sort every time a fit of passion got the better of the child, soon taught him self-control.

As a help to a child in overcoming that most common of all faults, selfishness, teach him active service for others. "If we have to deal with a child in whom the selfish predominate strongly over the unselfish motives of action, we must seek in the remote corners of his nature for some regenerating spark of feeling. We may find it in reward of patient search, in the child's love for something or somebody, which may be used as a wedge to open his heart. In trying to help children to overcome faults, do not permit the excuse, 'I can't help it.' Train them always in the belief that it is in their power, with the help of God, to do whatever is right, and that they must never cease trying till they have overcome."

HAVE you noticed how nature preserves her honor? Every year she attacks the frowning fortresses of the world, and overcomes them with fresh green vines. The fragments of deadly shells fall upon her breast and rend it, and, behold, she covers the cruel messengers of death with soft green moss, and hides them in an embrace of flowers. She builds nests for her little ones in the cannon's mouth. She lines the dusty highways with golden-rod, sweet clover, and black-eyed susans, and drops a thistle-down into wagons loaded with offense. Plow and harrow her, and she will season your sowing with a little of her wild mustard and morning-glory vine. Cut down her oak-trees, and she will provide maples. Rob her of her pineries, and she presents an oak forest to the sun. Enter her orchards with a club, and she gives you an apple for a blow. Pierce her bosom with deep holes, and she provides you fresh water from the hills. Neither man nor devils can injure her honor, and her only defense is a bloom or a blessing.—*Arthur Henry.*

Eternal Love

BY MARY HENRY ROSSITER.

When I was a babe, I dozed, and dreamed
That God, from beyond the clouds, with me
Had come to dwell in my mother's arms,
And feed me with love, eternally.

When I was a child, I played, and dreamed
That far in the fairy mystery
Of Oberon's realm the Queen of Love
Her bower would keep, eternally.

When I was a maid, I mused, and dreamed
That life her intent had told to me;
To love was enough for one to do,
To love and be loved, eternally.

When I was a bride, I sang, and dreamed
That life had no more a minor key;
My heart was filled with the sweet refrain:
This love will endure, eternally.

When I was a mother, once more I dreamed
That out of the depths had come to me
The marvelous pearl of love I sought,
The love that would stay, eternally.

But now I am old; my dreams have fled.
From the sunset land a star I see,
The star of a pure and changeless love,
The love that abides eternally.

'Tis not on earth that a perfect love
Can dwell in a human heart for me;
'Tis not on earth that my heart can feel
The love that is true eternally.

Only the infinite love of God
In that perfect heart that is to be,
In that perfect heart of thine and mine,
Can, immortal, dwell eternally.

My star in the West grows brighter, dear,
And oft I think that it beckons me.
How sweet with thee in that other world,
To love with His love, eternally.

YOUR SIGNATURE.

BY MRS. S. M. I. HENRY.

A PARTY of guests stood on the lawn after dinner, watching and talking about a group of beautiful children at play, when Mr. Morton, turning to Judge Horn, their host, dropped this apparently irrelevant remark : —

"Anybody could tell your signature from a thousand."

Strange to say, after the briefest moment spent in reflection, all who were within hearing turned to look at a bright little fellow of eight or nine, who was evidently doing his best to entertain the younger guests ; and after watching him a moment, smiled, nodded significantly, and began to say among themselves, as if in answer to the speaker : —

"Yes, that's so."

"How like!"

"The very attitude."

"An astonishing resemblance."

"Like father, like son."

"Did you ever see anything so perfect?"

One enthusiastic voice exclaimed : —

"The cunning little wretch! he's the judge all over, and it's just too funny to see his honor in those clothes, reduced to that size."

Whereat there was a merry peal of laughter.

But the judge followed the laugh, in which he had heartily joined, with the earnest reply : —

"That was well said; he is my signature, indeed ; a 'living epistle,' as the good book puts it, by which I am to be known and read of all men."

"How dreadful!" gasped young Mrs. Wakeley, while the men of the party looked askance at one another.

"Why dreadful?" asked the judge.

"Why? Because — just think of it — a living epistle! It is dreadful enough to have an old dead letter come back to you that nobody has read but the dead letter clerk, and that you have the privilege of throwing into the fire. I am afraid of letters, old or new. I think letters have terrible possibilities in them. I never write one if I can help it, and then I insist that it shall be destroyed just as soon as read ; but 'a living epistle, to be known and read of all men ;' horrors! judge, I want you to take that all back, right away ; for I think I shall be so afraid of Karol if you don't that I shall not know what to do with her."

Every one knew the intense nature of the brilliant young woman who said this with that peculiar blending of jest and earnest which flavored her words ; and yet, this time, there seemed so much to the "earnest" that the "jest" was neutralized ; and it was a very sober party of fathers and mothers who, with feelings altogether new, stood looking at their children as they romped together in their innocent unconsciousness.

At last one young man said : —

"That is really a very startling thought, judge ; but you seem to take it as a matter of course, just as you would any document which you had deliberately dictated to your clerk, and which, after looking carefully over, you had just as deliberately signed, and are ready to send out, and stand by, as your own."

"But, suppose, Mr. Waight, that I were not ready to accept and stand by yonder epistle ; what should I do?"

"Of course, there you are ; it is plain there is no escape ; but this cold-blooded way of dealing with such a tremendous thought rather staggers one ; because, you see, in those few words you

have transformed one's child into — what shall I say? — a witness against one's secret life from which there is no possible escape. It is like the letter of confession, which, as Mrs. Wakeley has intimated, it would have been much better for your reputation if you had never written. It looks as if fate had taken a very unfair advantage of us."

"Now, Charley," chided a sweet little girl of a woman, pouting up at him, "I don't see what there is in Harold to make you talk that way; for my part I am not afraid or ashamed of him."

"No, that 's all right, Margie. If I was as sure that my part in him is all right as I am that yours is — "

"Well, now, this is getting to be a rather sober council, I should say. I had no idea of what it would lead up to when I began it," said the first speaker. "But I confess I am interested. What is a letter but the expression of a man's thought? And his signature is that by which he acknowledges that it is his; and by which the law will hold him, even if he is afraid of it, and would like to repudiate it. And what is a man's child but another form in which he expresses himself? And when a man has written his own personality all over his child, as Judge Horn has over that boy of his, there would be no use of trying to get away from the authorship, even if he wanted to. I think the law will hold you to your signature, judge."

The judge smiled. There was a little ripple of laughter, but for the most part the company was still sober, under the sense of responsibility that had settled upon it.

Just then there came a call from among the children.

"Come here, mama, please, and play with us."

It was the little host; and his appeal was seconded by the whole troop, who with a shout and a pell-mell rush came on, and with soft little clinging hands captured the mothers and carried them away in triumph, leaving the judge and his men friends alone.

They stood for a moment silent, watching the scene of merriment which was being enacted before them, each face expressive of deep and tender feeling. All that is best in any man would come to the surface under the influence of such an episode.

"That makes a man wish that he could be all that he ought to be," at last remarked Mr. Waight, "but — "

"Well," said Mr. Grey, speaking for the first time, "for my part, I think it is the mother that makes the man; so I don't worry. I gave my children the best mother in the world, and so they are sure to be all right."

"How do you make that out, Mr. Grey?" asked Mr. Waight.

"I don't make it out at all; I leave that for Mrs. Grey. If the child is to be considered in the light of a letter, and, by the way, that 's a very neat figure of speech, why, then, my wife must take the original copy, like one's stenographer, you know, and she must just go to work and correct all the mistakes, straighten out all the tangles in grammar and sense, so to speak, and make it read as it ought to. And when it is all fixed up right, then no man need be afraid to own his signature. Everything depends upon the editorial work, you see. There is no danger but what it will be all right; a man is what his mother makes him."

"Then," began Mr. Norton; but he paused, while he looked into the face of Mr. Grey. Their eyes met; Mr. Grey's face colored slightly, and answering to the unspoken question of a life-long friend, he said hesitatingly: —

"Of course — a man's mother is — of course — well, it is to be understood that he — that is, — that she is a great deal

better than he can be. She, of course, has ideas that a man can't always live out, you know — when he gets to be a man — you understand."

"Then you would not claim that a man is, after all, necessarily the expression of his mother, and that her character is to be judged by what he is?"

"Well, as to that, not exactly of course; not — not my mother, of course; she is — well, as good as they make 'em; and I — well I can't brag, you know; and besides — everybody knows that many a good mother has had a son that —"

The sentence was never finished, for at that instant there came a great Indian war-cry, — a "whoop, whoop, whoop," from a dozen throats, — and an onset of fierce young warriors, who broke in upon the "gravity of the situation," took their fathers captive, and carried them away to the playground, greatly to the relief of some of the men, who had come nearer to an inside view of their own personal responsibilities than was by any means comfortable to a man of the world.

There was a merry time, in which care was shaken to the winds, and everybody was young again for just a little while; but when the frolic was over, and the evening shadows began to close in about the stately mansion, Mr. Grey stole off to the corner of the piazza where Grandmother Horn was sitting in her easy chair with a white shawl about her shoulders, and throwing himself astride the balustrade, he said: —

"I've come to ask you a question; no — not exactly — yes, I guess that is all right too, anyhow I want to talk with you about my boy, and myself, you know. You see, you knew my mother before I was born, and I feel that I can — can't I —?"

"Yes, indeed, bless your heart; you can say anything, ask me anything. That's what I'm for."

"Thank you; it's awfully good of you. You see it's just this way: Now I know I disappointed my mother just as well as you do; I'm rather of a disappointment to myself. But what I want to know is, what is going to be done with Jack? I — I'd rather like not to have Annie disappointed very badly, you understand —"

"Yes, I understand."

"She's a good girl, Annie is, and has done her best, I believe; but —"

"Yes, she has done her best; but —"

"You know, Grandmother Horn, I've had a notion, and I've said it boldly, that it was Annie's business to bring up Jack, you know, and the other day something came up, and she asked me if I wanted Jack to be like me; and I said, 'What do you take me for? I'd rather see him dead,' and I would too. And then she asked me how I was going to prevent it, for he was getting more like me every day; and then I said a brutal thing; I said, 'I expect you to prevent it, that's what I got you for; and if you couldn't make a better man out of our boy than I ever professed to be, you had no business to be my wife."

"Poor Annie!"

"That's right — I see it now, I did in two minutes, and I was sorry; but I wasn't man enough to say so."

"You'd better say it as soon as possible."

"You're right again; she's looked awful pale sometimes, since."

"Of course; it's heavy work for a woman to carry the boy all the way alone, before he comes into the world, as well as all the years he is growing up: I don't think it is quite fair, do you? She has her part, and is generally willing to do all that belongs to her, and sometimes a good deal more. My grandfather used to say it was 'most too bad to load a critter so heavy that it couldn't go, just because it was willing, or so yoked up

that it could n't help itself,' and I think he was about right; looks reasonable that each one should carry his own share.

"Now a growing boy is no light load, and the only way to get him safely over the road is for both father and mother to join hands and lift together, so:" — and she made a "chair" in pantomime.

"Right again," said Mr. Grey; "you 're always right, and need never be ashamed to acknowledge your signature."

"My signature?"

"Yes; your child is your letter, you know, signed, sealed, posted, and delivered for all the world to read; a living epistle. Judge said so."

"O, is that it?"

"That 's it, and I 've been playing off the stenographer act on Annie, presuming that she was to correct all my mistakes, you know."

"I see."

"But I rather think that this letter has got to be collaborated and jointly signed, to hold in law."

"Something like signing a deed to a farm," suggested Grandmother Horn.

"Just so. Thank you. Good night. I 'll talk it out with Annie when we get home."

He swung himself down from the piazza, and, lifting his cap, was starting off when the gentle old voice detained him.

"Just wait, Albert; I want to tell you one thing: she could possibly do it and make a man out of the boy in spite of your influence, by getting help enough of the right sort, but — shall I say it?"

"Yes, say on. I 'm ready for anything."

"Well, if she succeeded in doing all that you require of her, she must first break your influence over your boy, and you would have to keep your hands off, and see him grow up to despise the man you are in spite of all the love he might keep alive for his father."

"What 's that?"

"The truth; nothing but the truth. Could he be pure and true and not hate impurity and untruth? He would hate it all the more if he found it in you, because of your relation to him and his mother and —"

"Don't, grandmother; I see it! that 's enough."

And he started as if to plunge off into the gathering darkness, away from the lights, and the group that was waiting for him to join them before breaking up.

He made a few long strides toward the outlying glooms, paused, stood a few moments with his head bowed, then turning, he came back; and Jack, who was running to meet him, heard only this: —

"Good night, Grandmother Horn, good night."

"Good night, Albert, and *all good* to you and yours night and day forever."

"Thank you."

Miss Josephine Kipling, the eldest child of Rudyard Kipling, was whipped, according to the story, for telling a fib, and went to bed sobbing rebelliously, "I think it 's real mean, so there. My pa writes great big whoppers and everybody thinks they 're lovely, and I only told just a tiny little story, and gets whipped and sent to bed."

Come in, gentle breeze; round my window you 're playing,
Making the maple leaves dance with delight;
You whisper of juicy blackberries and haying,
Dear pleasure of summer debarred from my sight.

Come in, gentle breeze, with your sweet, cooling kisses,
Come bring to my bedside the scent of the trees;
Come quench from my veins the hot fever that hisses,
And lull me to sleep with the song of the bees.

— *W. H. Johnson.*

THE PROPER FEEDING OF INFANTS.

BY KATE LINDSAY, M. D.

(Concluded.)

In dealing with matters pertaining to health and proper development, there is the practical and the scientific side of the question. The nurse can often deal with the practical side more successfully than the physician. In fact, the mother herself can soon learn what effect her habits of eating, drinking, dressing, exercising, controlling her emotions, have on the health of her child. The physician or microscopist may be able to analyze milk, and tell whether fats, sugar, proteids, or salts are wanting or in excess, but the nurse is the one to connect the relation between the fretful child's colic and the mother's errors in diet, or to understand that the undigested food and bad-smelling excretions of the infant are the result of the overeating and indolence of the idle, overfed woman.

It is the place of the nurse to instruct the young mother how to dress so that her nervous system will not be injured by the clothing she wears, and so that no organ or structure will be displaced or constricted in any way. She should show her the effect that giving way to her emotions necessarily has upon the health of the little one. She should be quick to notice when anything is likely to hinder the mother from successfully nursing her child. It would be much better to try to heal chapped or sore nipples than to advise the mother to wean the infant, only to find, when too late, that there is no artificial food that will agree with the little one's stomach. The ability on the part of the nurse to treat the nipples so that they will not become sore, to instruct the mother how to dress her breasts, to apply massage so that the oversensitiveness of the tissues may be relieved, to apply a bandage so neatly and skilfully as to support the breasts and relieve the congestion of these organs, may mean the saving of an infant's life; it will at least in many cases prevent serious disease.

The natural infant food, when perfectly formed, is an aseptic fluid, but it may become contaminated from want of cleanliness in the care of the nipples, or lack of care of the baby's mouth. The wearing of soiled clothing next the breasts may also be a source of contamination. The cleanly dairyman looks well to the condition of his cows' udders, and frees them of all dirt likely to drop into the milk-pail. The same care and forethought should be taken to prevent human milk from contamination. The most common causes of disease, and those most apparent, are the ones most likely to be overlooked. The nurse need not possess the scientific knowledge which would enable her to make an elaborate analysis of milk, but she can cultivate the perceptive faculties, and be quick to notice whether the infant is properly digesting its food or not. She should be able to mark the symptoms of disordered nutrition and faulty digestion, and to trace the relation they sustain to the mother's habits of life. She may be able to advise the idle, overfed mother as to her exercise and diet. She must not content herself simply with prescribing a course of exercise and dietary, but must watch the effect of it. If the patient is under a physician's care, it is not enough that she follow out the regimen he sees fit to prescribe, but it is also incumbent upon her to note and record the results of it; for this will en-

able him more thoroughly to understand the case. She may be able to teach the irritable and nervous mother how she may so order her daily life that she may become calm and cease to waste her nervous energy, thus depriving her child of suitable nourishment. She should try to teach a passionate, easily excited mother self-control, and awaken her will-power by showing her the relation between the convulsions the little one suffers and the outbursts of temper which shock and disturb her own nervous system.

It is the common, every-day Christian duties that are most often neglected, and it is the common causes of disease which every one can see and understand that have so long been overlooked.

As to the cause of disease, it has often been regarded as some mysterious judgment sent upon mankind for reasons known only to our kind Heavenly Father. The heart-broken mother, weeping over her dead baby, tries to be submissive to the divine will, yet she will go on and feed and treat other infants according to the very methods that occasioned the illness and death of the former, never knowing that more intelligence on her part and the proper regulation of her own life might have kept all her children in life and health.

CHILDREN'S SCHOOL LUNCHES.

NO. 1.

Graham Fruit Bread with Nut Butter

Canned Fruit

Creamy Rice Fresh Fruit

NO. 2.

Cream Crisps with Lettuce Salad

Nuttose Sandwiches

Fresh Fruits and Nuts

NO. 3.

Rolls

Cold Baked Beans Fruit Tarts

Toasted Granose Biscuit and Butter

NO. 4.

Sally Lunn Gems with Nut Butter

Stewed Peanuts

Cocoanut Crisps with Fresh Fruit

RECIPES.

Creamy Rice.— Put a pint of milk, one quarter of a cup of best Carolina rice, a tablespoonful of sugar, and a handful of raisins into an earthen-ware dish, and place on the top of the range where it will heat very slowly to boiling temperature. Stir frequently, so that the rice will not adhere to the bottom of the dish. When boiling, place in the oven, and bake till the rice is tender, which can be ascertained by dipping a spoon into one side and taking out a few grains. Twenty minutes will generally be sufficient.

Graham Fruit Bread.— Dissolve one-fourth cake of compressed yeast in a pint of sterilized milk or water; add a pint of white flour; beat thoroughly, and set to rise. When well risen, add three and one-fourth cups of flour (graham and

whole wheat, equal parts, thoroughly mixed), or sufficient to knead. Knead well for half an hour, and just at the last add a cup of raisins, well washed, dried, and dusted with flour. Let the loaf rise in mass; then shape, put in the pan, and set away until it becomes light again, then bake.

Sally Lunn Gems.—Beat together the yolk of one egg, two tablespoonfuls of sugar, and one cupful of thin, ice-cold, sweet cream. Add slowly, beating at the same time, one cup and two tablespoonfuls of sifted graham flour. Beat vigorously until full of air bubbles, add the white of the egg beaten stiff, and bake in heated irons.

Baked Beans.— Pick over a quart of best white beans, and soak in cold water over night. Put them to cook in fresh water, and simmer gently till they are tender, but not broken. Let them be quite juicy when taken from the kettle. Season with salt and a teaspoonful of molasses. Put them in a deep crock in a slow oven. Let them bake two or three hours, or until they assume a reddish brown tinge, adding boiling water occasionally to prevent their becoming dry. Turn into a shallow dish, and brown nicely before sending to the table.

Stewed Peanuts.— Shell the raw nuts, and blanch by pouring boiling water over them. After they have stood a few minutes, the skins can be easily rubbed off. Add to a pint of the blanched nuts about two quarts of water, put them into a bean pot; heat to boiling; then place in a slow oven and cook for nine or ten hours. When done, they should be soft, mealy, and rich with juice. No seasoning except a little salt will be required.

AN OLD, OLD STORY.

BY ABBIE M. WINEGAR, M. D.

A CORRESPONDENT of a popular journal recently asked, "What sized corset should be worn by a young girl whose waist measure is twenty-three inches?" "A twenty-one-inch corset," was the answer. When one thinks of the young women who, upon reading this advice from a highly admired authority, would straightway enclose their yielding flesh in a mischief-making garment, the subject of healthful dress does not seem quite worn out.

One cause of the persistent unpopularity of dress reform is the prevailing idea that healthful clothing must be as unseemly and untidy as possible, and entirely different from conventional attire. Although health is the first essential, we should not overlook other important requirements. While it is certainly unhygienic to follow the fashion in every respect, one's dress may be comfortable, healthful, and sensible, without in the least interfering with its beauty, propriety, and harmony.

"The health should be as sacredly guarded as the character;" for without health it is impossible to attain to the highest physical development. In order to have perfect health, every organ must be allowed perfect freedom; and the dress should be so constructed that every organ may perform its function properly. This the conventional dress of the present day does not allow.

There can not be real beauty without harmony, and it is a duty which we owe to our friends and to our Creator to show forth the beauty he has given us by dressing our bodies in such a manner as to

make them as attractive as possible. Everything in nature is clothed in beauty. Is it reasonable to suppose that God designs those who are created in his image to be less beautiful?

The consideration of comfort is likely to prove a snare to the unwary. It is difficult to find a woman who will admit that her dress is uncomfortable. She herself, though laced ever so tightly, is usually under the delusion that she is really comfortable. Only after she has worn a healthful costume long enough to know its comfort is she able to distinguish between a comfortable and an uncomfortable dress.

The style of the dress should be that best adapted to her work and her station in life. One should not wear the same dress on the street as at a reception. It is necessary to speak of this point, for some persons who have adopted a healthful dress have only one fashion; they think all their clothing must be made in the same way, and cut after the same model. This soon becomes monotonous to one's self, as well as to other people. It is important to have the clothing adapted to the surroundings.

Conventional dress pays very little attention to the natural form and its necessities. One of the very first evils to which it gives rise is deformity, in the general displacement of important organs. In the beginning the Creator formed the body in the best possible way,—a way which would give to it every advantage in serving the needs of its owner; every organ was so constructed and located as to be able perfectly to perform its functions. If, therefore, any organ is displaced, however little, it interferes with the function, not only of this, but of all the other organs. Each organ in the body has just room enough and no more, so that when one organ is pushed out of place, all are necessarily disarranged.

The principal organs of the body are located either at or above what is called the waist line. The liver lies on the right side, and the stomach on the left, above the waist line. The natural position of the stomach is two inches above the umbilicus; the kidneys lie on either side below the waist line. If the body is in a perfectly healthy condition, if there is no interference or restriction in any way, these organs remain in their natural position; but if there is interference, they must inevitably be crowded either upward or downward. On account of the bony resistance of the chest and the attraction of gravity, the displacement is naturally downward.

The deformity of figure caused by conventional dress is so common as to be practically unnoticed. We are so accustomed to the stiff and awkward appearance of stylish clothes that we have almost forgotten that the natural body has graceful curves and pleasing outlines. The restriction and distortion caused by clothing that fits an artificial rather than a natural standard of form, interferes seriously with the healthful operation of organic functions.

Obstruction of the circulation is another evil arising from improper dressing. Whalebones, steels, and bands hamper the action of the large arteries passing upward and downward from the heart. Headache, cold feet, nervous disturbances, may result from this disregard of nature's plan.

Not only is the circulation hindered, but the respiration also is seriously affected. The ordinary dress of woman so compresses the lungs that the blood is not properly oxygenated, and hence cannot effectively do its work.

The nervous system may not be so directly injured as are the various organs, but the general functional disturbances lead to various nervous disorders.

While the nerves are not easily com-

pressed, the disarrangement and compression of adjacent parts cause the nerve cords to become stretched and tense, thus producing strained relations throughout the entire physical organization. Pressure upon any part of the body has an injurious effect. If a cord be tightly tied about the arm, it interferes with the circulation in that arm. The blood cannot properly purify this part of the body, and the stoppage would in time poison the whole system. Wearing a tight collar very often causes headache because the blood becomes stagnated, and does not carry a sufficient supply of oxygen to the brain. Heavy skirts, if worn unsupported, are just as unhealthful as corsets, and do quite as much harm. This is especially true where the corsets are worn loose, as most of them are at the present time.

Most of the popular substitutes for corsets have practically the same effect as the corset itself. A boned waist of any kind hinders the development of the figure, and fails to bring out the natural and graceful curves of the form. Instead, it covers them up. It gives the same stiff appearance as the corset. If the whalebones are taken out, there is not so much objection to it; but when we undertake an improvement, we should learn the best methods, and follow them out conscientiously, and not adopt something that is merely a subterfuge. When we can easily learn to dress in such a way as to preserve the health, and bring out the natural curves and beauty of the human form as given us by the Creator, to do so is certainly our imperative duty. It should be every girl's ambition to develop a natural figure.

BATTLE CREEK SANITARIUM QUESTION BOX.

BY J. H. KELLOGG, M. D.

1. WHAT do you think of bio-chemistry, or Schussler's system of tissue salts?

Ans.— I think it is a beautiful mind cure. It has no rational foundation. The salts found in the ashes of food are not like the salts of live, organized foods. For instance, if one of these live foods should be reduced to its elements, as the elements of starch, of gluten, of fats, or of sugar, and if all these elements should be fed, one by one, to a person, that man would starve to death under the process just as quickly as if he had nothing at all to eat.

2. If one is abstaining from all food, and still has a white-coated tongue, what is the next plan for thwarting the microbes?

Ans.— The white coat on the tongue may not mean that the microbes are growing very fast. It is not necessary to abstain from food. One may just as well be comfortable and live on fruit. Probably Dr. Tanner would have derived quite as much benefit from his forty days' fast if he had had a forty-pound watermelon to eat every day. An aseptic condition of the stomach and alimentary canal may be better brought about by eating fruits than by fasting, because the acids and juices of the fruits destroy the microbes and prevent their growth.

3. What is the value of the current theory that all the ills that flesh is heir to would be obviated if people would only dispense with their breakfasts?

Ans.— If a person eats a hearty night dinner or supper, it is a good plan to go without breakfast. It is a far better plan to have an afternoon dinner, and then eat no supper. If one goes without supper, he has sound sleep, and a fine appetite for

breakfast. If he eats a late supper, he perhaps spends a restless night, and has no appetite in the morning.

4. Can the nervous system, once diseased, be perfectly restored to health?

Ans.— No. When a person has once been chronically sick, he can never become entirely well again. If a crystal vase is broken, it can be cemented together, but the crack remains. A severe burn always leaves a scar. The skin is not so perfect as before, or rather, there is no longer a skin, but a covering. This covering has no glands and no hair-follicles. It is the same with any other part of the body; once injured, it can not be restored to its original perfection. Nevertheless, when by living a wrong life one has been reduced to a low physical condition, by conforming to the laws of health, by discipline, and by accepting the lessons of suffering, he may so recover his health as to be able to live a better, higher, more effective life than before.

5. Is it injurious to use caffein and antipyrin in making "fizzing drinks"?

Ans.— Yes; neither is fit to be swallowed. It is a great mistake to take any of these patent medicines habitually. Both caffein and antipyrin are poisonous.

6. Is it true that animals, aside from man, have an instinct that leads them to eat before lying down for the night?

Ans.— The instinct of the animal leads him to eat whenever he is hungry; and he will eat at night if he has had nothing to eat during the day. But the animal that has had the advantage of feeding when he chooses, will not eat just before lying down at night. "But," you say, "the cow lies down under a tree and goes to sleep at noon after eating." That is the common observation, but the cow is not asleep; she is chewing the delightful cud that she has swallowed into her procession of stomachs,— for she has four, — and this chewing and ruminating go on hour after hour, but she does not sleep until she stops chewing. Horses lie down after eating, but they do not go to sleep until they can sleep quietly. The dog eats and lies down behind the stove, but although his eyes are shut, he is not really asleep. If any one comes in, he opens one eye sufficiently to know what is going on. He keeps his eyes closed because he is happy and comfortable, and enjoying his breakfast. If a dog goes to sleep immediately after eating, he has a hard time of it,— he growls and grits his teeth, and has bad dreams. It is not natural for animals to sleep immediately after eating, any more than it is for human beings.

7. Since there is a constant waste going on in the body during sleep, why should not the process of nourishment be going on at the same time?

Ans.— It is. The process of digestion occupies a longer time than is generally supposed. When we talk about an article of food as being digested in an hour, an hour and a half, or longer, we refer to the length of time the article remains in the stomach; we do not mean the whole time of digestion. The stomach, as was shown long ago, is simply the antechamber of the digestive apparatus; it is the office, so to speak, where the food is received, ground, disintegrated, and prepared for the digestive processes which take place farther on. Every particle of food may be digested in the small intestine, and the process of digestion which takes place in the stomach is, to a large extent, repeated. It is about fourteen hours from the time food enters the mouth to the moment it passes into the colon. This fourteen hours, then, is occupied in actual digestion, so that intestinal digestion goes on during the night. In the large intestine the food is retained several hours for absorption. Absorption is taking place from the colon all the time. It is not the

digestion of food that nourishes the body, but the absorption of it. The farther it is advanced toward digestion before we go to bed, the more nutrition we derive from it during the night by absorption. Thus it is not the taking of food just before going to bed that secures nourishment during the night, but it is the absorption of food which has previously been digested during the waking hours.

8. What are the properties or constituents of malt that make it such a valuable article when combined with other foods? Please give the names of some reliable firms that manufacture malt.

Ans.— Malt is digested starch; it is a natural sugar, and does not produce catarrh of the stomach. It does not irritate the mucous membrane, but passes on into the intestine, and is at once converted into levulose, and absorbed. Excellent malts are manufactured by the Maltine Company, New York, and by Trommer's Extract Company, New York, and by nearly all the manufacturing chemists.

9. What is the most healthful ingredient to use in raising light bread and biscuit?

Ans.— Air and water are the best ingredients. Water-breads are infinitely preferable to those that are made with yeast. Yeast is simply fungus. It belongs to the same family of fungi as toadstools and mushrooms. If the bread is so thoroughly cooked that all the yeast germs are killed, there is no great harm done; but usually the bread is not baked sufficiently, and unless the stomach is strong enough to disinfect itself, these live yeast germs continue to grow, so that when the bread is eaten, they make mischief.

10. Are not uncooked apples injurious in case of intestinal indigestion?

Ans.— Not necessarily. Green apples would be indigestible, but perfectly mellow and ripe uncooked apples are wholesome, and are digested in the stomach within an hour.

11. What food would you advise for a person who has tuberculosis of the lungs?

Ans.— Fattening foods; fruits, grains, and nuts are the best diet for such a person.

12. In your practise do you absolutely exclude the use of drugs, such as digitalin, etc., especially in cases of sudden collapse, when rational remedies may not act quickly enough?

Ans.— I have never known a case in which digitalin could act, in which some other remedy would not do better. Suppose a person has heart-failure; how could digitalin or any other poisonous substance, when taken into the stomach, strengthen the heart? The effect upon the heart of digitalin, alcohol, and every other drug, is to weaken it. Strychnin will make it contract with greater vigor, but gives it no more strength.

Now suppose we put this drug into the stomach: in order to produce any effect, it must first be dissolved, then absorbed, then circulated to the brain, and from the brain to the heart. This requires from five to fifteen minutes. If the drug be injected by a hypodermic syringe, it requires about half a minute for circulation before it can reach the brain. Suppose, on the other hand, that we make a hot-and-cold application to the spine,— how long does it take for this to produce an effect? — Just so long as it takes a nerve impulse to travel, which is at the rate of one hundred feet a second. From the back of the neck to the brain is one foot, and from the brain to the heart is another foot. Dividing one hundred by two, we find that it would require one fiftieth of a second for a nerve impulse to travel from the back of the neck to the heart. Therefore, a hot-and-cold application to the spine would increase the heart's activity in one fiftieth of a second. Hence, the

quick remedy in such cases is not the one that must be swallowed and absorbed, and then travel all over the body, but it is the one applied to that part of the skin which is in direct anatomical relation to the part affected.

If we make our application down the back of the neck between the shoulders, it will affect the heart; if we apply it to the vertebra prominens (the "root of the neck," as it is called) it will act upon the lungs; if there were a hemorrhage of the lungs, and we should apply heat and cold to the vertebra prominens, it would cause a contraction of the blood-vessels and stop the hemorrhage quicker than any drugs could ever do it; for the effect of this application is produced in the first fiftieth of a second after the application is made. This rule applies to the whole interior of the body, which is in direct relation to the skin. Hence, applications of heat and cold and other applications made to the skin produce the most profound effects upon the internal viscera. The skilful therapeutist can stimulate activity or he can quiet it by the proper application of heat and cold.

HOW COULD WE INDEED?

APPLYING myself again to the study of the moving panorama below us, I presently remarked to the doctor that we must be pretty nearly over what was formerly called Brighton, a suburb of the city at which the live stock for the food supply had mainly been delivered.

"I see the old cattle sheds are gone," I said. "Doubtless you have much better arrangements. By the way, now that everybody is well to do and can afford the best cuts of beef, I imagine the problem of supplying a big city with fresh meat must be much more difficult than in my day, when the poor were able to consume little flesh food and that of the poorest sort."

The doctor looked over the side of the car for some moments without answering.

"I take it," he said, "that you have not spoken to any one before on this point."

"Why, I think not. It has not before occurred to me."

"It is just as well," said the doctor. "You see, Julian, in the transformation in customs and habits of thought, and standards of fitness since your day, it could scarcely have happened but that in some cases, the changes should have been accompanied with a decided revulsion in sentiment against the former practises. I hardly know how to express myself, but I am rather glad that you first spoke of this subject to me."

A light dawned on me, and suddenly brought out the significance of numerous half-digested observations which I had previously made.

"Ah," I exclaimed, "you mean that you don't eat the flesh of animals any more!"

"Is it possible that you have not guessed that? Had you not noticed that you were offered no such food?"

"The fact is," I replied, "the cooking is so different in all respects from that of my day that I have given up all attempts to identify anything. But I have certainly missed no flavor to which I have become accustomed, though I have been delighted by a great many novel ones."

"Yes," said the doctor, "instead of the one or two rude processes, inherited from primitive men, by which you used to prepare food, and elicit its qualities,

we have a great number and variety. I doubt if there was any flavor you had which we do not reproduce, besides the great number of new ones discovered since your time."

"But when was the use of animals for food discontinued?"

"Soon after the great Revolution."

"What caused the change? Was it a conviction that health would be favored by avoiding flesh?"

"It does not seem to have been that motive which chiefly led to the change. Undoubtedly the abandonment of a custom of eating animals by which we inherited all their diseases, has had something to do with the great physical improvement of the race. But people did not apparently give up eating animals for health's sake any more than cannibals in more ancient times abandoned eating their fellow men on that account. It was of course a very long time ago, and there was perhaps no practise of the former order of which the people immediately after giving it up seemed to have become so much ashamed. This is doubtless why we find such meager information in the histories of the period as to the circumstances of the change. There appears, however, to be no doubt that the abandonment of the custom was chiefly an effect of the great wave of humane feeling, the passion of pity and compunction for all suffering — in a word, the impulse of tender-heartedness, which was really the great moral power behind the Revolution. . . . A sentiment against cruelty to animals of every kind had long been growing in civilized lands, and formed a distinct feature of the general softening of manners which led up to the Revolution. This sentiment now became an enthusiasm; the new conception of our relation to the animals appealed to the heart and captivated the imagination of mankind. Instead of sacrificing the weaker races to our use or pleasure, with no thought for their welfare, it began to be seen that we should rather, as elder brothers of the great family of nature, be, as far as possible, guardians and helpers to the weaker orders, whose fate is in our hands, and to which we are as gods. Do you now see how the prevalence of this new view might soon have led people to regard the eating of their fellow animals as a revolting practise almost akin to cannibalism?"

"That is of course very easily understood. Indeed, doctor, you must not suppose that my contemporaries were wholly without feeling on this subject. Long before the Revolution was dreamed of, there were a great many people of my acquaintance who owned to serious qualms of conscience over flesh eating, and perhaps the greater part of refined persons were not without pangs of conscience at various times over the practise. The trouble was there really seemed nothing else to do. It was just like our economic system, humane persons generally admitted that it was very bad and brutal, and yet very few could distinctly see what the world was going to replace it with. You people seem to have succeeded in perfecting a *cuisine* without using flesh, and I admit it as in every way more satisfactory than ours was, but you cannot imagine how absolutely impossible the idea of getting on without the use of animal food looked in my day, when as yet nothing definite had been suggested to take its place, which afforded any reasonable amount of gratification to the palate, even if it provided the means of aliment."

"I can imagine the difficulty to some extent. It was, as you say, like that which so long hindered the change of economic systems. People could not clearly realize what was to take its place. While one's mouth is full of one flavor,

it is difficult to imagine another. That lack of constructive imagination on the part of the mass is the obstacle that has stood in the way of removing every ancient evil, and made necessary a wave of revolutionary force to do the work. Such a wave of feeling as I have described was needful in this case to do away with the immemorial habit of flesh eating. As soon as the new attitude of men's minds took away their taste for flesh, and there was a demand that had to be satisfied for some other and adequate sort of food, it seems to have been promptly met."

"From what source?"

"Of course," replied the doctor, "chiefly from the vegetable world, though by no means wholly. There had never been any serious attempt before to ascertain what its provisions for food actually were, still less what might be made of them by scientific treatment; nor, so long as there was no objection to killing some animals and appropriating them, was there likely to be. The rich lived chiefly on flesh, and as for the working masses, which had always drawn their vigor mainly from vegetables, nobody of the influential classes cared to make their lot agreeable. Now, however, all, with one consent, set about inquiring what sort of a table nature might provide for men who had forsworn murder. Just as the crude and simple method of slavery, first chattel slavery and afterward wage slavery, had, so long as it prevailed, prevented men from seeking to replace its crude convenience by a scientific industrial system, so in like manner the coarse convenience of flesh for food had hitherto prevented men from making serious perquisition of nature's edible resources. The delay in this respect is further accounted for by the fact that the preparation of food, on account of the manner of its conduct as an industry, had been the least progressive of all the arts of life."

"What is that?" I said, "the least progressive of arts, why so?"

"Because it had always been carried on as an isolated household industry, and as such, chiefly left to servants, or women, who in former times were the most conservative and habit-bound class in the communities. The rules of the art of cookery had been handed down little changed from the centuries since the wife of the Aryan cowherd dressed her husband's food for him. Now it must remain very doubtful how immediately successful the revolt against animal food would have proved if the average family cook, whether wife or hireling, had been left each for herself in her private kitchen to grapple with the problem of providing a satisfactory substitute for flesh; but, thanks to the many-sided character of the great Revolution, the juncture of time at which the growth of humane feeling created a revolt against animal food, co-incided with the complete breakdown of domestic service, and the demand of woman for a wider life, facts which compelled the placing of the business of providing and preparing food on a co-operative basis, and the making of it a branch of the public service. So it was that as soon as men, losing appetite for their fellow creatures, began to ask earnestly what else could be eaten, there was already being organized a great governmental department, commanding all the scientific talent of the nation, and backed by the resources of the country, for the purpose of solving the question, and it is easy to believe that none of the new departments was stimulated in its effort by a keener public interest than that which had in charge the preparation of the new national bill of fare. These were the conditions for which alimentation had waited from the beginnings of the race, to become a science.

"In the first place, the food materials

and methods of preparing them actually extant, and used in the different nations, were, for the first time in history, collected and collated. In presence of the cosmopolitan variety and extent of the international *menu* thus presented, every national *cuisine* was convicted of having, until then, run in a rut. It was apparent that in nothing had the nations been more provincial, more stupidly prejudiced against learning from one another, than in the matter of food and cooking. It was discovered, as observing travelers had always been aware, that every nation and country, often every province, had half a dozen gastronomic secrets that had never crossed the border, or, at best, on very brief excursions.

"But the organization of a scientific system of alimentation did not cease with utilizing the materials and methods already existing. The botanist and the chemist next set about finding new food materials and new methods of preparing them. At once it was discovered that of the natural products capable of being used as food by man, but a petty proportion had ever been utilized; only those, and a small part even of that class, which readily lent themselves to the single primitive process whereby the race had hitherto attempted to prepare food; that is, to the application of dry or wet heat. To this, manifold other processes suggested by chemistry were now added, with effects that our ancestors found as delightful as novel.

"It is written that the children of Israel, when practising an enforced vegetarian diet in the wilderness, yearned after the flesh-pots of Egypt. The experience of our ancestors appears in this respect to have been quite different. It would seem that the sentiments with which, after a very short period had elapsed, they looked back upon the flesh-pots they had left behind, were charged with a feeling quite the reverse of regret. There is an amusing cartoon of the period, which suggests how brief a time it took for them to discover what a good thing they had done for themselves in resolving to spare the animals. The cartoon, as I remember it, is in two parts, the first shows Humanity typified by a feminine figure, regarding a group of animals consisting of the ox, the sheep, and the hog. Her face expresses the deepest compunction, while she tearfully exclaims, 'Poor things! How could we ever bring ourselves to eat you?' The second part reproduced the same group, with the heading, 'Five Years After.' But here the countenance of Humanity, as she regards the animals, expresses, not contrition or self-reproach, but disgust and loathing, while she exclaims in nearly identical terms, but very different emphasis, 'How could we, indeed?'" — *Edward Bellamy, in Equality.*

Disinfection Through the Keyhole.

A valuable and practical method of disinfecting ordinary furnished houses has been devised by Prof. F. G. Novy, of Ann Arbor, Mich. At a recent meeting of the State Board of Health of Michigan he presented a written report of a very thorough experimental investigation which will make room-disinfection much more easy and less destructive of valuable articles. His work included twenty-six room-disinfections, and the use of five thousand specimens of twenty different species of germs that were exposed and afterward cultivated. The disinfection was performed in a specially prepared room containing one thousand cubic feet of air space and as nearly air tight as practicable. He found that when one hundred and fifty cubic centimeters

(about five fluid ounces) of commercial forty-per-cent. formalin was distilled into a room containing one thousand cubic feet of air space, all moist disease germs were killed.

Heretofore, obstacles to the general use of formaldehyde have been the great cost of the apparatus for using the paraform or the formalin for regenerating formaldehyde, and the unreliability of the action of apparatus for generating it direct from the wood-alcohol. Professor Novy has devised and used a very simple and inexpensive apparatus for distilling commercial formalin into a room through the keyhole. Formalin can be purchased for about fifty cents a pint. Five fluid ounces will suffice for the disinfection of one thousand cubic feet of air space. The disinfection of a room can be effected without entering it, the apparatus being outside, where it can be watched and the danger of fire inside entirely obviated. This discovery marks an important step in advance in domestic sanitation, and will be of special interest to housekeepers because of the simplicity, cheapness, and effectiveness of the method.

Voice Culture and Vicious Habits.

A correspondent of GOOD HEALTH sends some valuable testimony as to the effects of certain foods and condiments upon the voice. The statements are credited to *Shaftesbury's Magazine of Oratory.* The original article describes the "alcohol voice" produced by drinking intoxicants, and the "smoker's voice," resulting from the use of tobacco, but our correspondent places special stress upon the following: —

If saliva enriches the tones by its smoothing and lubricating effect on the lining of the throat, it follows that vinegar would have the opposite influence, and this is really true. The roughest, gruffest voices imaginable are those of hard cider drinkers among men, and of pickle eaters among women. Of course the need of acids must be supplied, but the eating of apples and sweet oranges would suffice instead of vinegar, pickles, and lemons. Lemon-juice, being an unfermented fruit juice, may be used if sufficiently diluted with water.

Fried food is destructive of the throat surface, and this is due to the fact that in frying the food, hard grease flakes that are indigestible are found. These flakes have edges like knives, which cut wherever they go.

Pepper should be avoided as an accompaniment of food; likewise, all exciting sauces and drinks. Their influence on the mucous membrane of the throat is direct and quick.

Glucose may be considered as the harshest of all substances upon the lining of the throat. Not only is it dangerous in that it exposes the surface to disease by causing inflammation, but it affects even the vocal cords. It is hard to understand why so simple a thing as this extract of corn should be so virulent; but it is clearly proved to be a dangerous diet. The manufacturers of glucose argue that it is made from corn, and therefore should be wholesome. So is whisky made from corn. All pure foods may, by a simple change, become poisonous. Ice cream made from milk in a certain condition has caused many deaths. Glucose is too often brought into the house under some disguise. It is the chief element of the saccharine matter of beer, wine, and liquor. But we should scarcely expect to find it lurking in all candies, in all jellies sold at the stores, in all sirups, in strained honey, in sauces, in cheap sugar, and in other forms. To test its destroying powers, eat a small piece of cheap caramel. Soon after the throat will feel slightly rasped. The sirups for sale at the stores

will unfit a voice for good work, and by scraping the throat, subject it to assault from disease. Much of the disease among children, both in the throat and in the stomach, is due to this cause.

Bananas and the War.

The danger threatening the importation of bananas on account of the war with Spain has made public the private history of this nourishing fruit from the time it leaves its Central American home until it reaches the city fruit stalls or the country grocery store in the United States. Millions of American dollars are invested in the growing of bananas in Costa Rica, Nicaragua, Honduras, and other Central American republics. They are cut green, and transported to the ports or railroads by primitive methods. When carried by sea, they are loaded on the ships with their stems down, and given good ventilation by forced draft. The run to New Orleans or Mobile is made in from three to five days. All fruit that has ripened in transit is left here. The rest is loaded in cars, and with messengers to care for it en route, the trains go rushing west, for Chicago, San Francisco, and even Seattle. It is a hazardous traffic; delay would ruin whole train loads. Not more than ten years ago such long trips were never undertaken, but the trade has broadened wonderfully since that time. Fifteen years ago two firms would take one car; now there is one firm which handles twenty cars a week. Chicago takes twenty-five per cent. of all the bananas that are landed in New Orleans and Mobile, and the railroads from there alone make $25,000 a month out of the banana trade.

In the cellars of the dealers the fruit is ripened by the dry warmth of flaring gas jets, the utmost care being necessary to prevent softening or overripening. Six, eight, and even twelve carloads at a time hang in long, even rows in these cellars. The United States' imports of bananas aggregated 15,000,000 bunches for the year 1897. The total value of this import for 1897 was about $20,000,000, and if it were not for the expected damage by war, the increase of this year would have been twenty-five per cent. There were last year twenty-five bananas for every man, woman, and child in the country. Their productiveness, as compared with potatoes, is as 44 to 1, and as 23 to 1 compared with wheat.

A Cape Cod sea captain was the first to bring bananas to this country from the West Indies. Early in the '70's Captain L. D. Baker, now the head of the great Boston Fruit company, brought a small cargo into his port, and was ridiculed for doing it; but where twenty-five hundred bunches were first sold with difficulty, fifty thousand are now required. Immense fortunes have been made out of the business, one company now owning the docks and most of the islands of Jamaica devoted to banana culture.

The revenues from bananas are not alone from the sale of the fruit; the leaves are used for packing; the juice, being strong in tannin, makes an indelible ink and shoe-blacking; the wax found on the underside of the leaves is a valuable article of commerce; manila hemp is made from the stems, and of this hemp are made mats, plaited work, and lace handkerchiefs of the finest texture; and the banana itself is ground into banana flour.

Beef and Beer.

The Rev. Wm. P. Alcott, in the *Temperance Cause*, claims that the disuse of animal food is a great aid to the prevention, cure, or alleviation of alcoholic intemperance. He calls attention to the close relation existing between food and

drink, in that both are called for by the same organs, gratify the same nerves, and build up or act upon the same tissues. The suggestion is quoted from Liebig that we need carbon and nitrogen; having one, we hunger for the other. Flesh food lacks carbon, which may be had in fruits, cereals, vegetables, alcoholics; vegetarian food satiates us with carbon, thus arousing a desire for legumes (pulse) or such nuts, fruits, and cereals as abound in nitrogen, but not for the carbonaceous alcohol.

It is well known that stimulating food tempts to stimulating drink. Nourishment and stimulus are as different in their effects as bread and a whip. Pavy acknowledges "the stimulating properties that belong to the flesh of quadrupeds and birds." Vegetarian laborers find more real nourishment in their food than flesh eaters, and can hold out longer. Dr. J. C. Layard states that the patients of inebriate asylums are most of them large eaters of animal food. Beef, too, is preferred to mutton and other kinds, as being the most stimulating. This effect of meat on the nerves and the circulation is recognized by physicians. Pepper, mustard, and all strong condiments are more used with flesh than with other foods. Helen Campbell, the social reformer, says: "The story of intemperance everywhere is the story of overeating of animal food highly seasoned forms."

Mr. Alcott speaks further of the affinity between retrograding substances, stating that flesh, even while living, contains much material already dead, and that this is greatly increased by slaughter. Sound fruits and grain contain no decay, but in their extracted juices it begins at once as fermentation. "Decay in food and drink are chums, inclined to get together and bring their friends with them." He quotes from Sir John Sinclair: "Where animal food is used in great proportion, fermented liquors become, in a great measure, necessary to obviate, in some degree, the septic tendency of such a way of living."

Interesting statistics are cited, showing that the annual individual consumption of meat in the United States is 175 pounds, in England 115, in France 87, and in Germany much less, while the claim is urged that in Great Britain and the United States the percentage of intemperance is greater than in all the rest of the world. We are told that Baltzer, the father of German vegetarianism, could make no headway against narcotics until he made a clean sweep of alcohol, tobacco, meat, and all stimulants. Then the change was "*kinderleicht*"—child's play.

Having dared to be "peculiar" in diet, the writer thinks it is easier to resist temptation in other lines. In his opinion, there is far greater safety against every form of vice and disease for children reared on a non-flesh diet.

Danger of Enlarged Tonsils.

An enlarged tonsil is merely an excrescence, like a wart, and should be removed; it is the hold of every unclean and hateful germ, a place where seeds of consumption and diphtheria hide away and grow. It is also a place where germs of influenza secrete themselves, and occasionally, when a person takes a little cold and his resisting power is lessened, these germs in hiding break out and produce an attack of tonsillitis, diphtheria, or pneumonia.

A NEUTRAL full bath, at a temperature of rom 92° to 95°, is an excellent remedy for sleeplessness; remain in the bath thirty minutes at least, an hour or longer if necessary.

EDITORIAL.

THE GREATER GOSPEL.

BEING neither a preacher nor the son of a preacher, the editor does not speak *ex cathedra*, but only with such authority as may lie in the truth of what he says. Moses, in his instructions to the Israelites, continually reiterated, "Thus saith the Lord," and this same "Thus saith the Lord" resides in every truth, no matter how humble or unrecognized the instrument that gives it utterance.

It is no part of my present purpose to condemn or criticize those who are the recognized teachers of what is commonly termed the gospel, but rather to plead for a larger, a more complete and comprehensive statement of the gospel. "The power of God unto salvation" is the Scripture definition of the gospel. Salvation means to save. As applied to man, we cannot think God's purpose or power to be less comprehensive than man's needs. The gospel, then, must be "the power of God unto salvation" from all that from which man needs to be saved. To ancient Israel God said, "I am the Lord that healeth thee," and as a result of that healing, the mighty host of freedmen entered the promised land without a feeble one in their ranks. What a glorious deliverance that was: first rescued from the taskmasters in Egypt who embittered their lives by cruel exactions, and then healed of all the physical maladies which were the natural result of the unwholesome habits and depressing environment to the influence of which they had for several centuries been subjected in the land of Egypt. But even after that it required forty years of training in correct habits of life to obliterate all traces of the physical infirmities which they had acquired in a country which had waxed rich and luxurious, and which had already begun to see written on the walls of its palaces, "Weighed in the balance, and found wanting."

Egypt is the recognized type of moral darkness and depravity, of disease and degeneracy. It is interesting to notice that the gospel of deliverance which Moses taught offered redemption from physical as well as moral degeneracy. In instructing his people in the wilderness, God did not stop with the so-called decalogue, or moral law, but supplemented it by a code of sanitary regulations which have been the recognized model during all the ages since. The sanitary code of Moses included minute instructions about diet, cleanliness, clothing, domestic sanitation, disinfection, and quarantine; and the out-of-door life and constant moving from place to place, the pure diet of manna, and the crystal pure water from the rock afforded the conditions most essential for physical regeneration and a return to natural and original simplicity, while the daily instruction in moral principles given by Moses and his associates, was the means of educating a semi-barbarous horde up to the level of a godly people.

Christ, like Moses, came to this earth with a mission of deliverance, and not in a smaller sense, but with a scope large enough to comprehend the whole world, with all its needs, all its infirmities, mental and physical as well as moral, all its woes, its misery, its pain, its diseases and deformities,—to open all the prison doors and to set its captives free. Christ's mission is certainly not inferior to that of Moses; but as usually preached, the gospel of Christ is a one-sided, one-legged gospel,—no wonder that it limps. The most optimistic must be unable to hide from his eyes the fact that with all the preaching of all the churches, and with all the activity of church agencies, the world is not advancing in either health or holiness. If any of us entertain an opinion different from this, it is only because we have failed to examine closely into the facts. History and modern statistics show most conclusively that the race is diminishing in stature, in longevity, in physical vigor.

Before the flood, men lived to the age of

nearly a thousand years. The patriarchs lived an average of 167 years. Pliny counted 134 centenarians in a small province in Italy in the time of Vespasian, eleven of whom were more than 130 years of age, and nearly sixty more than 110. In the sixteenth and seventeenth centuries persons died at the advanced ages of 185, 172, 169, 152, 146, 144, 140, and many at ages between 140 and 120 years. Such ages are unknown at the present time. The present average of human life is but forty-two years, and this low rate is maintained only by strict quarantine regulations, and by increasing the protection of the weak and susceptible,— a course whereby the race is not made better, but really weaker, through the operation of the inexorable laws of heredity.

In olden times there were whole races of giants; now men of gigantic stature are so rare that they are carried about as curiosities. The most civilized nations are rapidly lessening in stature. Tall men, like big trees and mammoth beasts, belong to the olden time. In France the physical decadence has been so rapid in the last few decades that the government has repeatedly found it necessary to lessen the standard of height for military enlistment. The standard has been lowered nearly an inch within the last ten years. Yet the French people were once the giant Gauls who occasionally ran down into Italy and frightened the Romans by their gigantic forms.

According to Dr. Wines, the proportion of insane to the million inhabitants increased in this country between 1850 and 1890, barely forty years, from 673 to 1,700, or 253 per cent.; while the number of imbeciles and idiots increased in the same time from 681 to 1,527, or 224 per cent. At the same rate of increase, the lunatics will by the end of the century number nearly 2,000 per million, an increase of 300 per cent. in half a century; and the feeble-minded will have increased to more than 1,700 per million, an increase of 255 per cent.

The figures are truly appalling, but they only represent the rate at which degeneracy and deficiency are increasing in the race. In older countries, in which the same causes are in operation, the process is further advanced, as in Great Britain, for example, where the number of insane per million is already more than 3,000, and is increasing even more rapidly than in this country. It requires but a very simple mathematical calculation to show that at this rate of mental deterioration, only a few centuries can elapse before sanity will be the exception, and insanity or idiocy the rule in civilized countries.

Chronic diseases, congenital blindness, deaf-mutism, consumption, Bright's disease, and chronic maladies of all sorts, are multiplying at a most alarming rate.

Notwithstanding all the efforts of temperance and Christian organizations, drunkenness, licentiousness, and crimes against person and property, are increasing from year to year. In 1896 there were 10,000 murders in the United States, or one to every 7,000 inhabitants. In the heathen land India, the proportion was much less. Disease and crime are natural companions.

We are a degenerating and a dying race. The gospel as it is preached is not saving us. The millennium is not just dawning, as we would fain believe, but instead we see before us nothing but a rapid decline to lunacy, idiocy, deformity, and final extinction, unless some efficient force is set in operation to stay the downward march.

The moral decline of the race has always been associated with disease or disease-producing causes. Epileptics are very likely to be thieves, and the proportion of epileptics among criminals is known to be many times larger than the average. The crowded tenements of the slum district breed crime as well as disease. There is no natural association between disease and piety, but the reverse. The man who thought he had experienced conversion when he had only had a bilious attack was no farther off the track than the man who thinks he is pious because a chronic indigestion gives him a long face and a habitual melancholy. To mistake sickliness for saintliness is the same sort of error committed by that reputed saint of the Middle Ages who was accounted worthy to be canonized because he had never combed or cut his hair, never bathed, and had three

hundred patches on his pantaloons, which precious garment was long exhibited in public as an evidence of his superlative goodness.

The pagan doctrine that the soul is to be purified by the neglect or abuse of the body is responsible for an enormous amount of physical disease and resulting moral turpitude and religious imbecility. This doctrine has perhaps disappeared in its grosser forms from the majority of civilized countries, but the dangerous principle still survives in most religious communities, both Catholic and Protestant. We even sing it in our hymns, as illustrated in that well-known stanza beginning, "O, worthless worms are we." The body is looked upon as a clod. A Kansas tombstone bears the singular epitaph: —

"Under this sod,
And under these trees,
Lieth the bod-
Y of Solomon Pease.
He 's not in this hole,
But only his pod,
He shelled out his soul
And went up to God."

The body is not a pod, a clod, a thing to be cast off as soon as possible, to be thrown away as vile and detestable. The apostle says, "Know ye not that your body is the temple of the Holy Ghost?" The shekinah light may be dimmed, but it is only because it is covered by the veil of flesh. The windows of the temple are darkened, but the divine altar fire still burns, even in the sinner, for God says, "Thou hast made me to serve with thy sins; thou hast wearied me with thine iniquities." So, divinity dwells in all humanity, and in its infinite humility becomes man's servant, that man, by the exercise of free will, may become godlike, as was the first man who stood in the image of his Maker and was pronounced "very good."

Disobedience has distorted, dwarfed, and spoiled the image, and it is the mission of the gospel to restore it. That Christ recognized his mission as one of healing to the body as well as to the soul is evidenced by the fact that he was, during the few short years of his ministry, constantly employed in healing the sick, the blind, the lame, as well as the broken-hearted. Two thirds of his miracles were miracles of healing. A few short words often record the labor of weeks; it is written of him when leaving Capernaum that he had healed the multitudes. In sending forth his disciples, Christ commissioned them to preach the gospel and to heal the sick. Man needs physical healing as much as moral regeneration, and complete success is not possible in either one without the other.

The human will is constantly hampered by the stubborn refusal of disease-stupefied faculties to obey its commands. God does not compel us; he only leads us by the subtle influences of an indwelling life which underlies all created things. Hence, the divine will, as well as the human will, is hindered in carrying out all its purposes in us by a state of the body which blunts our moral perceptions and dims our spiritual insight. The influences which drag us down, moreover, are aided by the very conditions which hinder our progress upward. Any conditions which benumb the conscience and lessen the acuteness of the moral sensibilities, excite the animal propensities, and weaken the spiritual forces which resist them. The prophet Ezekiel tells us that the iniquity of Sodom was "pride, fulness of bread, and abundance of idleness." Physiology clearly shows us how fulness of bread, combined with abundance of idleness, opens wide the door to all the sins of Sodom and their awful consequences. Surfeiting and idleness fill the body with poisons which excite the propensities, while they benumb the moral faculties, weaken the will, and stifle the voice of conscience. The crying need of the world to-day is the preaching of a great gospel,—a gospel broad enough to reach and rescue the whole man. That gospel which seeks to save the soul while ignoring or mistreating the temple of the soul, is incapable of bringing a lost race back to the fold of happy obedience, is impotent to restore in man the divine image which sin has well-nigh effaced.

The greater gospel, which defines sin as the transgression of any law which relates to man's well-being, gives sin a broader meaning than the simple transgression of the so-called moral law. The man who looks at

disease in the light of the complete gospel can not regard any human ill as an infliction of Providence, but sees in all human suffering and misery only the operation of that far-reaching principle enunciated by the apostle, "Whatsoever a man soweth, that shall he also reap."

Most of the trials and afflictions which we charge upon Providence are the result of our own wrong doing. The man who is sick, suffers for his own sins, and probably for his father's also. For the glutton, the tobacco-user, the toper, the tea and coffee slave, the sedentary man, the fashion-fettered woman, to charge upon God the consequences which grow out of the transgression of natural law, is base calumny. God is a God of love, mercy, compassion, and healing. He does nothing arbitrarily. He never makes sick; he never destroys; he never inflicts punishment. Sickness, suffering,— so-called penalties,— are simply the consequences of the violation of law; they are results, not punishments. They are wounds that are inflicted by the thorns hidden beneath the thick foliage of the tree which bears forbidden fruit.

If the church is to rescue the world, it must give the gospel trumpet another and a different tone. It must teach physical righteousness, as well as moral rectitude. It must teach a gospel of diet, of baths, of exercise, of cleanliness, of domestic sanitation. It must recognize Christ in man as well as Christ on the cross. In the light of a broad gospel such as Christ and Moses taught, the body will be looked upon, not as a worthless, temporary tenement, to be as soon as possible dismissed, but it will be regarded as the temple of the living God. It will be recognized that to abuse this body is to insult God; that to squander one's vital forces is as much sin as to break open a safe or execute a forgery. Our race deterioration can not cease until we again write over our sanctuaries of learning and of worship, the motto that the ancient Greeks carved above the portals of their temples, "A sound mind in a sound body." We must recognize as a solemn reality that religion includes the body, and that the laws which govern the healthful performance of the bodily functions are as much the laws of God as those of the decalogue.

THE DISINHERITED.

A CERTAIN philosopher has said, "It is the greatest of all human felicities to be well born." Unfortunately, not all human beings enjoy this felicity. Indeed, it is yearly becoming more and more apparent that an increasing proportion of human beings are badly born. In every large city are to be found thousands who belong to what are known as the vicious, the criminal, or the indigent or pauper classes. For the most part, these persons are born into the condition in which they are destined to spend their lives, and are little more responsible for the unhappy situation in which they find themselves than are the deaf and dumb, the blind, or those who are in other respects congenitally deformed. The only difference between the infirmities from which these persons suffer and those with which the cripple, the blind, or the deaf are afflicted, is that their physical deficiencies are less conspicuous. They are, nevertheless, as real. Their deformities consist in bad or abnormal construction of the brain, although a minute examination will reveal, in the majority of persons belonging to these inferior classes, external deformities of a very pronounced character.

Another class of deformities which may be recognized, perhaps more commonly among the so-called "upper" classes, includes such congenital defects as flat or narrow chest, weakness of the heart, feeble digestive powers, a neurotic temperament, and various idiosyncrasies of mind and body.

Heredity is a force which operates in the most thoroughgoing manner. Every human being is the product of a principle which has been taking careful note of the lives and hab-

its, the neglects, the excesses, and the abuses of every crime against the body, through all the generations from Adam down to the individual man in question. The living man or woman is simply the material representation, the focus or vortex, so to speak, of the myriad of influences which have been operating from the earliest ages of man's history down to the moment of inspection.

Man's physical, mental, and moral character is as much a matter of heredity as is the capital of wealth with which he starts out in life. The man who lives the life of the spendthrift and dies bankrupt, leaves his children penniless. Sometimes it takes a series of generations to consume completely the accumulated earnings of preceding generations. So it is with bodily and mental health. The complete mental and physical bankruptcy which lands a man in the insane asylum or an almshouse infirmary, may be simply the result of two or three generations of sins against body and soul on the part of profligate ancestors. "The fathers have eaten sour grapes, and the children's teeth are set on edge."

The world looks with disdain upon the money spendthrift. The man who recklessly squanders the family inheritance and leaves his children penniless, is regarded by the world as little short of a criminal, a thief, a robber. What does society say about the man who, by a process exactly identical, disinherits his children of that most valuable of all possessions — soundness of body and mind? Society ignores the sins of this class of criminals, never asking a man to consider the consequences of his course of life upon his possible progeny, but allowing him to squander, without questioning his right, the constitutions of unborn children, in open violation of the law by which nature protects the well-being of the human race.

Through this almost universal ignoring of the duty devolving upon every human being to preserve intact, as far as possible, the natural powers transmitted to him from his ancestors, and by training and painstaking development to make the most of them, we find the human race deteriorating in physical stamina and a rapidly growing multitude of "disinherited" individuals who are born into physical, mental, and moral bankruptcy. It is high time that society gave more serious attention to this great class of bankrupts by heredity, from which springs the greater share of crimes and criminals, cranks, lunatics, fanatics, and imbeciles.

THE DANGER IN NERVE TONICS.

THE writer has on many occasions called attention to the enormous and growing mischief resulting from the almost universal employment of so-called nerve tonics both by the medical profession and by the laity. The sensation of increased vigor which almost immediately follows the taking of a dose of some nerve-tickling drug, such as strychnia, morphia, cocaine, coca, cola, and similar preparations, is an ignis fatuus which has led thousands of men and women into the quagmire of chronic and inveterate neurasthenia. It is strange indeed that so many members of the medical profession seem willing to blind their eyes to the fact that a mere sensation of increased strength is not evidence of an actual increase of energy; that a sensation of comfort is not evidence of a removal of the causes of discomfort; that relief from nervousness or chronic exhaustion is not evidence of a change in the physical conditions, of which the nervousness or exhaustion is simply the symptom. A man may feel stronger while he is really weaker. A person may be perfectly comfortable while entering the very jaws of death.

We are glad to note numerous editorial mentions of this subject, sounding notes of warning against the practise which is almost universal in the medical profession, and which is growing among the laity through the influence of advertising promises. An article appeared in the *Journal of the American Medical Association* for Jan. 29, 1898, which

ought to be republished in every medical journal in the land. We quote the entire article, commending it most heartily to earnest consideration :—

"Many men and women in and out of the medical profession are resorting more and more to the employment of drugs which have what has been falsely called a tonic influence over the nervous system, since they find that the employment of such substances relieves them of symptoms arising from nervous exhaustion, and enables them to go on with their work, for a time, in a manner which would otherwise be impossible. At one period the employment of nervous stimulants other than tea, coffee, and alcohol was confined almost entirely to those of the medical profession who ignored the fact that drugs used for stimulant purposes produced ruin in the end.

"Unfortunately for the laity of to-day, a large number of semimedical purveyors, finding the demand for their products not sufficiently great, have resorted to means by which they call attention to the fact that remedies can be obtained which will be capable, in the language of a recent writer, of producing 'a condition of veritable beatitude, both mental and physical, so that the mind expresses itself in incoherent flights of the imagination.' As a result of this, a large number of individuals who have no reason to doubt the plausible advertisements which they read, resort to preparations of morphine, cola, and coca, which they take to excess, and unconsciously drift into a state which is practically equivalent to the morphine and cocaine habit. Even if these drugs are not employed as the stimulant ingredients of such mixtures, unprincipled venders so fortify innocent and mild nervous stimulants with large quantities of alcohol that the patient unwittingly becomes a slave to this intoxicant, though under the impression that he is ingesting a practically harmless drug.

"Some interesting statistics, recently published in *Health*, show that such habits are most prevalent in Germany, France, and the United States, although they have victims in Russia, Sweden, Turkey, and the far East. The medical profession supplies forty per cent. of the male morphinists, which is the largest proportion; after which follow men of leisure, fifteen per cent.; merchants, thirty per cent.; while peasants, clergymen, and politicians occupy the lowest positions, numerically, on the list. Among the females addicted to the habit, the largest number, thirteen per cent., are women of means, and these are followed in number by the wives of medical men, who make up ten per cent. of the list.

"Very recently our attention has been forcibly called to these facts by an instance which not only emphasizes these dangers, but illustrates how careful a physician should be, when prescribing stimulant remedies, not to give the name of the preparation to the patient, or if he does so, on the prescription blank to direct the druggist not to renew the prescription without his orders. A woman who by many years of correct living enjoyed the full confidence of her friends, was during a short convalescence directed by her physician to take a preparation of coca wine which had been very largely advertised, not only to the medical profession, but to the laity, under a name which in no way indicates that it contains so powerful a drug as coca. Not feeling fully recovered when the first bottle of it had been consumed, the patient obtained another, and soon finding herself dependent upon it, continued to purchase bottle after bottle until, at the end of a year, she had become a typical coca habitué. Not until she had been using the preparation for nearly nine months was her continuous use of it discovered, and, when it was too late, she learned from her friends that the pleasant-tasting wine which possessed these extraordinary powers depended for its chief physiological effects upon a drug which did not appear in its name.

"So, too, at a recent meeting of the British Balneological Society, Snow drew particular attention to a form of intemperance arising from the too free administration of coca wines to invalids, whereby they obtained a strong alcoholic beverage, laden more or less with the still more powerful stimulant coca; and it was pointed out that many women who are not above the deliberate use

of such stimulants, have not the bravery to ask for alcohol or cocaine in the drug-store, and yet do not hesitate to purchase a coca wine, or preparation of cola, under some name which does not convey, at least to their minds, the possibility of developing a habit.

"There is no drug yet discovered, unless it be alcohol, which adds materially to the force of the body, and physicians can do no more goodly service to their patients than by impressing upon them this fact.

"At the present time, journals devoted to the subject of athletics, contain, in their advertising pages, statements in regard to the action of cola and coca which are absolutely unjustifiable, and pictures are published in these advertisements which give the impression that by the use of these drugs puny men and boys may become possessed of Herculean strength. All these remedies simply call into activity the reserve forces of the human economy, and place the reserve fund of the prodigal youth at his disposal, to be spent after his ordinary strength is exhausted. In a greater or less time such an individual will find that his reserve fund has disappeared, and that he is a bankrupt in physical energy. It is enough that the physician must by every means in his power combat the excessive use of alcohol and morphine. It is little less than a crime that greedy manufacturers should purvey to ignorant persons remedies which are capable, not only of doing harm by exhausting the individual's strength, but which also tend to develop in him habits which sap his mental and moral development, and render him a slave to the use of stimulants. This being the case, let us discourage to the best of our ability, in every possible way, those manufacturers and venders who advertise such products to the public.

THE SMOKING NUISANCE.

To a person who lives habitually in a clean atmosphere, nothing is more surprising than the apathy with which the majority of men and women submit to the wholesale poisoning of the air which they breathe in theaters, lecture halls, even churches, as well as on the streets, in sleeping-cars, street-cars, in hotels, in fact, wherever men congregate in the cities and towns of civilized countries. If some lunatic should take it into his head to carry around a stinkpot, promenading up and down all the streets of the town, passing through street-cars, churches, hotels, and now and then, on some pretense, getting access to private residences, it would not be long before the public protest against such insane behavior would become sufficiently vigorous to induce public officials to arrest such a purveyor of filth as a public nuisance.

If a man wants to make a smoke-stack of himself and to defile his body with nasty-smelling and deadly poisons, he has, in a certain sense, a right to do so; but he has no right to compel everybody in his neighborhood to participate with him in his stupid abuse of a God-given body. The smoker never seems to realize that his vice is one which "smells to heaven," and that only a person who himself has the breath of a turkey-buzzard can breathe the second-hand smoke which he exhales without qualms of stomach too vigorous for comfort. The smoking habit is inherently selfish, and cultivates selfishness in the man who indulges it.

But smoking, and tobacco-using in all forms, is something more than a nuisance. It is a physical, as well as a moral and mental, vice, and produces the direst consequences upon the bodies of those who habitually use it.

Another surprising thing in relation to the use of tobacco is the fact that so large a number of physicians who are perfectly acquainted with the poisonous properties and with the destructive influence of the habit, still indulge it to their detriment and to the detriment of their patients. Tobacco is unquestionably one of the most prolific of the active causes of the race deterioration which we see taking place about us. On this account it is refreshing to find now and then a physician sending a note of warning into the

ears of the multitudes of young men who are ignorantly becoming slaves to the twin vices — alcohol and tobacco.

Dr. Francis Dowling, in a paper read before the Mississippi Valley Medical Association, gave the results of careful investigations made by him respecting the influence of tobacco upon the eyesight. It has long been known that tobacco, when used in considerable quantities, lessens the acuteness of vision and produces color-blindness. Dr. Dowling proposed to determine whether the ordinary or so-called moderate use of tobacco does not, to some degree, impair the eyesight. He personally tested the vision of one hundred and fifty men employed in a large tobacco-factory. He found that vision was very greatly diminished in nearly one third the entire number. In thirty cases there was very serious impairment of vision, and the men were almost absolutely color-blind. In seventy-five, or one half the total number, there was a persistent contraction of the pupil and accompanying defects in vision. Other statistics equally convincing might be quoted.

This effect of tobacco-using upon the eyesight is very insidious, and progresses so slowly that it is not appreciated until after great, and perhaps irreparable, damage has been done. It is for this reason that men go on for so many years blindly indulging in this poison habit, without awakening to the fact that they are slowly but surely undermining their constitution. What tobacco does for the nerves of sight it does to every other nerve in the body; it has not the power to select out a single nerve and injure it to the exclusion of all others, but spreads its mischief throughout the whole vital domain. Not only the nerves, but the muscles, glands, and indeed every cell and fiber of the body, are brought under the baneful influence of this disease-producing drug.

Some years ago an eminent Scotch physician showed by examination of urine that fully ten per cent. of ordinary tobacco-users have albumin in the urine, which furnishes a strong suggestion that the use of this drug may be one of the causes of the rapid increase in the occurrence of Bright's disease in countries in which tobacco is largely used.

ANSWERS TO CORRESPONDENTS.

Salt — Going to Bed Hungry — Drinking before Breakfast — Pie Shortened with Lard — Cake — Shower-Bath. — A young man in Ohio inquires: "1. Is it harmful to use two or three teaspoonfuls of salt with the food at meal-time, if a person has an appetite for it? 2. Is the stomach injured by going to bed hungry if a person is exhausted by physical labor, and if he eats dinner at noon and retires at 7:30? 3. If he has no appetite, should he eat? 4. Would it do him any harm to eat a hearty breakfast the first thing in the morning, at 5:30 for example? 5. Should he drink hot or cold water before breakfast? and how much? 6. Why is pie shortened with lard harder to digest than when shortened with nut butter? 7. Is cake made of eggs, sugar, butter, soda, and flour hard to digest? if so, why? 8. Should a young man working on a farm or at other physical labor, take a cool shower-bath in the morning?"

Ans. — 1. Yes, exceedingly harmful. Such an appetite is an abnormal one.

2. No. Going to bed with an empty stomach is one of the best means of procuring sound sleep. A glass of cold water taken at bedtime will generally relieve the sensation of exhaustion and "goneness" which is usually experienced after adopting the plan of eating but twice a day. In a short time this unpleasant sensation will disappear as the result of the improved condition of the stomach.

3. As a rule it is best not to eat when one has no appetite; at least the food taken should be of a very light character, such as fresh fruit of some kind. It is especially important under such conditions to avoid the use of flesh meats and other nitrogenous foods.

4. The stomach is better prepared for food after half an hour's exercise in the morning than on first awakening.

5. Persons suffering from hypopepsia may drink with advantage a few sips of cold wa-

ter half an hour before eating. Persons who have hyperpepsia should drink hot water half an hour or an hour before a meal.

6. For the reason that nut butter is an emulsified fat, and mixes thoroughly with the farinaceous elements of the flour without rendering them indigestible; whereas lard saturates the starch with fat and prevents its digestion by the saliva, and also interferes with the action of the gastric juice, thus hindering stomach digestion.

7. Yes: (1) because baked eggs are with difficulty dissolved by the gastric juice; (2) because cane-sugar, when taken into the stomach in liberal quantities, causes catarrh of the stomach; (3) because butter renders both the eggs and the flour indigestible in the stomach; (4) because soda is unfit to introduce into the stomach under any circumstances, unless taken as an antidote for a poison of some sort.

8. Yes, a cool shower-bath or its equivalent is an excellent practise for all classes of persons. Persons engaged in active physical labor do not need the cool morning bath so much, however, as persons whose habits are sedentary, as the bath is to some degree a substitute for exercise.

Bunions.— Mrs. M. E. H., Indiana, asks what will cure bunions.

Ans.— The pressure which caused the disease must be removed by means of properly constructed shoes. In some cases an operation is necessary.

Acidity of the Stomach.— A reader in Minnesota asks: "Is diluted sulphuric acid taken after meals a preventive of acidity of the stomach? Will its use be followed by any serious results? if so, what?"

Ans.— In special cases temporary relief might be obtained in the manner suggested; but harm is likely to result from the continued use of such a remedy.

Constipation—Nervousness.— E. S. S., Massachusetts, was cured of obstinate constipation by eating granose, but is now troubled with nervousness. He is bashful and blushes at the least excitement, has hitching of the neck, and seems unable to look any one squarely in the face for any length of time. He would like to know the cause and the remedy.

Ans.— The cause is probably neurasthenia. The patient's case should be thoroughly investigated by a competent physician, and he should be subjected to a thorough course of treatment.

Vaccination — Restrictions on Butchers — Cereals and Fruits with Milk and Butter—Cancer in Vegetarians—Small-pox — Vegetarianism — Flesh-Pots of Egypt—Strict Vegetarianism.—J. K. W., Indiana, asks: "1. Is vaccination a medical fraud? 2. Is a butcher allowed to sit on a jury in England? 3. If one can enjoy good health on cereals, fruits, etc., why does your Sanitarium use milk and butter? 4. Do you know a strict vegetarian of ten years' standing or longer who had a cancer? 5. Would not small-pox be mild in a strict vegetarian of ten years' standing or longer? 6. What is the meaning of 'the flesh-pots of Egypt'? 7. Can a strict vegetarian get along without butter, or any kind of grease or oil, except what is in the cereals, etc.?"

Ans.— 1. No; vaccination is by no means a medical fraud. It possesses a remarkable power in establishing immunity against small-pox. This fact is so thoroughly established that it is very remarkable that any intelligent person can be found who will question it at the present time.

2. Yes, but in cases in which a human life is at stake, persons whose occupation is that of butchering are generally objected to by counsel on the one side or the other, and custom allows the objection to be sustained.

3. A large proportion of the Sanitarium family — several hundred — use no milk nor butter, nor any other animal product, and find an advantage in so doing. But it is no part of our policy to undertake to compel others to adopt our ideas, no matter how thoroughly we may be convinced of their value.

4. No; the writer has never heard of such a case.

5. It might be, but it must be borne in mind that the dietary is only one of the conditions which determine the state of the body as regards its ability to resist disease. Exercise, pure air, and mental and moral purity are nearly if not quite as important as

the dietary. A person might be a strict vegetarian and yet be guilty of the grossest violations of all the principles of health in diet as well as in other ways. Overeating might produce even worse results than the ordinary use of meat.

6. The Egyptians at the time the children of Israel were held captive by them, made large use of flesh and animal food.

7. The vegetable kingdom affords an abundant supply of oleaginous substances. Nuts of various sorts are very rich in fats. Some nuts, as the almond, the pecan, the filbert, contain one half or even more than half their weight of a very digestible fat.

"Blue Baby" — Cancer of the Nose — Catarrh of the Stomach — Cold Feet.— Mrs. E. N. M., Ohio, asks: "1. What is the cause of a 'blue baby'? 2. Can a cancer in the nose be cured? and what mode of treatment would be advisable? 3. How can catarrh of the stomach be cured? 4. When the feet are always cold, what treatment would you recommend?"

Ans.— 1. The incomplete closure of an opening between the right and left auricles of the heart, so that the arterial and the venous blood become mixed.

2. Cancer is not always curable, but can in a large proportion of cases be cured if the case receives timely attention. The incurability of cancer in many cases depends upon the fact that the vital resistance of the patient has been lowered to such a degree that when one cancer is cured, another is soon produced. The occurrence of cancer is an indication that the vitality of the system has been reduced to so low a level that the tissues are no longer able to resist the causes of cancer, whatever they may be. More can be accomplished by improving the patient's condition and fortifying the system by increasing the vital resistance than by any other means short of a thorough removal of the diseased tissues. Whether an operation would be proper in a case of cancer of the nose would depend upon its location.

3. By a system of cleansing of the stomach by means of lavage and a proper diet, and by the employment of a rational system of hydrotherapy, electricity, massage, and other suitable measures.

4. There is probably a disordered state of the sympathetic nerve centers; the cause must be found and removed. Sometimes the difficulty is a dilated or prolapsed stomach, sometimes a general prolapse of the organs of the abdomen. The abdominal supporter, applications of electricity, massage, and hydrotherapy are effective means of cure.

Woody Covering of Wheat.— G. W. F., Wyoming, asks: "1. What is meant by the woody covering of wheat? 2. Is it not an integral or necessary part of the wheat berry when the latter is used as a food? 3. Could an animal live on food which contained no woody or indigestible material?"

Ans. — 1. The wheat berry is covered by a thin envelope of cellulose, or wood.

2. There is advantage in the use of the whole-wheat berry, including the cellulose.

3. It is possible to live without wood or indigestible material, at least for some time; but one can live better if the food contains a proper proportion of indigestible elements, which are needed to give it the necessary bulk.

The Cost of Healthful Food—The Potato—Simple Bills of Fare.— F. G. S., Pennsylvania, desires to know: "1. Does the common white potato cause the formation of gas in the stomach? 2. What is the cost of a fruit, grain, and nut diet at present prices of these foods, for a family of five persons. 3. Please suggest a simple bill of fare for breakfast, dinner, and supper for one whose working hours are from 7 A. M. to 12 M. and from 1 P. M. to 6 P. M."

Ans.—1. The potato, as well as other vegetables, is to some degree incompatible with fruits. When fruits and vegetables are taken together by persons who suffer from slow digestion, alcoholic and acid fermentations are likely to occur, giving rise to sour stomach, gases in the stomach, and other unpleasant symptoms.

2. The writer is acquainted with a large family of persons who live on strictly healthful foods, consisting entirely of fruits,

grains, and nuts, in which the average cost is seventy cents per week for the raw material for each individual. It is, of course, necessary to purchase these foods in quantities, to get the benefit of wholesale prices.

3. The following bills of fare have been tested and proved to be adequate, and the cost has been carefully calculated: —

BREAKFAST NO. 1.

(For four persons.)

	Amount.	*Cost.*
Browned Corn-Meal Mush	1 lb. corn-meal	3 cts.
Split Peas Puree	½ lb. split peas	1 "
Graham Bread	⅔ loaf	3 "
Dried Apple Sauce	½ lb. dried apples	2½ "
Sugar		½ "
Total		10 cts.
Average for each of four persons		2½ "

DINNER NO. 1.

(For six persons.)

	Amount.	*Cost.*
Split Pea Soup with Croutons	½ lb. split peas	1 cts.
Mashed Potato	4 lbs. potatoes	2 "
Baked Parsnips	2 lbs. parsnips	1 "
Popped Corn	10½ oz. corn	1 "
Graham Bread	1 loaf	4 "
Flavoring and Fat		4 "
Total		13 cts.
Average for each of six persons		2⅙ "

BREAKFAST NO. 2.

(For four persons.)

	Amount.	*Cost.*
Fresh Apples		4 cts.
Graham Crisps requiring	1½ lbs. flour	3 "
Oatmeal with Nut Meal, or Browned Wheat	½ lb. oatmeal or wheat	2½ "
Hazelnuts		3 "
Total		12½ cts.
Average for each of four persons		3⅛

DINNER NO. 2.

(For four persons.)

	Amount.	*Cost.*
Mashed Scotch Peas with nuts	1 lb. peas, 7 oz. peanuts (shelled)	2 cts., 2¼ "
Graham Gems	1 lb. graham flour	2 "
Rice (steamed)	½ lb	3½ "
Dried-Apple Sauce	¾ lb	¾ "
Sugar	3 oz	1 "
Total		12 cts.
Average for each of four persons		3 "

BREAKFAST NO. 3.

(For four persons.)

	Amount.	*Cost.*
Dried Apples and Apricot Toast	⅓ lb. dried fruit	2 cts.
Corn Puffs	¾ lb. corn-meal and flour	1½ "
Poached Eggs	½ doz. eggs	4 "
Baked Potatoes	4 lbs.	2 "
Bread for Zwieback	½ loaf	2 "
Total		11½ cts.
Average for each of four persons		2⅞ cts.

DINNER NO. 3.

(For six persons.)

	Amount.	*Cost.*
Irish Corn Soup with Croutons	1 lb. dried corn	8 cts.
Potatoes	1 lb.	½ "
Bread for Croutons		1 "
Corn Bread	8 oz. corn-meal, 20 oz. white flour, ⅓ cup yeast	4 "
Stewed Beans	1 lb.	2 "
Stewed Dried Peaches	½ lb.	2½ "
Sugar		1 "
Total		19 cts.
Average for each of six persons		3⅙ "

BREAKFAST NO. 4.

(For four persons.)

	Amount.	*Cost.*
Corn Bread with Nut Sauce	⅔ loaf	3 cts.
Pea Gravy Toast	¼ lb. peanuts (shelled)	1½ "
Bread for Zwieback	½ loaf	2 "
Peas and Gravy	¾ lb. peas, flour, cream for gravy	2 "
Total		8½ cts.
Average for each of four persons		2⅛ "

DINNER NO. 4.

(For four persons.)

	Amount.	*Cost.*
Baked Beans	1 lb.	2 cts.
Boiled Potatoes	3 lbs	1½ "
Peanut Sauce	½ lb. peanuts (shelled)	3 "
Graham Gems	1 lb. graham flour	2 "
Total		8½ cts.
Average for each of four persons		2⅛ "

Pain in the Back.— A subscriber in Maine asks advice as to the treatment for pain in the back, reaching almost to the neck. It is increased by exercise. The lungs do not seem to be affected, though exhaustion produces a cough that "reaches down to the lungs."

Ans.— Pain of the sort referred to is generally the result of indigestion. Pressure at the pit of the stomach will show that the tenderness exists at this point. This is evidence of irritation of the sympathetic nerves.

Bright's Disease.— E. H. S., Washington, D. C., asks for suggestions respecting diet and regimen for a person suffering from Bright's disease.

Ans.— First of all, the diet must be made strictly aseptic. Such a dietary will exclude meats, fish, shell-fish, fowl, and flesh food of every description. The diet should consist of fruits, grains, and nuts. Kumyss or buttermilk may be added if necessary, or may be used temporarily with advantage; in some cases as an exclusive diet. When the tongue is coated and the kidney symptoms are threatening, the diet may with advantage, for a few days, be made to consist wholly of fruits. Persons suffering from Bright's disease should choose a dry, warm climate as a place of residence. Gentle exercise should be taken daily in the open air, but muscular and nervous fatigue should be carefully avoided. Excesses of all kinds should be avoided.

Eczema.— E. W. P., Iowa, is troubled with an eczematous eruption of the face, which has existed for five years and puzzled many physicians. "1. What diet would you recommend for one whose tongue is always badly coated? 2. What causes a person to feel intensely hungry after eating a hearty meal?"

Ans.— 1. Eat only fruit for three days, then eat fruit and nuts at one meal and nothing but fruits at the other meal; or, if three meals are taken, take only fruit for breakfast and supper. An exclusive fruit diet may be resorted to at intervals for a few days, or until the tongue becomes entirely clean, if this symptom is persistent.

2. A diseased condition of the solar plexus.

LITERARY NOTICES.

THE articles on "Undergraduate Life at Girls' Colleges," which begin in the May *Scribner's*, are to be fully illustrated with original sketches by artists who have studied the life at first hand. Wellesley appears in May, Vassar in June, and Smith in July.

IN honor of the four hundredth anniversary of Savonarola, the martyred friar of Florence, the *Missionary Review of the World* for May gives a leading article of exceptional interest on the subject of his life and times. The author, Rev. George H. Giddins, of London, portrays this marvelously strong and attractive character with great vividness and vigor, and shows a clear insight into the trend of his time. Numerous illustrations add much to the attractiveness of the article. The editor-in-chief writes a pathetic but forceful article on "Mission Work for the Lepers," picturing graphically and powerfully the misery and loathsome condition of the unfortunate sufferers, and the Christlike heroism and self-sacrifice of the men and women who are devoting their lives to relieve their bodies and save their souls. John G. Paton, the noted veteran missionary to the New Hebrides, contributes an interesting article on his work there, and Dr. H. Grattan Guinness, of London, gives a sketch of the Malay Archipelago and its missions.

EVERY person, whether a musician or not, will be interested to know that Reginald de Koven has set Rudyard Kipling's "Recessional" to music, and that the hymn is published in the May *Ladies' Home Journal*. The "Recessional" is conceded to have enriched our literature more than any other single poem of the century, and Mr. de Koven's music is in every way worthy of the famous author's masterpiece. He has set the words for barytone and mezzo-soprano

voices, with a chorus and solo, making a composition which is likely to prove one of the most popular for church choir singing presented in recent years.

BRADFORD TORREY completes in the May *Atlantic* his charming and instructive idyl of spring in the Alleghanies, paying especial attention in this paper to the feathered inhabitants of the valley, who and what they are, how they compare with those of more northern localities, and how they comport themselves at their spring advent.

This number also contains a group of four poems, two of American and two of English authorship. These poems exhibit great variety of subject and character; any one of them would give distinction to the issue of a magazine containing it, and the four taken together constitute a remarkable and noteworthy poetic conjunction. The warlike conditions of the time give poignant and impressive interest to Secretary Olney's statesmanlike paper on "The International Isolation of the United States."

THE *Jenness Miller Monthly* has again changed its name, having adopted the briefer cognomen, the *Gentlewoman*. A worthy list of contributors is advertised for the current year, among whom we notice Sir Walter Besant, Brander Mathews, Mary E. Wilkins, Rev. Dr. Edward Everett Hale, Julia Ward Howe, W. T. Smedley, General Tracy, Professor Landon Carter Gray, Hon. John Wanamaker, and "John Strange Winter."

THE May *Forum* contains a number of articles of special interest. In "The Utility of Music," Henry F. Finck says: "The use of song as a hypnotic, which to the present day every mother resorts to instinctively, suggests the true medical function of music. We are too apt, in speaking of medicine, to have in mind pills and powders only, forgetting that, especially in the case of nervous troubles, the body is often most easily cured by way of the mind, and that a soul medicine is often more effective than soothing sirup and chemicals." E. C. Willard, superintendent of schools at Stanford, Conn., discourses briefly on the advantages of physical education in public-school education. Another very interesting and instructive article is on "Central America: Its Resources and Commerce," by Wm. E. Curtis. The article which will attract the widest circle of readers in view of our present crisis is, "The Fifty Million Appropriation and Its Lessons," by Hon. Hilary A. Herbert, ex-secretary of the navy.

THE *Arena* for May presents a specially interesting list of articles, the first being "The Great Slave Power," by Hon. Wm. M. Stewart, U. S. Senator from Nevada. Other articles follow on Immortality, the Monetary Commission, Unknown Natural Forces, Novel-Reading, etc. The editor, John Clark Ridpath, makes some rather pertinent statements in his article entitled, "President Mc Kinley and the Waldorf-Astorian Revel."

A DISCOVERY has recently been made of a document which purports to be an autobiography of Napoleon Bonaparte, written while he was a prisoner on St. Helena, and sent from there to America in 1817. The *Cosmopolitan*, with its usual foresight, has secured the right to publish this document entire, and the series will begin in the June number of that magazine. A chapter from the autobiography is given in the May number, and in a prefatory note the editor says: "This autobiography seems to demand no voucher for its authenticity. Before the reader has finished these pages, he will ask himself: Whose the knowledge which thus throws light upon points which the historians of that period in many labored efforts only confused? Whose the style that in such clear, terse sentences treats thus profoundly of the most intricate questions of government? Whose was the master mind that thus analyzed the greatest problems of the century? If not Napoleon's, whose?"

PUBLISHERS' DEPARTMENT.

THE National Congress of Mothers, which held its second annual meeting in Washington the first week in May, is fast becoming a powerful influence in the dissemination of progressive and rational plans for the training of children. This is the first great organization centered about the single idea of maternity and the improvement of the relation between mother and child.

Apropos of the war, this congress stands for the principle "that lessons of peace must first be taught by harmony at the hearth." It has adopted "Seven Rules of Harmony," of which the following especially interests GOOD HEALTH: —

"I promise to treat all birds and beasts and all existences of the animal and vegetable worlds with justice and gentleness, and not to destroy, save for self-preservation and for the protection of the weak. Instead, my object shall be to plant, to nourish, and to propagate all that will lead to the moral and physical amelioration of my family, my home, and my nation."

The proceedings of the first National Congress of Mothers, including the addresses and discussions, were published in the form of a report, that, notwithstanding its official appearance, is fascinating reading. Doubtless the second Congress will yield an equally important volume.

The price of this report, in paper binding, is 35 cents; in cloth, $1.15. Postage free. Address Secretary National Congress of Mothers, Washington Loan and Trust Building, Washington, D.C.

AN EXAMINATION DINNER.

MOST people have no desire to serve on the examining committee of a school board. The members of such a committee are usually victimized more than the trembling pupils who are obliged to show their knowledge or their ignorance in the presence of a stony public. But the "examining committee" of the cooking-school of the Battle Creek Sanitarium has a novel and very entertaining duty — to eat a specimen dinner prepared by the members of the cooking-class. These "test dinners," as they are called, are given about once a week, and certainly bear no comparison to the dry intellectual pabulum served at school exhibitions.

The plan of the cooking-school is this: There are two courses, the first consisting of thirty class lessons two hours in length, and the second of six weeks' actual constant practise. The first course begins with the consideration of food elements and combinations; the principles learned from the text-books are then illustrated by practical experiments in actual cooking, under the direction of a trained cook. Grains, unfermented and fermented breads, legumes, vegetables, soups, fruits, desserts, sauces, dressings, are thoroughly studied and prepared. This practical work is interspersed with oral quizzes, written examinations upon the principles involved, and "responsibility practise," in which the class is required to prepare test dishes without notes or helps of any kind.

The first course is eminently practical, but the second is intensely so. In the second course the student is required to cook for patients in the Hospital. This is a high honor as well as a great responsibility, for the Hospital is noted for its dainty tray service for the sick. This work is always under the careful supervision of an experienced and skilful director. The student spends the first week of this course as assistant in cooking for convalescents. The second week he is assistant in cooking for ward patients, the third week he is chief cook for convalescents, and the fourth week for ward patients. The fifth and sixth weeks are devoted to making bread, and some attention is given to pies and cakes. It is during this course that the test dinners are given, on the same principle as the responsibility practise of the theoretical course. No reference may be made to notes or helps of any kind. The evening before the dinner is to be given, the student-cook hands in to the director of the school the menu of a dinner that he thinks would be suitable. This is a test of his judgment. The next morning the director gives him a different menu, which he is expected to carry out without assistance. A recent "test dinner" comprised the following articles: Cream pea soup, lentil roast, mashed potatoes, hulled corn, stewed peaches, prunes, apples, tapioca pudding, and breads, which were, after all, the chief feature; these included fruit sticks, beaten biscuit, graham puffs, and cocoanut crisps. The members of the class invite a certain number of their friends to partake of this dinner, and much merriment as well as internal satisfaction attends the feast.

The food demonstrators in our Schools of Health are trained in this cooking-school, and our many friends in the several cities where Schools of Health have been conducted can testify to the superiority of their methods, and the thoroughness of their instruction.

THE Good Health Pub. Co. has just purchased nine No. 6 Remington typewriters for use in its offices. No other machine gives such good satisfaction in every way as this. See their "ad." in another column.

THE MEDICAL OPINION OF THE BATTLE CREEK SANITARIUM HEALTH FOOD COMPANY'S PRODUCTS.

THE London *Lancet* is one of the leading medical publications of the world. It is recognized as an eminent authority in all parts of the civilized globe. A recent issue contains the following reference to the foods manufactured by the Battle Creek Sanitarium Health Food Company and the Sanitas Nut Food Company: —

"There are some novel and interesting dietetic preparations in the list of this company. They consist chiefly of foods prepared from cereals and from nuts. 'Granose Flakes,' for example, consist of light-brown flakes resembling potato chips, which on analysis present the composition of wheaten flour of superior quality — that is, flour in which all the essential food constituents are retained. The nitrogen amounted to 2.14 per cent., which is equivalent to a total of 13.37 per cent. albuminoids. The moisture amounted to 12.02 per cent., and the mineral matter to 2.09 per cent. The microscope showed the presence of starch granules highly distorted by cooking, probably by steam. The preparation is undoubtedly nutritious, not merely on account of its composition, but also because the constituents are partially prepared for the digestive process. 'Nuttose' is an oily looking compound prepared from nuts. The fat is in a finely divided state, amounting to an emulsified condition, while the carbohydrates and nitrogenous matters are previously treated so as also to render them easy of digestion. 'Bromose' exhibits a composition balanced in accordance with physiological requirements. It is prepared in the form of tablets resembling caramels. It possesses a pleasant nutty taste, and here, again, the constituents are in a state favorable for assimilation. Lastly, the preparations submitted to us include 'Caramel-Cereal,' which is offered as a substitute for tea and coffee. It consists of carefully roasted wheat, and resembles coffee in color and appearance, and in the size of the grain. It yields, on steeping in boiling water, a rich infusion with aromatic, coffee-like taste, which contains the nutritious constituents of the wheat berry.

"The preparations are of interest as indicating the steps which are taken to produce on a commercial scale foods in which the nutritive value is increased by the processes adopted."

A NEW BREAD FOR DIABETICS.

THERE is probably no single dietetic need which has received more attention, with fewer satisfactory results, than the preparation of a bread for diabetics. Bran bread is unpalatable and irritating, and has about the same nutritive value as sawdust. Pure gluten is tasteless, unpalatable, tough, and almost inedible. The so-called gluten breads are almost without exception unmitigated frauds. Flour sold by an Eastern firm as gluten flour, and recommended for diabetics, contains no more gluten than ordinary spring-wheat flour. Bread made from it possesses all the disadvantages of ordinary bread for a person suffering from diabetes. Some attempts have been made in France to manufacture a bread from the vegetable casein or legumin of peas or beans, but the result has been by no means satisfactory.

The Sanitarium Health Food Co. has at last solved this difficult problem by producing a bread made by combining pure gluten and nuts. One of the most characteristic properties of nuts is the absence of starch. Nuts, in fact, consist almost exclusively of proteids and fats. They are, in this respect, the vegetable analogue of fat meat. A few years ago the Sanitarium Health Food Co. discovered a method of manufacturing nut meal of a quality superior to anything which had previously been produced, and their product still remains unrivaled. After numerous experiments, many of which were disappointing and unsuccessful, a method has finally been perfected for combining this nut meal, prepared from choice edible nuts and wholly free from starch and sugar, but possessed of the highest nutritive properties, with pure gluten, produced from choice wheat by washing out, by the aid of suitable machinery, all the starch that can be separated. The result of this happy combination is a biscuit, crisp, toothsome, and palatable enough to be regarded as a dietetic delicacy. The diabetic patient will certainly find it no cross to subsist as largely as may be required upon these dainty, nut-flavored biscuit.

Nut Gluten Biscuit are especially adapted, not only to persons suffering from diabetes, but to those who need a rapid gain in fat and blood. These biscuit contain all the elements of nutrition in the most assimilable form, and will be found exactly suited to the needs of convalescents. Very fat persons should not eat them.

The Battle Creek Sanitarium Health Food Co. will be glad to send free samples to any physician or trained nurse who may desire to test this new food. Others may receive a small sample by sending to the address of the company a two-cent postage-stamp.

HOMESEEKERS' EXCURSIONS.— On the first and third Tuesdays in June, 1898, the Chicago, Milwaukee & St. Paul Railway will sell round-trip excursion tickets (good for 21 days) to a great many points in South and North Dakota and other Western and Southwestern States, at practically one fare for the round trip. Take a trip west, and see what an amount of good land can be purchased for very little money. Further information as to rates, routes, prices of farm lands, etc., may be obtained on application to any coupon ticket agent, or by addressing Harry Mercer, Michigan Passenger Agent, 7 Fort Street, W., Detroit, Mich.

THE AMERICAN NAVY, CUBA, AND HAWAII.— A portfolio in ten parts, sixteen views in each part, of the finest half-tone pictures of the American Navy, Cuba, and Hawaii, has just been published, and the Chicago, Milwaukee & St. Paul Railway has made arrangements for a special edition for the benefit of its patrons, and will furnish the full set, one hundred and sixty pictures, for one dollar. In view of the present excitement regarding Cuba, these pictures are very timely. Send amount with full address to Geo. H. Heafford, General Passenger Agent C. M. & St. P. Ry., Chicago, Ill.

A HANDSOME metal paper-cutter and book-mark combined sent free of postage under sealed cover on receipt of ten cents in silver or stamps. The latest, best, and most serviceable adjunct of every library and office. Address Geo. H. Heafford, 410 Old Colony Building, Chicago, Ill.

EXTRACTS FROM DURHAM DUNLAP, M. R. I. A., ENGLAND'S GREATEST SCHOLAR ON HYGIENE, SHOWING THE POWER OF HOT-AIR BATHS.— Ordinary bathing or washing may keep the surface of the body in what is considered a state of cleanliness; but as compared with the action of the hot-air bath, such cleanliness is only like removing filth from the mouth of a sewer instead of flushing the whole sewer itself.

This is what the hot-air bath does, and hence is, immeasurable superiority over all other appliancest as an effectual means by which the whole sewerage system of the human body can be flushed, scoured, and cleansed of impurities, and the skin organism maintained in vigorous vitality.

Surface washing alone will not suffice. To secure health, the blood itself must be purified, its inmost channels flushed and cleansed. This the hot-air bath alone can do, and the truth of this the habitual surface-washer can test for himself. C. M. Robinson, of Toledo, O., has published a free treatise on these baths, which you should read.

"WONDERLAND '98" is the title of a magnificent tourist booklet got out by the Northern Pacific Railway Co., and a veritable wonderland it is, both as to the country it describes and the book itself. The cover is a work of art, designed by Mr. J. C. Leyendecker, of Chicago, and the frontispiece, "The First Touch of Frost," is worthy of a studio hanging, with its graceful, frost-laden foliage, and the yellow morning lighting up the eastern horizon.

The book consists of seven chapters, as follows: Rivers and Mountains; The Lake of the Leech; The Agricultural Northwest; A Canoe Trip through the Park Region; Yellowstone National Park; Around Mount Reinier; Alaska and Klondike — all written in a style to chain the attention and make one long to see the beautiful views so graphically described.

It is printed on heavy-coated paper, and contains over one hundred half-tones and two maps, all making a volume of 107 pages. This superb book will be sent to any address for the small sum of six cents in stamps. Address Chas. S. Fee, Gen. Pass. and Ticket Agt., St. Paul, Minn.