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CRANKS.

BY J. H. KELLOGG, M. D.

ONE of the most serious problems which the student of sociology has to consider is the fact that the human race is constantly developing new and very undesirable species. A simple illustration is found in the great increase in the number of the deaf and dumb. At the present time there are large asylums for these unfortunates in every State. Extraordinary efforts are being made of late to teach the deaf and dumb to speak; and if they can acquire the art of vocal speech, it will certainly do much to counteract a tendency to which I am about to call your attention. But it is a matter of fact, and is recognized as such, that by the association and intermarriage of deaf and dumb persons, the tendency to those defects is increased. It is not absolutely certain that the children of congenital mutes will also be mute, but the proportion of such children who are themselves congenitally mute — deaf and dumb — is several hundred times greater than that of children born of healthy parents. So, if this tendency should increase,— if this association of the deaf and dumb and their intermarriage should increase,— the time would not be very far distant when we should have a deaf and dumb variety of the human race. Likewise, in our institutions for the blind, persons who are congenitally blind become acquainted with each other, and marry, the consequence being that we have another tendency to the establishment of a new species,— a blind variety of the human race.

But a much more serious tendency, in this establishment of different varieties of the human race, is found among the criminal classes of our large cities. Individuals of this species have a distinct physiognomy of their own. Vice and crime are written upon their faces; it is evident at a glance that they are inferior, defective beings. Look down into the groggeries where they congregate, and you will see people who have hardly the semblance of the human. They do not look much more like human beings than like the higher class of apes,— the chimpanzee for example,— and their behavior is such as would suggest that they are more closely allied to the lower orders of animals than to the higher orders of the human race. Now these persons live together; they marry among themselves, and have their own ideas and habits; they have a distinct language,— a slang which is really incomprehensible to a person not accustomed to it. If you should hear them talking together, you could not understand them. They know no way of expressing their feelings except by slang words, "the thieves' dialect," as it is called, which, to a novice, is quite unintelligible.

These classes are increasing,— there is no doubt about that. In spite of the efforts of missionaries and police to suppress crime, this dangerous species is growing and increasing by the laws of heredity.

I have made these introductory remarks for the purpose of calling your attention to the fact that different varieties of persons are being produced; and among them are some who are termed "cranks." These individuals form a higher class than do the insane, for insanity is merely a further development of what is called "crankiness." The number of the insane compared with the sane (native-born) is increasing at an enormous rate. On examination of statistics, I find that in 1860 there were eighteen thousand native-born insane persons in the United States; in 1870 there were twenty-six thousand, and in 1880 there were more than sixty-five thousand.

Now let us ascertain the percentage of increase of insanity. If you figure it out, you will find that the percentage of increase in native-born citizens of the United States between the years 1860 and 1870 was forty-three per cent.; between 1870 and 1880 it was one hundred and fifty-five per cent. Comparing these percentages with the percentage of increase of population, we find that the latter was twenty-one between the years 1860 and 1870, and between the years 1870 and 1880 it was thirty-two. Comparing the rate of increase of population with the rate of increase of insanity, we find that in the decade between 1860 and 1870 the increase of insanity was more than double the increase in population. This is native-born population, remember; it does not include any imported paupers from abroad. The increase of insanity between the decade of 1870 and 1880 was nearly five times as great as the increase of population. Certainly an increase of insanity five times as great as the increase in population is something terrible to contemplate. If this rate of increase should keep on growing, what will it be fifty or even twenty years hence?

Taking a different basis of comparison; for every six thousand persons in 1860, there were four insane persons; for every six thousand persons in 1870, there were five insane; for every six thousand persons in 1880, there were ten insane,— about two and one-half times as many insane persons as there were in 1860 for the same population.

By the way, the increase of births has not kept pace with the increase of population, notwithstanding the increase of foreign population, so that we are two million babies short within the last ten years. In America, then, we find the same tendency that there is in France,— a tendency to depopulation by diminution of the birth-rate. This is a very serious matter. An increase of the death-rate would not be so serious, because it would merely indicate an increase of cholera, yellow fever, or something of that nature; but a decrease in the birth-rate will have a greater influence upon the depopulation of the country than an increased death-rate. Hence this decrease in the birth-rate means much more than an increase in the death-rate, because it strikes at the constitution of the race. It means that there is some great hindering cause which is not so obvious as that of an increased death-rate,— a cause that we can not get at, and worse than that,— a cause that we can not control. If it were an invasion of some disease,— cholera, for instance, —it could be treated, it could be quarantined; but if it is an invasion of constitutional weakness, then it is something that no quarantine can ever remedy.

This principle applies to the increase of crankiness, and consequently of insanity, for insanity is an advanced stage

CO-OPERATIVE HOUSEKEEPING.

of crankiness. A man who is insane is in a state in which his will ceases to dominate him. Probably there is no person who is perfectly sane at all moments of his life; probably none are perfectly balanced under all circumstances. Doubtless every man has some characteristics which are too strong for his will to manage under all circumstances. We find comparatively few people who are perfectly well balanced. Many are insane on a single subject. One man is insane on the subject of acquisitiveness; his desire to acquire property dominates his will, and that man becomes a kleptomaniac.

There is a great variety of cranks,—political cranks, who think the country will certainly go to pieces unless their pet governmental hobby can be recognized; religious cranks, who conceive the idea that they are endowed with some superhuman or divine power; medical cranks, —for instance, faith healers and mind-curers,—people possessed of a certain kind of fanaticism which leads them to discard every remedy of a material nature, who recommend that every reasonable means of treatment be cast aside and every valuable remedy excluded. Then there are domestic and social cranks, persons who make life miserable for their families and friends. There are a great many of these in every community.

The influence of heredity in causing crankiness is far greater than is commonly recognized. We are all creatures of heredity. Once in a while we see a man who was born with a short leg or a clubfoot. We do not blame him for limping: how can he help it? He might piece out his leg, but he would still hobble along. He is not to blame for his lameness. Now suppose another man happens to have been born with a small bump of conscientiousness and too large a bump of combativeness. He is a cripple morally, as the other man is a cripple physically. He stumbles morally: can he help it? With great effort he can, to a certain degree. He can try not to limp and stumble, but he will, in spite of all his unaided efforts. It is for this reason that religion and the Bible are given us. It is to help us poor moral cripples, so that by constantly using strong effort, by looking to God for divine help, we may be able to walk uprightly.

But there is another cause of crankiness, to which I wish to call your particular attention, and that is starved and poisoned nerves,—nerves that in consequence of bad digestion are not properly nourished. Doubtless the average American eats enough, but he does not eat the right sort of things. A man sits down to a hotel dinner-table, and, if he expects to make good strong brains and nerves out of sweetbreads, Saratoga chips, cheese, pickles, mince pie, and strawberry shortcake, he will be just as much disappointed, and find himself just as unfortunate in the end, as a stone-cutter would if he expected to make a good, solid block of marble out of mud and straw. Brains and nerves are made of what we eat. The brain will think as it is constructed to think; the nerves will feel as they are constructed to feel. The impulses of the brain are largely the result of the foods received into the system, and its structure just as much depends upon what we put into our stomachs as the structure of the building depends upon what is put into the building. What we take into our stomachs reappears as muscle, brain, nerve, bone, hair, eyes, blood, skin. All these parts of the structure of the human body are made of what we eat. But we seldom think of that when we are eating. We see people eating things that they would think would soil their hands if they touched them. In Switzerland, for example, I have seen people eating food, which, if taken into the hands of a

surgeon about to perform a surgical operation, would certainly infect the wound with germs.

We are not careful enough as to what we take into the stomach. We do not stop to think what the effect will be. Now it is just as important that the stomach should be clean as that our hands and faces should be clean. It is vastly more important that the stomach should be kept in a pure and wholesome condition, than that the outside of the body should be kept clean, and yet that is very important. A great many people spend time in polishing their teeth, and that is right and sanitary, but they care nothing about this important organ farther down, because it does not show, and so in many cases the stomach becomes a regular Golgotha. An English medical authority says that twenty thousand carcasses are buried in the English stomach every year. The amount of decomposing food that is put into the human stomach annually is enough to account for all the crankiness of the people.

The result of abusing the poor stomach in this way is that it becomes weak. It is not able to digest a sufficient amount of food properly to nourish the brain and nerves. The man or woman whose nerves are all the time crying out for something that will nourish them can not be in a healthy state of mind. Did you ever see a steam-boiler trying to run an engine without a sufficient head of steam? The steam gets low, the fireman forgets his duty, and the engine runs slowly. Now it is necessary, in order to have the machine go right, that the motion of the "governor" should be kept up. If the motion gets slow, it is evident that there is not steam enough. It is like trying to sail a ship without wind or sails. If there is no wind, there is no motion. So it is with the brain: when the nerve-tone is low in consequence of want of sufficient food (for a portion of the food is converted into nervous energy, some of it for the spinal cord and some for the brain, as brain-energy; and it is necessary that these energies shall be released, so that the various organs can do their proper work), we have a condition which the doctors used to call "irritable weakness." There is activity, perhaps, but it is insufficient activity.

This state of things has become very common. I was in London a few years ago, and a leading physician there said to me, "Doctor, I suppose that in America the principal disease which you have to deal with is dyspepsia; I believe I have heard that your nation is a nation of dyspeptics." I told him that they were not all dyspeptics; but that those who were, had brought it on by unhealthy diet and hasty eating.

There is another cranky condition of the system arising from indigestion. If a man can not digest his food, he not only loses a large portion of what he eats, but this undigested food is converted into poisons, instead of good sound tissue. There are some forty or fifty different kinds of germs that inhabit the alimentary canal in cases of indigestion, and every one of them is capable of producing poison. Some of them produce intensely poisonous substances. These germs are constantly manufacturing material, which, when absorbed into the body, excites the nerves, makes one giddy, and produces various symptoms of intoxication. The giddiness, the numbness, the crawling sensation, the vertigo, and not only that, but the nervousness of which people complain two or three hours after eating, indicate a state of poisoning, not by alcohol, but by germs in the alimentary canal.

Here is a man who has eaten a breakfast which he can not digest. It lies heavy in his stomach. Germs are pro-

ducing poisons; these poisons are being absorbed, and the man begins to feel nervous. When he is annoyed, he is tempted to say an unpleasant word. Every nerve is "on edge," as we call it, and how can he help thinking and saying sour things? I am not going to maintain that it is absolutely impossible to help it, but it is the most natural thing in the world to be cross under such circumstances. It is natural for that man to be irascible, because his nerves are in an abnormal state.

If a man commits a crime under the influence of alcohol, you say that he is responsible, because he was responsible when he took the alcohol; but he has done what he would not have thought of doing if he had not taken the drug. Suppose the alcohol was given him without his knowledge, or suppose it is a boy that has taken it. If a boy committed a crime after having been put under the influence of this drug, a court would hardly hold him responsible. Why? — Because we know that a person who is under the influence of poison will do things that he would not do while in a normal state. Now here is a dyspeptic; he is poisoning himself through the condition of his alimentary canal. That man does things under the influence of poisons that have been produced by his dyspepsia, which he would not do if he were in a normal state. And yet we hold him responsible. We should have pity on the poor dyspeptic.

Most of our grievances are born in our stomachs. "This world is not so bad a world as some would like to make it," the poet says; and the world is not so bad a world as our stomachs often make it. We see the world through eyes dimmed by indigestion. So I think the growing insanity of the world is due to bad digestion. If a man will behave properly toward his stomach, if people generally would observe the laws of health in their diet, this alarming tendency to crankiness and craziness, as well as a great many neighborhood troubles, church quarrels, and domestic jars, would disappear. I have no doubt that many people who are now in insane asylums ought to be in a sanitarium, taking sanitarium diet and regaining their sanity at the same time. Most of this great evil among men might be avoided, I believe, if the diet could only be corrected. I think there should be an institution for the insane where a person who is not wholly insane could be cured by placing him under opposite circumstances to those which produce insanity. If a man is surrounded by insane people, he is more likely than otherwise to become insane. There are many whose mental equilibrium is so nicely poised that it requires nothing but indigestion to balance them over to the side of insanity. They can bear the ordinary strain of life, but when their brain and nerves are starved and poisoned in consequence of indigestion, the common ills and petty trials of commercial or domestic life upset their equipoise, and send them to that limbo of lunatics, the State asylum.

There are thousands of people who are living miserable, unbalanced lives all their days simply because their stomachs are out of order. I have heard men say, "I am all right, excepting a sour stomach; but that does n't amount to much. I have had that a good many years." People think they are well, although they are dosing themselves all the while in order to keep comfortable. The tyranny of a bad stomach is terrible; from year to year it modifies and moulds the character. Even the disposition is changed by the influence of a demoralized digestive system upon the mind as well as the morals.

WILLIAM ANDRUS ALCOTT, M. D.

BY HIS SON, WM. P. ALCOTT.

I. General Sketch.

THE centennial of this reformer's birth came on August 6, 1898. He was the first child of very poor but respectable parents, living in Wolcott, Conn. When seven years old, he was put upon the back of a horse to plow, and, as he afterward estimated, from that time till his majority he was of more pecuniary profit than cost to his parents. Although exceedingly promising as a pupil, he received little beyond a meager education in "the district school as it was," leaving before he was thirteen.

His cousin, Amos Bronson Alcott, the father of Louisa M., lived close by, and being of similar tastes, these boys read all the books to be found, near and far. Each of them had a well-educated and good mother,—"school ma'ams" they had been,—who encouraged and helped them in every possible way. Both William and Amos, according to maternal faith, were confirmed in the Episcopal Church. Afterward my father became a decided and very aggressive skeptic; he never did things by halves! But his mother's example and instructions *held*, and when nearly thirty-five he ceased to count *himself* the center of the universe, and lovingly recognized God upon the throne. He became an earnest Christian, and joined the Congregational Church.

For twelve years, after he was eighteen, he taught school, at first only in the winter. Toward the last of his teaching he added to it, for two years, study with a physician, including one term of medical lectures at New Haven. In those days, no more preparation than this made a "regular" doctor. He now had his desire,—another employment, should teaching too greatly tax his health, of which there were alarming tokens,—as well as some further education and also preparation for reform work, which had long been his hope.

Teaching a little longer with marked success, he was called to Hartford and in 1832 to Boston to aid in educational movements. He began lecturing in the same line, editing magazines, writing books, and often selling them from house to house, as a colporteur. His work gradually shifted from purely educational to hygienic, family, and moral reform. At the organization of the American Vegetarian Society in 1850, he became its first president, in which position he continued till his death. Altogether his books and pamphlets were one hundred and thirteen; while articles for the periodical press numbered many hundreds. More than one thousand were preserved.

Dr. Alcott spent his last years in Newton, a suburb of Boston, and died there March 29, 1859, leaving his wife, born in 1812, and his only daughter and son, all of whom still survive.

Though "born on Monday," "fair of face" hardly applied to our subject. Three inches more than six feet in height, he was spare and consumptive in physique. Such were the unselfishness, simplicity, and sweetness of his character that he was greatly beloved by all who really knew him.

II. His Vegetarianism.

In my father's boyhood, little was known of the laws of health. Some causes of his later struggles with disease are plain, even in the meager data of his earlier life. He says: "Consumption, by right of inheritance, made very early

claims ; and its demands, as I approached manhood, became more and more cogent, in consequence of measles, dropsy, Lee's pills, and the injudicious use of medicine, and many other errors. My employment, too, as school-teacher ('boarding 'round'), had been far enough from favorable to health." Cold upon cold became his winter's experience, leaving him each spring apparently in a rapid decline.

His condition seemed hopeless in 1826. Feeling that there was work he must do, and having a disposition to think and experiment for himself, he gradually struggled towards more healthful habits. One weight after another was thrown off. He became satisfied that his hope lay in utterly abandoning tonics, stimulating food and drink, and the many drugs he was using.

On July 4 he failed to declare his independence, as he had intended. But on the next day, in desperation, he broke away from all his bonds, and began a journey of about two weeks, riding a few miles the first day, then *walking* each subsequent day as far as he was able. He returned from this excursion with his lungs no worse and his muscular strength greater. Going out with the laborers in his father's fields, he tried to do something. In spite of their grim jokes as to "the advantage of having a ghost to assist them," he persevered till, before many weeks had passed, he was able to do a fair half day's work.

His diet it is important to note. Poverty may have proved a blessing, for he says of this excursion that "from almost entire lack of means for anything but a comfortable bed [which he would have], I lived on a few ounces of solid food and a little milk or ale (!) each day, . . . though, by the way, I do not know but I owed my partial final recovery in no small degree to this very starvation system." "Many a time was I satisfied, because I was determined to have it so, with a tumbler of milk and a couple of crackers for my breakfast, or even my dinner ; and as for my supper, I often dispensed with it wholly ; and all this, too, strange though it may seem, not only without the loss of strength, but with a slow yet steady increase."

He was now able to take up the practise of medicine in his native town. Horseback riding in the fine air of an elevated region was a further benefit, and his disease retired apace. Soon he not only gave up cider, which was freely used in his father's house, but also ale and every drink save water.

In 1830 he practically became a vegetarian, using neither flesh food nor even eggs more than two or three times a year, and in 1834 he entirely discarded all that, and became a decided advocate of our reform. It is impossible to say that anything more than his own feebleness, his study, and his experiments led to this result. It appears that at first he was entirely unaware that Mr. Graham and other pioneers were moving in the same direction. But he probably noticed cases of vegetarianism recorded by Dr. Benjamin Rush, and that author's constant advocacy of a simple and unstimulating diet. My father greatly admired Benjamin Franklin, and of course knew of his earlier habits. Catching at every straw for help, he no doubt at first tried disuse of flesh as an experiment.

Dr. Alcott's lungs were always sensitive. At times they gave him trouble, and he finally succumbed to an attack of pleurisy. In his later days he was wont to remark that his life had been prolonged like Hezekiah's, but for thirty years instead of fifteen. The amount of work he performed during this period is wonderful. Thus his experience may be an encouragement to others.

It was not till 1836 that Dr. Alcott was willing to be married. His children have

followed his dietetic habits, and have escaped consumption, and enjoyed better health than their father or the great majority of those around them. Some of the descendants are remarkable specimens of physical vigor. One granddaughter in a recent emergency rode her wheel thirteen miles in sixty-five minutes.

III. His Ability to Work.

Dr. Alcott was always a great pedestrian, and counted walking one of the best forms of exercise. The *American Vegetarian* says as to his strength at the age of fifty-three, that on a visit to his friends after twenty years' absence from the farm, he found himself in harvest-time able to "cradle" rye with champions in that work, and could "hold his own" in any farm labor. On a foot journey, his stockings being still wet from exposure, before breakfast and without any considerable fatigue, he walked home barefoot, a distance of ten or twelve miles. In 1844 he walked seventy-eight miles in two and one-half days, and then, after supper, he found himself running — a common gait with him — a mile to the post office.

He gave great numbers of lectures and addresses in schools, one day speaking thus for six hours and then two in the evening. At another time he gave twelve lectures in the schools of Cleveland and one public lecture in the evening of the same day. He was able to visit from fifty to seventy-five families, conversing with each on the laws of health, the necessity of reform, and similar weighty topics, and then to give his public lecture before he rested, and this he could follow up for six or seven days in a week; for he often "preached" on the Sabbath. Sometimes we wondered why ministers should find it so hard to deliver two or three sermons a week.

In composition for the press his achievements were often remarkable. He could work at this many hours a day with very little sleep, and, indeed, he claimed that mental laborers need less sleep than others. But he always retired early, holding "an hour before midnight worth two after." He rose at four, sometimes much earlier, for he could not sleep in the morning. After bathing, opening his eyes in cold water, and making fires, then and not before, he "lighted up." In this way his eyes were stronger at sixty than at thirty. Writing till daylight, he would work in the garden till breakfast. After that and family worship, he often wrote all the forenoon with frequent rests at garden work, and occasionally he would work in this way till night.

It must be remembered that such work was done by one who had been "in the second stage of tuberculous consumption." The ineffaceable ink-stain was still on his middle finger when we laid him to the rest he had worthily earned by a life of eminent industry and unselfishness, concerning which more may hereafter be written.

MATADOR OR ABAATOIR: WHICH IS THE MORE CONSISTENT WITH ENLIGHTENED CIVILIZATION?

BY J. H. KELLOGG, M. D.

(Concluded.)

IT is interesting to note that the historians of all nations represented them as looking backward to a "golden age," when animals were not employed as food, when a universal fraternity prevailed among all living, sentient things. Relating to this period, the poet Ovid, writing of the views of Pythagoras, says,

"Not so the Golden Age, that fed on fruit,
Nor durst with bloody meats their mouths pollute.
Then birds in airy space might safely move,
And timorous hares on heaths securely rove;
Nor needed fish the guileful hooks to fear,
For all was peaceful, and that peace sincere."

The Biblical account of the dietary of the first man agrees exactly with the traditions of the earliest members of the race, which have been held in common by all the ancient peoples. In Gen. 1 : 29, 30, we read: "And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is there fruit of a tree yielding seed; to you it shall be for meat. And to every beast of the earth, and to every fowl of the air, and to everything that creepeth upon the earth, wherein there is life, I have given every green herb for meat."

THE SLAUGHTER OF THE INNOCENTS.

It is an interesting fact that the description of the dietary assigned by the Creator to the human family, according to the record in Genesis, agrees precisely with the bill of fare which science assigns to

man from the consideration of his anatomical structure and his physiological needs.

The basis for the ethical argument against flesh eating is to be found in the fact that lower animals are, in common with man, sentient creatures. They are not things, but beings. An ox, a sheep, can hear, see, feel, smell, taste, and think, if not as well as man, at least to some degree after the same fashion. The lamb gamboling in the pasture enjoys life much in the same way as the little child chasing butterflies across the meadow. A quadruped can learn, remember, love, hate, mourn, rejoice, and suffer, as human beings do. Its sphere of life is certainly not so great as man's, but it is none the less real and none the less precious to it; and the fact that the quadruped has little is not a good and sufficient reason why the biped, who has much, should deprive the other of the little that he has.

We have somehow become accustomed to think of our inferior brethren, the members of the lower order of the animal kingdom, as things; we treat them as sticks or stones, as trees, and other nonsentient things which are not possessed of organs of sense and feeling. We forget the wonderful likeness which exists between us and these lower members of the animal creation. We neglect the fact that their brains are like our brains, their muscles like our muscles, their bones like our bones; that they digest as we digest; that they have hearts that beat as ours beat, nerves that thrill as ours thrill; that they possess to a wonderful degree the same capacities, the same appetites, and are subject to the same impulses as we, although for the most part it must be said of them that they have adhered far more closely to the divine order established for them than have we.

Must we not confess that our readiness to take the lives of beasts and to consume them as food is largely based upon the fact, as Plutarch, the first biographer, suggested hundreds of years ago, that they do not possess the faculty of human speech? If the butcher about to cut the throat of a lamb should suddenly be addressed by the innocent creature with a pathetic appeal for its life, it would doubtless be necessary for him to take a few more steps downward in the scale of the degradation of his manhood before he would be able to bring himself to the accomplishment of his cruel purpose. But the sheep goes dumb to the slaughter; nevertheless, do not its eloquent eyes appeal for mercy? Do not the bleating of the calf, the bellowing of the bull, the cackling of the frightened geese, the gobbling of the reluctant turkeys, and the cries of hundreds of other creatures that we call dumb, but to each of whom nature has given its characteristic speech, rise in eloquent protest against the savagery to which the instincts inherited from our cannibalistic ancestors habitually lead us? That we are able in cold blood to take the lives of these innocent beings, then to bury their carcasses in our stomachs, as do the savage beasts of our forests, is made possible only by the fact that "the savage still leaps and yells in our hearts."

Flesh eating is but the natural result of that supreme selfishness which leads man to the egotistic belief that all things were made for his own personal pleasure and use. We often meet the suggestion, "If the lower animals should not be eaten, then what use shall we make of them?" As if it were man's duty or privilege to eat everything of which he can make no other use! Did not God make each creature to be, in its own way, on its own behalf, a representative of some phase of himself, an incorporation of the divine thought? Is not the whole creation, sentient and insentient, an expression of God? Has not God created sentient beings with a common right to live, and

enjoy those peculiar attributes which distinguish them from inanimate objects, such as stones and plants?

The divine order, as clearly shown by nature as by revelation, and by the traditions of the ancient world, and illustrated by the practise of the greater portion of the human race, makes the vegetable world the means of gathering and storing energy, and making it into forms usable by the sentient beings which compose the animal world, the one gathering and storing in order that the other may expend. When an animal eats vegetables, there is no pain, no sorrow, no sadness, no robbery, no deprivation of happiness, no sunlight shut out from eyes that were made to see, no sweet melodies forever shut away from ears that were made to hear, no simple delights denied to beings that God made, if not in his own image, at least so nearly like his image, man, that the man whose eyes have been enlightened by the study of nature may look down and see in the millions of beings that God has made to share with him his own spirit, the breath of life, some traits of himself that must now and then bring blushes to his cheek or strike deep into his soul barbed arrows of remorse.

When a man eats a brute, what a picture rises!

"Deaf to the calf that lies beneath the knife,
Looks up, and from her butcher begs her life:
Deaf to the harmless kid that ere he dies,
All methods to procure thy mercy tries,
And imitates in vain thy children's cries!
Where will he stop who feeds with household bread,
Then eats the poultry which before he fed?"

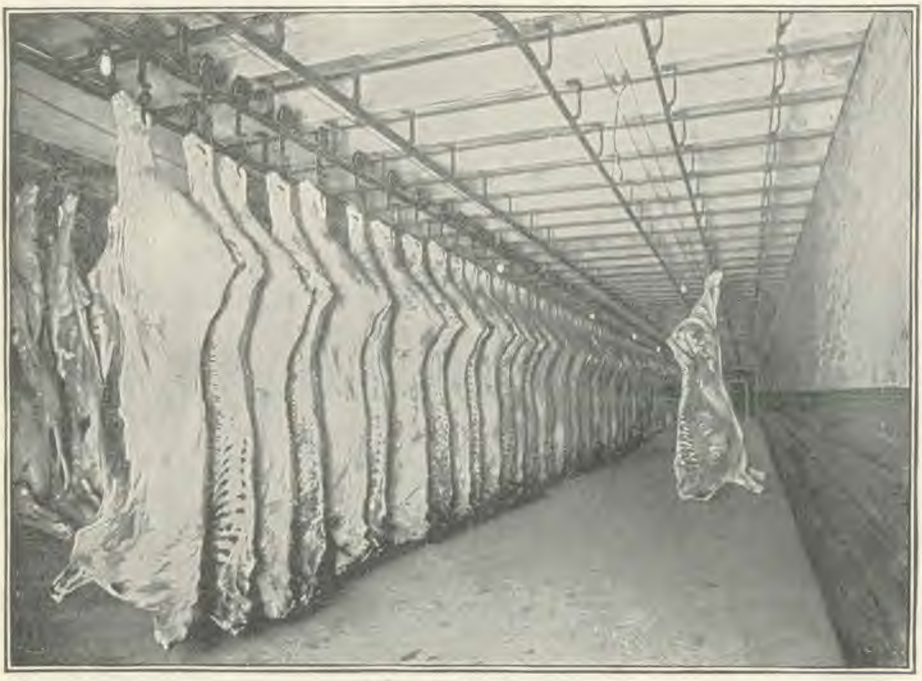
—*Ovid.*

A Den of Scavengers

Man rears his cattle, sheep, and poultry much like household pets. His children make his lambs their playmates. Side by side his oxen toil with him in his field. In return for kindness, they give affection. What confidence they repose in him! How faithfully they serve him! With winter's frost an evil day arrives, a

day of massacre, of perfidy, of assassination and bloodshed. With ax and knife he turns upon his trusted friends,—the sheep that kissed his hand, the ox that helped to rear his crop. The air is filled

"Take not away the life you can not give;
For all things have an equal right to live:
Kill noxious creatures, where 'tis sin to save;
'Tis only just prerogative we have:
But nourish life with vegetable food,
And shun the sacrilegious taste of blood."



DRAWN AND QUARTERED.

with shrieks and moans, with cries of terror and despair; the ground is wet with red blood and strewn with corpses. Is there a brute on earth that would be capable of such a crime? In such an act have we not the veritable spirit of murder in an aggravated form? Let us listen to the opinion of a pagan who lived five centuries before Christ:—

"Whoever was the wretch (and cursed be he)
That envied first our food's simplicity,
The essay of bloody feasts on brutes began,
And after forged the sword to murder man—
Had he the sharpened steel alone employed
On beasts of prey that other beasts destroyed
Or man invaded with their fangs and paws,
This had been justified by nature's laws
And self-defense: but who did feasts begin
Of flesh, he stretched necessity to sin.
To kill man-killers, man has lawful power,
But not the extended license to devour.

Well did Plutarch say, "Alas, for our savage inhumanity! It is a terrible thing to see the tables of rich men decked out by those layers-out of corpses, the butchers and cooks."

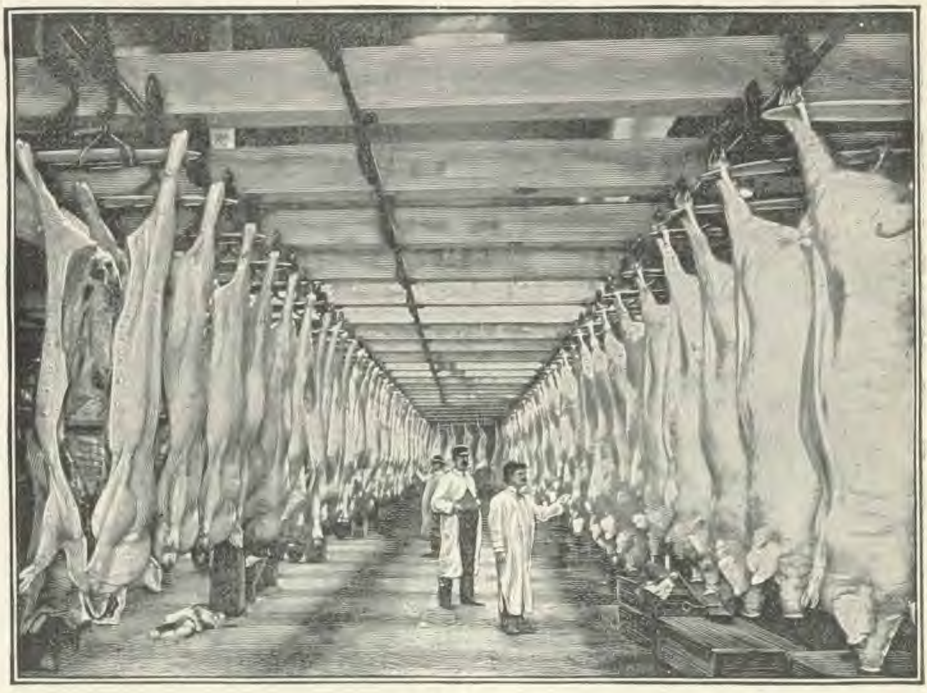
Apologists for flesh eating, compelled to admit the force of both the sanitary and the ethical arguments against the debasing and inhuman practise of destroying our fellow creatures, often seek to find defense in their practise in the fact that in the ninth chapter of Genesis, when Noah had just left the ark, permission was given to him to make use of animals for food. "Every moving thing that liveth shall be meat for you; even as the green herb have I given you all things." (Gen. 9:3.) It is certainly true that Noah was given permission to slay and

eat his fellow creatures if he chose to do so; but a remarkable fact, which seems to have escaped the notice of those who use this text as an apology for flesh eating, is that the same command which gave Noah permission to take the lives of lower animals also gave the lower animals permission to kill and eat Noah and his descendants.

"And surely your blood of your lives will I require; at the hand of every beast will I require it, and at the hand of man; at the hand of every man's brother will I require the life of man." (Gen. 9:5, 6.) A reference to the original brings out the fact that the word used for "require" in this text is *darash*, the first and most characteristic meaning of which is "to seek." The significance of the Hebrew word rendered "at" may be properly represented by the word "by." The text will accordingly read, when rightly rendered, "And surely your blood of your lives will I seek; by the hand of every beast will I seek it, and by the hand of man; by the hand of every man's brother will I seek the life of man." The following text carries out this meaning It is the shedding of blood that is spoken of.

Man is simply told that he can, if he will, take the lives of all living creatures, and consume his fellow beings as food, but if he does, his own life will be in jeopardy; for the beasts, which have heretofore been in such perfect subjection to man, will in retaliation turn upon him, and, if possible, destroy his life, and devour him.

This thought is further sustained in the second verse of the same chapter: "And the fear of you and the dread of you shall be upon every beast of the earth, and upon every fowl of the air, upon all that moveth upon the earth, and upon all the fishes of the sea; into your hand are they delivered." No such feeling previously



THE MORGUE.

existed, but now there is good reason for the feeling. Man has turned upon his former friends, to slay and devour them; but the moment he was permitted to do this, he was informed of what the penalty would be.

It thus appears that man not only introduced sin into the world, and thereby became responsible for the sorrow and wretchedness and misery which have resulted from physical, mental, and moral transgression, but that he also first set the example of bloodshed and carnage, and introduced the warfare and strife, which, during the ages since, have been growing more and more fierce and bitter between man and man, between beast and beast, and between man and brutes. Certainly it would seem that it is man's duty, inasmuch as he was the first offender, now to recognize the evil which has resulted from his bad example, turn about, mend his ways, and do work meet for repentance. Is it not high time that we begin to climb up out of the condition of savagery into which God, doubtless for a wise purpose, permitted the race to fall after the flood? That the permission to eat flesh was not intended either for man's physical benefit or to add to his happiness here on earth is clearly evidenced by the warning which goes with it, and by the fact that the length of human life, which prior to the flood had been nearly a thousand years, immediately afterward diminished to one third of that period, and within a few generations to less than one tenth. Have we not in this permission to eat flesh an illustration of the principle expressed in Ezekiel 20: 25: "Wherefore I gave them also statutes that were not good, and judgments whereby they should not live." The prophet Isaiah gives us a picture of Eden restored, when the life of man shall be again "as the days of a tree," and when "the wolf and the lamb shall feed together, and the lion shall eat straw like the bullock: and dust shall be the serpent's meat. They shall not hurt nor destroy in all my holy mountain."

That flesh eating is a most effectual means of shortening human life we have already shown by incontestable arguments, hence we believe the reason assigned for the permission to eat flesh after the flood is wholly consistent with both science and revelation. To say that every person who eats flesh in so doing commits a crime, would perhaps be going much too far for human responsibility, and certainly to a very large extent would depend upon human enlightenment; but it is not too much to say that to destroy animal life carelessly, needlessly, or for the mere purpose of personal pleasure is sin. No man has a proper appreciation of what life is and what it means, who is not able to look out upon the great world of nature and see in every object, animate and inanimate, an expression of a divine intelligence — not a God confined to some remote corner of the great universe of time and space, but a God actually present, living, and working in every created thing. Surely no such person can engage in the ruthless slaughter of innocent and helpless creatures for mere personal gratification.

To the writer, nothing short of the wholesale massacre of human beings could be more hideous than going out with a shotgun to kill birds, or with a rifle to destroy the graceful antelope or busy rabbits and squirrels, all actively at work performing offices in the economy of nature. Think of the millions of murders which are daily committed in the name of sport, of the vast number of noble, happy creatures which are shot down, either killed outright or maimed and mutilated, to linger out a miserable existence, and finally to die of pain or starvation or to fall into the jaws of some hungry beast.

The slaughter of animals of any kind for mere pleasure ought to be prohibited by law, and it is the writer's firm belief that a fully awakened conscience will recognize animal rights as well as human rights, and certainly there is no right more sacred to either animal or human than the right to live.

Strange it is that civilized nations seem to be, of all classes of human beings, the most apathetic respecting the rights of lower animals. In India, which we regard as a half-civilized country, there are two hundred millions of men, women, and children who look with absolute horror upon the taking of animal life. In Burma there are many millions more, and still more millions in China and Japan. Christendom introduced butcheries into Japan and also into India and Burma. The conscientious Buddhist in either India or China would die before he would taste flesh, to say nothing about taking the life of an animal. A half dozen Englishmen out at sea, after a couple of weeks without food, would begin to look sharply at one another and talk of casting lots, and a few days later would perhaps be found eating one of their number. A like number of Hindus under the same circumstances would die together before suggesting such a thing as the taking of life either human or animal. We have something yet to learn from races that have departed less far than we have from the principles of primitive purity and simplicity in the physical habits of life. The fact that so-called Christian nations are behind the so-called heathen nations in the estimation which they put upon life as manifested in animals below man in the scale of being, is without doubt one of the greatest obstacles which has stood in the way of the advancement of Christianity in China, Japan, India, Burma, and kindred countries. A missionary who had spent some years in India once stated to the writer that on one occasion, when preaching to a large audience in the streets, a Brahmin who happened to be passing by rushed in among his hearers and shouted at the top of his voice, "That man eats pigs!" With looks of intense contempt and disgust his auditors fled from him as if he had been a leper.

RETRIBUTION IN PREPARATION.

Christianity ought certainly to present before the world a higher type of man, a higher ideal of life, than does any other

religion, and this we are bound to admit it does when considered as a whole, but certain it is that the terrible slaughter of innocents which is carried on in the slaughter-houses of all our great cities, from which streams of blood continually flow, while the cries of the slaughtered beasts ascend to heaven, is a blot upon our civilization, and in a certain sense denies the force of the gospel which came to bring peace on earth. It is certainly to be hoped that the time may soon come when there will be preached, not only in civilized lands, but also in heathen lands, that greater gospel which was sent not to save man alone out of the world, but to save, to rescue, and to redeem the world,—man, animals, plants,—the whole creation, which, groaning under the burden of sin and wrong and perversion and strife and carnage, awaits the dawning of that new day when Eden shall be restored, and the golden age shall have come again, and when man shall love not only his fellow men, but all God's creatures, great and small, in earth, and air, and sea, and when once more there shall arise with each returning dawn one universal hymn of praise, in which all living things shall join.

PHYSIOLOGICAL COMPENSATION.

BY FREDERICK M. ROSSITER, M. D.

THE eternal law of compensation is not less inexorable in the natural than in the spiritual world. It operates with the same precision when a man steals from his own body as when he breaks into his neighbor's house. Nature insists upon equilibrium. The constant balancing and adjusting of the innumerable deviations from the center of gravity that are ever taking place in the organic and the inorganic world are manifestations of the same great principle in accordance with which the bark of the tree grows thicker in winter, while the fur of the animal becomes heavier and warmer. So delicately adjusted is the law of compensation that the flutter of a bird's wing may set in motion the mighty forces of an avalanche ; the disturbance of the function of a tiny cell in the human body may cause disease of the entire system, and finally result in physical ruin and death.

Compensation is nature's bookkeeper, maintaining a strict watch over man's credit and debit columns, and ever seeking to balance the account between his receipts from nature and his expenditures for self. Nature is a strict and conscientious business manager, keeping all accounts, even to the smallest detail, on fleshly tablets. For every draft upon her resources she requires an equivalent. At the end of life, nay, sometimes even before, she presents to every individual a trial-balance for the deeds done in the body.

The lines of Holland,—

> "Life evermore is fed by death,
> In earth, or sea, or sky,
> And that a rose may breathe its breath,
> Something must die,"

are seemingly sad, yet in reality a true and beautiful expression of this law of compensation ; for in nature's plan the death that feeds life is always the death of the lower or the lesser for the sake of the higher or the greater. The rose that lives to "breathe its breath" represents what the mineral world and the atmosphere have lost. The brain cells that are wasted or even destroyed in the birth of a noble thought or a pure emotion have made a happy sacrifice.

There is no finer illustration of physiological compensation than that afforded by a study of the wonderful activities and workings of the cells just mentioned. The millions of microscopic cells that compose the body are grouped in colonies, and each group, or aggregation, of cells forms what is known as an organ. Each organ, then, is a specialization of cells that have banded together in order to do a certain work. The nerve cells produce thought and motion; the cells of the stomach form gastric juice; the liver cells manufacture bile, destroy poisons, and perform other important duties. The cells of the body are not drones, but very active little workers, laboring night and day. A bond of interdependence unites them all, and each strives for the common good. Political and social economists who are struggling to obtain a solution of the labor question might study with profit the division of labor in the human body, and the power that harmonizes and keeps in working order all its functions.

It is by the constant exhaustion, death, and reproduction of these cells that the life and activity of the body are maintained. The brain cells work that we may think. The muscle cells give up energy that we may work, and laugh, and shout. The liver cells sacrifice their lives that the poisons formed in the tissues may be destroyed and carried away.

The total waste in the body during the twenty-four hours amounts to several pounds. This waste, if not eliminated, acts as poison and as an enemy. It is like the ashes and cinders in the furnace; if it is not immediately removed, the vital fires are smothered, the flames of life burn low, and soon the last spark is extinguished. So the kidneys, the lungs, the skin, and other organs are ever at work carrying off the débris, ventilating the flues, and creating a draft, while the blood furnishes a new supply of fuel.

If any one, or more than one, of the organs of elimination is unable to do, or is prevented from doing, its share of this essential work, nature gives greater activity and strength to the others. It is her compensation.

In this way the vigor, energy, and weight are maintained from day to day. Health is simply a condition of equilibrium among all these forces. This equilibrium may be destroyed by overeating, overworking, loss of sleep, undue exposure, worry, or the invasion of some foe from without. In this compensatory effort of nature, ever balancing, ever striving for harmony, adding to this structure, subtracting from that, utilizing one substance, destroying the equivalent of another, — we see an intelligence manifested by cell life that often exceeds that developed by man himself.

The manner in which our bodies are kept warm in winter and cool in summer is another most wonderful illustration of the law of physiological compensation. The heat-regulating mechanism of the vital economy is a thousand times more sensitive than the most delicately constructed thermometer. It is influenced by the smallest fraction of a degree of change in temperature, by an emotion, by a particle of food eaten, or even a sip of water.

Few stop to consider that while they are asleep, or out in the cold, or in a heated room, nature is vigilantly at work regulating the furnaces of the body, now adding fuel, now closing a draft, now sending a little more heat to some distant part, ever seeking to accommodate the system to its existing environment. The fireman in the furnace-room is kept informed every second of the needs of every portion of the human building.

Nature has placed the safety-valve for normal heat in the body at 98.6° Fahrenheit, and she will not vary even one

degree for the greatest extremes of temperature, though it be in Greenland's icy mountains or on the burning sands of the Sahara.

The amount of heat formed in the body depends upon the amount of energy liberated. At every stroke of the hammer the blacksmith is using up energy. Nature compensates this loss by burning more fuel and producing more heat.

Like other physical bodies, our bodies must give off heat when placed in a colder medium. In winter, when one goes out into the cold or takes a cold bath, nature provides the compensation by contracting the cutaneous blood-vessels to prevent the blood from being cooled too much, and by contracting the skin, rendering it more non-conductive to heat and cold. At the same time more heat is produced within the body, and the appetite is increased. If it were not for this physiological action, the system would suffer such a loss of heat when exposed to cold, that life would be in great danger. In summer, just the reverse action takes place. If nature did not regulate bodily heat, we should be spending all our time opening and shutting windows and doors, and changing our clothes, trying to keep comfortable, and even then our efforts would be crowned with but sorry success.

The overhoused and the overfed sit in poorly ventilated rooms, toasting themselves over hot registers and beside hot coils. Their skin becomes weakened and relaxed. They eat quantities of fat meat, thus increasing the heat production, a condition unnecessary in a hot atmosphere. But when they step out into the cold or chilly air, the weak, relaxed skin acts slowly, the heat-adjusting apparatus does not work accurately; compensation follows, whether it be a cold, an attack of bronchitis, or pneumonia. Individuals of this class sit in a draft; they literally "put on airs," and sickness is the result.

The action of the heart is one of the most wonderful devices of the vital economy. Out of it flow the "issues of life." It is a wise provision of nature that we do not have direct control of this organ, for if this were the case, many a heart would cease to beat long before it does.

The heart's action is directly affected by the emotions, by food, water, or other fluids swallowed, by poisons produced within the body or drugs taken from without, by atmospheric pressure, and by disease. In certain forms of disease the heart is so affected by the poisons manufactured and introduced that the valves and the muscular walls become diseased; a structural change takes place within the valves, and organic heart-disease results.

This condition may be brought on by overwork, heavy straining, the use of alcohol, and other excesses. The valves of the heart may thicken, harden, and grow together, and by establishing a partial dam, prevent the blood from making an easy exit; or the valves may become retracted, and their guy-ropes shortened; or the heart may become dilated, thus preventing the complete closing of the valves, so that when the organ contracts, some of the blood flows backward in a direction opposite to that of the normal current. These conditions may become very dangerous, and would soon result in death if nature did not come to the rescue. If the blood is kept back by obstructions, the heart compensates for this, almost perfectly at times, by thickening its walls and making more powerful contractions. If the left side of the heart becomes enlarged and begins to give out, the right side takes the burden of the work, and enlarges, or both sides may increase in size in order to carry on the vital process of pumping blood to all parts of the system. This change in the heart is universally known as compensation. It is

nature's physiological process of making a diseased organ effective, and prolonging life.

If one lung becomes diseased or is destroyed, the other establishes a compensation by becoming larger, and doing the work of both.

By disease, by neglect, by overuse of the eye, or because of some change in the refraction surfaces or a shortening of the eyeball, one becomes far-sighted. It is difficult to see near objects. Nature has at least a partial compensation. There is a little muscle at the outer border of the iris that forms a complete circle about this delicate curtain; this muscle undergoes noticeable enlargement, until it is strong enough to contract the pupil sufficiently to cut off part of the rays of light entering the eye, thus enabling the eye to focus for near objects. If this is not sufficient, some of the little muscles controlling the eyeball may become overdeveloped. In near-sightedness just the opposite condition exists. The pupil must be wide open to permit as much light as possible to enter in order to see far away, consequently the little muscles that open the pupil increase in size, instead of the circular fibers.

If one or more of the special senses are absent or lost, the others, by a hyperacuteness, seek to establish a just compensation. Fanny Crosby and Helen Kellar are notable examples of this thoughtfulness on the part of nature.

A hearty Christmas dinner, a late supper, just one more dish of an appetizing viand, and the digestive organs are overburdened, poisons are produced and absorbed, the delicate, susceptible heat centers are disturbed, a fever results. It is only an unbalanced condition in the production and loss of heat. The fever is a compensation for the dietetic digression. Though it bears in its hand a stinging scourge to remind us of our transgression, it comes to us at the same time as a friend. Nature is just, she is not arbitrary; she has our best interest at heart. She attempts now to compensate for the fever.

The fever is not an unmitigated evil, a foe to be annihilated at once. Twenty-five hundred years ago Hippocrates, the father of medicine, regarded it as a protective process. This view had been lost sight of for centuries, but is now coming into vogue again. The fever is an effort on the part of nature to consume the poison and the dross, hence the vital fires are allowed to burn at times even fiercely. But that the fever may not consume everything, nature again offers compensation by taking away the appetite so that no more fuel can be added; by increasing the thirst for water to aid in quenching the consuming fires; by taking away the strength, and putting the patient to bed and at rest; by taking away even the desire to talk and visit: for every movement or exertion increases the fires. Nature is unrelenting, yet she is merciful. She afflicts, but at the same time she works night and day, with all her restorative powers, to bring back the harmony and unity destroyed by physical sins.

Pain is to the body what the violated conscience is to the soul. It is "nature's kind harbinger of mischief." It is one of nature's sign-boards of danger, warning us to flee from the "wrath to come." Pain "is a fruit that, unsuspected, ripens within the flower of the pleasure which concealed it." Only by means of the special senses do we experience either pleasure or pain, and every sense that may conduce to our pleasure has an equal penalty attached to its abuse. The person who regards the senses as servants and treats them wholesomely will be compensated for his moderation by enjoyment and pleasure; but if he becomes a servant to his senses, all nature's laws are outraged, and his senses

turn upon him and become his tormentors.

Pain is a blessing in disguise. It is not an unmixed evil, though it be a penalty for physical transgression. Overindulgence in the pleasures of the table, sitting long at the wine cup, and neglecting exercise are pleasures that must bow with humble submission to the torturing pains of gout, rheumatism, neuralgia, headache. The glutton must pay for his intemperance by suffering the excruciating protests of an abused stomach. It would, indeed, be a great boon to many a gastronomic sinner if he had a sensitive stomach, for those who suffer pain after taking food, if they rightly interpret pain, are less likely to make digressions in diet.

Pain is not only a dispensation, but, if heeded, a compensation. Every child is better off for wise correcting; so pain may be taken as nature's "loving correction." Before gold can be purified, all the dross must be consumed: the most beautiful characters are those that have been refined by suffering. It was said of Job, after his many afflictions, "There is none perfect on all the earth like Job."

Sickness and premature death are not "dispensations of providence," but compensations for a misused organism. "Whatsoever a man soweth, that shall he also reap," is one of the immutable laws of nature. The reaping is generally in excess of the sowing, even fifty or a hundredfold. Every misuse of a normal physiological function has a proportionate penalty attached. The penalty must be paid, whether in lowered vitality, enfeebled constitution, diseased organs, chronic suffering, loss of intellect, gloom, discouragement, despondency, premature decay, or an untimely death.

COMPENSATION.

O THE compensating springs! O the balance-wheels of life,
Hidden away in the workings under the seeming strife!
Slowing the fret and the friction, weighing the whirl and the force,
Evolving the truest power from each unconscious source.

Even our present way is known to ourselves alone,
Height and abyss and torrent, flower and thorn and stone;
But we gaze on another's path as a far-off mountain scene,
Scanning the outlined hills, but never the vales between.

The easy path in the lowland hath little of grand or new,
But a toilsome ascent leads on to a wide and glorious view;
Peopled and warm is the valley, lonely and chill the height,
But the peak that is nearer the storm-cloud is nearer the stars of light.

Who would dare the choice, *neither* or *both* to know,
The finest quiver of joy or the agony thrill of woe?
Never the exquisite pain, then never the exquisite bliss,
For the heart that is dull to that can never be strung to this.

Then hush! O, hush! for the Father knows what thou knowest not,
The need and the thorn and the shadow linked with the fairest lot;
Knows the wisest exemption from many an unseen snare,
Knows what will keep thee nearest, knows what thou couldst not bear.

— *Frances R. Havergal.*

INTRODUCTION. — Carlyle has said: "The healthy know not of their health, but only the sick." By the painful knowledge of disease and suffering that burdens every class of society, — a knowledge of physical, mental, moral, and spiritual disease, — we are admonished that the whole world is sick. From every city, from every village, from every community, there is coming up the cry, "Who can tell us how to be well?"

And yet there is a sense in which multitudes of the sick know not of their sickness. Not long ago, a sallow, dyspeptic-looking woman stopped at a counter where GOOD HEALTH was exposed for sale, and picking up a copy, began turning the pages. Presently she threw it down in a pet, exclaiming: "Well, it seems from that magazine that you can't eat a thing, — no ice-cream, no roast beef, no coffee, no doughnuts, no tea. Why, I wouldn't read that stuff for anything. I'm blue enough now, just looking at it. For my part, I shouldn't think life was worth living if I couldn't eat what I wanted to."

That woman showed in every feature and by every motion that she was nervous, irritable, worn out. But she did not know that she was sick, sick morally as well as physically, and sick both morally and physically, no doubt, because of her unconscious transgression of the laws of physical righteousness.

False, even malicious, ideas of the commonest and most fundamental principles of healthful living are so constantly disseminated in "society" and by society publications that a faithful and tireless voice is needed everywhere to proclaim the truth.

Very recently a publication of some attractiveness, and claiming to be an authority on matters gastronomic, contained the following "editorial note": —

"A writer in GOOD HEALTH, decrying tight lacing, asks if 'anybody supposes that the human figure, male or female, can be made more beautiful or shapely by artificial means than the Great Master himself has made it?'

"Well, yes, to be frank, we do. When we compare the average American girl with the dark-eyed maiden of the forest, for instance, we are quite positive of the fact. We do not question the desirability, on the score of health, of permitting the human figure plenty of freedom and an avoidance of corsets, and belts, and pads;

but when the waddling daughter of the Ogohellies tries to compete in shapeliness with the trim scions of the pale faces, 'she ain't in it.'"

Evidently the writer of the foregoing is unacquainted with most civilized and uncivilized maidens. His picture of the uncivilized girl is that of some poor old Indian squaw trudging along through the forest with a huge load of household furniture, cooking utensils, and a papoose on her back, while he sees the civilized girl with a pretty face and displaying a lot of millinery and dress-making goods, like a lay figure in a show-case.

Many and many a young woman or girl, upon reading a paragraph like the one quoted,—which is only a sample of a style and quality all too common, — would laugh or smile and unthinkingly give it credence without once seriously considering whether it were true or not.

The Home School of Health has been established to aid in every possible way those who are really interested in learning and in teaching others how to live rationally, sensibly, and healthfully. It is our purpose to give what practical suggestions we can upon the fundamental principles of healthful living, to help mothers and fathers and children in the forming and conducting of health clubs by themselves or with the co-operation of friends and neighbors who may be interested in learning the why and the how of health.

For the benefit of those who may wish to have regular meetings and a systematic plan of study, it has been arranged to prepare a series of suggestive questions and answers, based not alone upon the lessons in the School of Health, but referring also to general articles appearing from time to time in the magazine. The questions will appear in one number and the answers in the next. There will be ten special questions each month, to which subscribers are requested to send answers. The best answer to each of these ten questions will be published in the Home School of Health, with the name of the correspondent sending it. Answers to the questions in any number must be sent personally to the secretary of the Home School of Health, and must reach this office by the 25th of the month; that is, answers to questions in the January number must reach the secretary by the 25th of January, if they are to be considered. The best answers to the January questions will appear in the March number of GOOD HEALTH.

MARY HENRY ROSSITER, *Sec.*

INCORRECT ATTITUDES—STANDING

The principle of correct standing is almost fundamental in physical well-being. The habitual attitudes of any individual are as truly a mold, determining the shape of that person, as is the bottle for the cucumber made to grow inside of it.

Very few adults habitually stand in the right position. It is almost impossible to find a grown man or woman who has not some physical deformity or peculiarity directly resulting from wrong attitudes. But any deviation from the plan of nature invariably causes weakness and disease.

In the body of the average man or woman the internal organs are usually crowded and displaced to a greater or less degree by the weak and faulty position in which the trunk is habitually held. This is especially true of young people engaged

in occupations that necessitate the maintenance of a nearly uniform attitude for some hours daily. The bones of the young, being flexible, easily yield to a continuous strain placed upon them. The same is still more true of other structures. The neglect to recognize this fundamental principle of health and vigor is so nearly universal that among people of sedentary habits very few are free from deformities of some kind.

FIG. 1.

The body may be thrown out of poise temporarily, or placed for a short time in such a position that an unusual strain is brought to bear upon particular structures, without injury; but when this strain becomes habitual, lasting for hours at a time, or when it is many times repeated each day, even for a brief period, distortion, displacement, or some other evil is sure to result.

Spinal curvature is among the most common deformities caused by incorrect attitudes. Posterior curvature of the spine, manifested by round shoulders, a flat or hollow chest, forward carriage of the head, and an unnatural straightness of the back, is by far the most common form of spinal curvature, and though usually neglected, is productive of great mischief. Lateral curvature of the spine can be hidden by the devices of the tailor or the dressmaker, unless very extreme, but posterior curvature is so evident from the signs mentioned, that it can not be concealed. This form of curvature is shown in Fig. 1, while the normal form, in the correct standing position, is shown in Fig. 2. The attitude represented in Fig. 1 results from a relaxation of the muscles, the weight of the upper part of the body causing the curvature. If the muscles of the back are relaxed, the spine naturally falls backward of its own weight. The weight of the shoulders and the head falls vertically upon the spine, and falling upon the curved spine, the effect of that weight, if the muscles that hold the spine straight are relaxed, will bend the spine, and the muscles that are not relaxed will hold the spine in that position, just as the string of the bow holds the bow bent. That is what makes the flat chest. The trouble is not in the chest, but in the spine. The flatness of the chest is wholly the result of a posterior curvature of the spine, and this condition is due to the relaxation of the muscles of the trunk, allowing the spine to bend backward.

FIG. 2.

A flat, hollow chest means compressed lungs, which are never free to expand to their fullest extent, and hence are more liable to consumption and other diseases

than lungs that are well developed, and have full play in their movements. Round shoulders resulting from posterior curvature of the upper part of the spine are always connected with a flat or hollow chest, and signify not only compressed lungs, but also a depressed stomach. It is common to find the stomach displaced anywhere from three to six inches, as a result of this physical deformity.

The result of this interference with the normal relations of the vital organs is a more or less serious derangement of the general health. The compressed lungs, not being able to expand to their fullest extent, are greatly hampered in their activity. Oxygen is not received in sufficient amount, the blood becomes impure, the tissues are clogged by the overaccumulation of tissue poisons, appetite and digestion fail, the blood becomes impoverished, the complexion dingy, and the whole body is weakened, the growth and development of physical and mental activity are interfered with, and a morbid bias is given to the whole life of the individual.

It is easy to see, then, that the very first requirement in proper physical development is correct position.

In an erect position, the weight of the body is poised over the arch of the foot, and not over the heel. When one stands in the position illustrated by Fig. 1, the weight of the body rests directly upon the heels, so that one can raise his toes easily. If he stands in the position illustrated by Fig. 2, he can not raise his toes; in order to raise the toes, he must stand back over the heels.

When one stands relaxed, balanced over the heel, the line of gravity falls through the tibia, and continues down through the solid bone of the heel; but when one stands correctly, the weight falls over the arch of the foot, the direct line of gravity coming over the ball of the foot, so that the weight of the body rests between the heels and the toes.

The poise of the body in standing should be such that a line drawn just in front of the ear will fall in front of the shoulders, and at the balls of the toes. If you wish to test your position, you can do so by rising on your toes. Heel-standing is always tiresome. It is a relaxed position, the position usually assumed by a person who is tired out. When one is strong and vigorous, he naturally takes the correct position.

This correct standing poise — I wish to emphasize the fact — is not a theoretical position, it is a natural one. The position which I have described, in which a line drawn just in front of the ear and just in front of the shoulders strikes the balls of the feet, is not a position that has been mathematically figured out, or a position that conforms to some one's notion, but it is a natural position, — the position found in persons who have grown up naturally and who have had an opportunity to develop their figures correctly.

To assume the correct standing position the muscles of the legs must be made firm or rigid, and the hips set well back. Observe that in Fig. 2 the shoulders are forward, while in Fig. 1 they project backward beyond the hips. It is impossible to hold the body in a proper poise when the shoulders are even with or behind the hips, because the head must be thrown forward and the chest flattened, in order to distribute the weight of the body in such a way as to preserve the equilibrium. There must of course be an equal mass of the body on either side of the line which marks the center of gravity.

With the hips held well back, the chest can be thrown up strongly in front, and held as shown in Fig. 2. The abdomen should be at the same time well drawn in, so as to overcome the tendency to abnormal protrusion which is observable in the

majority of persons who have never cultivated a correct poise.

The head should be held well back upon the shoulders, the chin slightly drawn in, and the shoulders braced well back, not elevated, and not held in a strained position. The arms should hang easily at the sides.

After learning and adopting the correct attitude, it is necessary to keep it, and not to allow the body to resume a relaxed position. If one stands with the muscles energized, he is almost certain to stand correctly, provided his muscles have been equally developed; but if he allows the muscles to become relaxed, then the skeleton and the limbs by their own weight draw the body out of shape.

Those who are accustomed to the relaxed position will find it hard to begin to change. It is necessary to persevere faithfully, with "eternal vigilance," for a time. But the habit of correct standing once formed, the gain in comfort, health, and grace is ample reward for the labor of overcoming the deformity.

J. H. KELLOGG, M. D.

WOMAN'S DRESS AND THE DEATH-RATE.

That the human race is fast degenerating and becoming diseased, deformed, demented, and insane is a fact known not only to the medical profession but now being generally accepted by the laity. The question at once arises, Why this marked and rapid deterioration? Many causes might be given, and doubtless there are many factors that enter into the production of such conditions as now exist. Chief among them, in our opinion, is the pernicious style of dress worn by the women of the present day. It is our object in these studies to present the subject of dress from a scientific standpoint, and in the light of modern knowledge and understanding. Until recent years the mere mention of a reform in dress was repulsive, and suggested a departure from all that is beautiful and desirable, but at the present day the field is open for any

advancement that may be suggested along this line.

Perhaps a few observations with reference to conditions that now exist may open the subject, and throw light upon much that now seems obscure. It is well known that there is in this, as well as in other countries, an enormous decrease in the birth-rate, which is a much more alarming symptom than an increased death-rate, as it indicates a radical and constitutional fault of some kind, which threatens the very existence of the race.

As we look about us, and see the weak, sickly young women, with deformities and displacements of every sort, can we hope for a strong, vigorous generation as their offspring? A very large proportion of infants are now reared on artificial foods of various kinds, which is another evidence of weakness and degeneracy among mothers.

These facts show very clearly that there is a rapid decline in the physical force, particularly of women; and whatever affects the mothers of our race must affect very materially the whole population.

There seems to be among women a

fatal apathy or carelessness with regard to the form that God has given them and that he made in his own image. They have come to regard the fashionable figure as created by the "great French artists" and portrayed in the fashion magazines as representing not only the "proper" form, the "stylish" figure, but as even more beautiful and artistic than that designed by the Creator. They admire the classical figure in statuary, but not in their own daughters.

THE VENUS DE MILO.

In ancient statuary can be traced the successive steps of degeneracy in the human form, and also some tokens of a higher development among the ancients; showing that growth and progress are the result of activity and freedom, while deterioration naturally follows inertia and restriction.

A WOMAN OF FASHON.

Take the sculptured figure of some female model,— the Venus de Milo for example,— and we are forcibly impressed with the small head and eyes and the superior development of the waist, hands, and feet as compared with those of nineteenth century women. As woman has come to the front intellectually, there has been a decided development of the head, but, sad to say, a marked retrogression in the strength and natural proportions of the rest of the body. The waist of the woman of the present day is nothing more or less than a deformity caused by most pernicious and health-destroying habits of dress.

With the small waist come also weak muscles, prolapsed organs, and various ailments that result from a disturbance of the normal relations of these organs. It is our purpose in the School of Health to show that the natural dress is the healthful dress, that it is also the beautiful and the artistic dress.

The lessons during this course will consist of —

1. A study of the human form and the position and relation of the various organs.
2. The evils of the conventional dress.
3. Cultivated deformities and how to correct them.
4. Beauty in relation to dress.
5. How to clothe the body healthfully and artistically.

ABBIE WINEGAR, M. D.

CLOTHING THE LIMBS IN WINTER.

It is surprising that it is necessary to emphasize the fact that arms and legs need warm clothing in winter even more than the trunk of the body. But it is a common sight to see women upon the street with their shoulders well protected by heavy wraps and furs, while their arms bear evidence of much lighter covering. Every woman's physician knows that not one woman in a hundred properly clothes the lower extremities in winter. Even little children, although not often subjected to the inhumanity of absolutely bare arms and legs in cold weather, are to a greater

or less degree victims of this fatal carelessness and neglect.

A distinguished physician of Paris, who died a few years ago, declared, "I believe that during the twenty years that I have practised my profession in this city, twenty thousand children have been carried to the cemeteries, a sacrifice to the absurd custom of exposing the arms naked." On this the editor of a medical paper remarks, "Put the bulb of a thermometer in the baby's mouth; the mercury rises to above 98°. Now carry the same to its little hand; if the arm be bare and the evening cool, the mercury will sink to 50°. Of course all the blood that flows through these arms must fall from 10° to 40° below the temperature of the heart. Need I say that when these currents of blood flow back into the chest, the child's vitality must be more or less compromised? And need I add that we ought not to be surprised at the frequently recurring affections of the tongue, throat, or stomach? I have seen more than one child with habitual cough and hoarseness, choking with mucus, entirely and permanently relieved by simply keeping the hands and feet warm. Every observing and progressive physician has daily opportunities of witnessing the same cure."

All women, for themselves, and mothers for their children also, should take heed to this matter. The limbs, if anything, should be more warmly clothed than the rest of the body, since they are farther away from the heart supply.

A heavy suit of underwear, linen, cotton, silk, or wool, should be worn next the skin, and over this another suit of wool. In addition to these two combination suits a light-weight skirt is all that is needed besides the dress. The close-fitting clothing next to the skin is much warmer than several heavy skirts. Those who are troubled with cold hands and feet would be benefited by trying this experiment.

The clothing of the feet is another very important matter in winter. Thin-soled, light-weight kid shoes are certainly not warm enough for cold weather. The shoes for women and girls should be heavy and solid, and thick enough to prevent moisture or coldness from penetrating through them. Every woman who values health as her dearest treasure should wear heavy, warm shoes in winter.

The wearing of long dresses and skirts in the snow and rain is very much to be condemned from the standpoint of health and neatness. Many women have said that they felt clumsy and awkward when putting on the long dresses after wearing the bicycle or rainy-day skirt. In snowy winter weather, the long dresses gather dampness and snow, striking against the ankles in walking or coming in contact with the legs in sitting, and certainly leading to difficulties that might be avoided.

Many women are invalids to-day who would be well if proper clothing were worn to keep the temperature equal in all parts of the body.

LAURETTA KRESS, M. D.

THE IMPORTANCE OF SCIENTIFIC COOKERY.

That the subject of proper cooking will soon receive much more attention than it has in the past is evident from the interest that is being manifested in it everywhere. Dr. Lauder Brunton, an eminent English medical authority, speaks in the following striking manner: "Cookery has, I think, a perfect right to be ranked with music,

painting, sculpture, and architecture, as one of the fine arts. The difference between cookery and music or painting is, that while the objects that give rise to sight and sound remain outside the body, we are obliged to swallow the substances that excite sensations in our nerves of taste."

While music from the piano stimulates the nerves of hearing, the piano remains outside the body; while a beautiful picture stimulates the nerves of sight, the picture still remains upon the wall; but the holiday turkey that stimulates the nerves of taste in precisely the same way that the other agencies stimulate sight and hearing, unfortunately for the poor human victim, has to be taken inside, where, by its waste products, thousands of delicate cells are poisoned and the foundation is laid for many of the ills that flesh is heir to.

There is a moral as well as an esthetic aspect of the cookery question that must not be overlooked. One author speaks of it in this way: "The tables of our American people are generally prepared in a manner to make drunkards. By the use of tea and coffee an appetite is formed for tobacco, and this encourages the appetite for liquors. The young in general are governed by impulse, and are slaves to appetite. In the glutton, the tobacco devotee, the wine-bibber, and the inebriate we see the evil results of defective education." What Dr. Brunton says on this subject, echoes the same sentiment: "Some may think that, in speaking of cookery as a moral agent, I am greatly exaggerating its power; and they may regard it as folly if I go still further, and say that cookery is not only a powerful moral agent in regard to individuals, but may be of great service in regenerating a nation. Yet, in saying this, I believe I am speaking quite within bounds, and I believe that schools of cookery for the wives of working men in this country will do more to abolish drinking habits than any number of teetotal societies."

Suppose you go to visit a friend and find him taking a wet pack. He is lying in bed, wrapped up in blankets so that he can not move hand or foot; a fly settles on his nose, and he begins making faces to try to remove it. You do not like to see him make faces, and wish him to stop. Which is the more rational method of making him stop? Is it to exhort him to summon all his fortitude to keep his face still, notwithstanding the annoyance, or is it better for you to drive away the fly? No doubt it would be an excellent moral training for him to use his self-control and keep his countenance placid notwithstanding the irritation, but the simpler and more effective method is to drive away the fly. Moreover, in nine cases out of ten, his power of self-control would be insufficient. This is exactly what occurs with persons who have a strong desire for intoxicating liquors. The words of the wise man are, "Where no wood is, there the fire goeth out." So long as we are kindling in our children the fires of intemperance by impoverished, irritating, and stimulating food, how can we ask God to preserve them from the awful curse of the drink habit, when God plainly says, "Whatsoever a man soweth, that shall he also reap;" "he that soweth to the flesh shall of the flesh reap corruption," and prefaces this principle by the words, "Be not deceived, God is not mocked"? Are not parents mocking God when they put before their children the foods that must physiologically create a demand in them for strong drink? When public sentiment becomes deeply stirred on this subject, then the art of cooking will not be looked upon as one that can be acquired incidentally or trusted to ignorant or inefficient persons, but will be taught as an essential part of every young woman's education. DAVID PAULSON, M. D.

THE MISSION OF COOKERY.

The true purpose of cooking should be such a preparation of food materials as will so change their constituent elements as to make them more digestible than they would be in a raw state. Indeed, good cookery is a partial preliminary digestion of the food elements; at the same time it breaks up the food by dissolving the soluble portions so that it is the more readily acted upon by the digestive fluids. In other words, good cookery is such a preparation of food as will increase its alimentary value. Another object to be attained is the development of its natural flavors and a commingling of suitable materials so as to make food appetizing.

Cookery is one of the oldest of household arts. In primitive days it is probable that the processes by which food was prepared were very simple, but with the later ages of luxurious tendencies and voluptuous living, such a multitude of the cook's devices was called into requisition to provide new and pleasing dishes that the primal purpose of the art was largely overlooked, and the whole aim centered upon producing something to cater to the sense of taste. There was much rivalry among cooks, and even those of different nations vied with one another in efforts to concoct marvelous and unheard-of dainties.

With such a gastronomic heredity, it is not difficult to understand why so many of the recipes in common use at the present day are simply a mixture of ingredients to please the palate without regard to dietetic value.

When taste alone is made the criterion, it is so easy to disguise the results of careless and improper preparation of food by the use of flavors and condiments, that poor cookery has come to be quite as frequently the rule as the exception. The resulting evils are almost innumerable. No one thing over which we have control exerts so marked an influence upon physical prosperity as the food we eat. Improperly prepared food makes poor blood, poor brains, poor muscles, and vitiates the integrity of the entire system. Much of the disease, many of the sins and misdeeds, and much of the unhappiness of the world may be rightfully attributed to poor food and bad cookery.

Phillips Brooks used to say that "health is salvation," and Bishop Foster declares that "to care for men's souls most effectively, we must care for their bodies also." To care for their bodies necessitates a first care for the building material from which these bodies are made, in the provision of proper food and its healthful preparation. The proper preparation of food for digestion is not merely a matter of having at "one's fingers' ends" the composition of numberless dishes.

The following of recipes and the mechanical mixture of ingredients has largely constituted the cook's art in times past, but in these days of progress it is becoming evident that success in cookery, as in other arts, depends upon attention to the scientific principles involved, and that a knowledge of the composition of foods, their digestibility, their nutritive values, their adaptation to individual use under varying conditions, the results of certain combinations, the action of heat upon different materials, the why and the wherefore of each operation employed in cooking, is indispensable for the successful production of wholesome articles of food.

In this department during the coming year will be published each month a series of typical recipes, by means of which it is proposed to illustrate in a practical way the principles and methods of scientific cookery. All these recipes will be based upon the results of long and care-

fully analyzed experience. Untried combinations and mixtures will not be placed before the public in these columns, but only such preparations as have stood the test of thorough trial, for which an unusual opportunity is afforded in connection with the School of Cookery of the Battle Creek Sanitarium; that is to say, all of these dishes are first tested by the hundred or more pupils of this school, and if they stand the test of this severe criticism, they are then allowed to appear upon the menu of the guests in the great dining-room of the Battle Creek Sanitarium, where they are subjected to the ordeal of criticism by hundreds of persons of refined and cultivated taste.

This final test decides whether the new dish in question has all the qualities of wholesomeness, palatableness, and daintiness in preparation necessary to qualify it to appear upon the roll of honor as a successful means of winning perverted appetites back to the channel of healthful simplicity.

ELLA EATON KELLOGG.

Seasonable Menus

New Year's Dinner

Vegetable Bouillon
Wafers
Sunflower Mayonnaise Salad
Nut Croquettes with Border of Mashed Potato.
Mashed Squash
Celery Browned Granose Biscuit Canned Peas
Raisin Bread Peanut Pound Cake
Granola with Cream or Fruit Juice
Stewed Fruit Nuts Fresh Fruit

Breakfast

Bananas with Graham Crisps
Browned Corn-meal Mush
Cranberry-Apple Toast
Boiled Chestnuts
Browned Granose Biscuit
Caramel-Cereal

Dinner

Swiss Potato Soup
Stewed Lima Beans
Parsnips with Potato
Sliced Tomalene
Granose Flakes with Cream or Grape-Juice
Beaten Biscuit Graham Bread
Prune Whip

Cranberry Apple Toast.—Stew fresh, nicely flavored apples in a small quantity of water until tender. Rub through a colander, and add one third as much cranberry pulp as apple. Sweeten to taste, and serve as dressing on slices of zwieback moistened with hot cream, hot water, or hot malted nuts.

Swiss Potato Soup.—Pare and cut up into small pieces enough white turnips to fill a pint cup, and cook in a small quantity of water. When tender, add three pints of sliced potatoes, and let them boil together until of the consistency of mush. Add hot water if it has boiled away so that there is not sufficient to cook the po-

tatoes. When done, drain, rub through a colander, add a pint and a half of milk and a cup of thin cream, salt if desired, and if too thick, a little more milk or a sufficient quantity of hot water to make it of the proper consistency. This should be sufficient for two and a half quarts of soup.

Parsnip with Potato.— Wash, scrape, and slice enough parsnips to make two and a half quarts. Pare and slice enough potatoes to make one pint. Cook together in a small quantity of water. When tender, mash smooth, add salt, the yolks of two eggs well beaten, and a cup of rich milk. Beat well together, put into an earthen or china dish, and brown lightly in the oven.

Prune Whip.— Sift through a colander some stewed sweet California prunes which have been thoroughly drained from juice, and from which the stones have been removed. Beat the whites of three eggs to a stiff froth, and add two cups of the sifted prunes; beat all together thoroughly; turn into a pudding-dish, and brown in the oven fifteen minutes. Serve cold, with a little cream or custard for dressing. Almond sauce also makes an excellent dressing.

Raisin Bread.— Dissolve one-fourth cake of compressed yeast in a pint of sterilized milk ; 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 proportions, 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, allow it to become light again, and bake.

Sunflower Mayonnaise.—Arrange the fresh, crisp leaves of lettuce around a salad plate; make a sunflower in the center, of the grated whites and yolks of hard-boiled eggs and the nut oil dressing given below.

We are indebted to Miss Evora Bucknum for the three following recipes : —

Nut Oil Salad-Dressing.—Four eggs, one-half cup of oil, one-half cup of lemon-juice, one well-rounded teaspoonful of salt. Beat all together in the inner cup of a double boiler; put into the outer boiler with the water just warm; stir over the fire constantly until thickened, taking care not to allow it to heat so rapidly as to curdle it. As soon as it begins to thicken, remove from the fire, and place immediately in a dish of cold water, stirring it until cool. Strain before serving. This can be used where any sour salad-dressing is desired.

Vegetable Bouillon.—Two and one-half pints of bran, pressed down; two and one-half quarts of boiling water. Let this simmer together for two hours or more; strain; add one pint of strained tomato, one bunch of celery, one large onion, and one-fourth teaspoonful of powdered mint in a muslin bag. Allow it to simmer together for one-half or one hour, strain, salt to taste, reheat, and serve. This should make two and one-half quarts of soup.

Nut Croquettes.—Chop one pound of nuttose moderately fine; add one teaspoonful of celery salt, two teaspoonfuls of finely minced onion, and two teaspoonfuls of chopped parsley.

Sauce.—Heat four large tablespoonfuls of nut oil without scorching; stir into this one cup of pastry flour, and add one quart of boiling water, stirring until smooth; add another cup of dry flour, stirring it in carefully. Remove from the fire; add one teaspoonful of salt, one teaspoonful of celery salt, and two eggs. Stir into this the above mixture of nuttose and allow it to stand until cold. Shape

into rolls about three inches long and one inch in diameter; roll them in fine zwieback crumbs, dip into beaten egg, and roll in crumbs again. Bake in a moderate oven for twenty minutes, or until done.

Peanut Pound Cake.—Three eggs, a scant cup of granulated sugar, one tablespoonful of lemon-juice, one tablespoonful of ice-water, one cup of sifted nut meal, one-half cup of sliced citron, if desired, one-half to two-thirds cup of pastry flour, sifted once before measuring, salt. Have the ingredients as nearly ice-cold as possible. Sift the sugar; sift the flour twice, and leave it in the sifter. Beat the yolks of three eggs, adding sugar gradually. When stiff, add part of the water and more sugar. Beat, add more water, sugar, and half the lemon-juice, until all the sugar is in. Stir into this mixture half the nut meal, a good pinch of salt, and the citron. Beat the whites of the eggs to a moderately stiff froth, with a pinch of salt. Add the remainder of the lemon-juice, and beat until dry and feathery. Slide the beaten whites on to the yolk mixture, sprinkle part of the nut meal over them, sift on a little flour, and chop in lightly. Add more meal and flour; chop; continue until all the flour is in. Take care not to mix too much. Put into a pan at once, and bake slowly in an oven that bakes well from the bottom. Handle carefully when taking from the oven. If a gas or gasoline oven is used, the fire may be turned off, and the cake allowed to cool in the oven.

THE HYGIENIC USE OF THE BATH.

Rational medicine, as Dr. Horatio C. Wood, of Philadelphia, has so clearly pointed out, consists essentially in the application of prophylactic measures; that is, the employment of means capable of maintaining a normal individual in a state of health. It may be suggested as a corollary from this proposition, that by the employment of those physiological measures that are most effective in the restoration of a sick person to health, the individual may be maintained in good health.

However true this principle may be with reference to other therapeutic means, experience has shown most positively that the cold bath is one of the most powerful tonics and most efficient of restoratives, and at the same time one of the most valuable of all known prophylactic or hygienic measures. The cold bath acts powerfully upon the sympathetic nervous system, that great regulator of nutrition. It likewise affords a means of gymnastics for the vasomotor system of nerves, and develops by exercise the contractile activity of the small blood-vessels. Cold water, in common parlance, hardens the skin; technically, we should say, it in creases the vital resistance of the skin. If habitually employed, the cold bath protects against taking cold, not by closing the pores, but by increasing the vital resistance of the body in general, and especially by increasing the ability of the skin to reheat itself after having been chilled by contact with agents capable of abstracting heat.

Through the influence of the cold bath upon the sympathetic nervous system, all the processes of nutrition and assimilation are quickened. The amount of hydrochloric acid produced by the glands of the stomach is increased, as the result of which appetite and digestion are improved, and the stomach, being provided

with a better quality of gastric juice, is better prepared to protect itself against injury from intruding microbes. Modern investigations have shown that typhoid fever germs, cholera germs, and, in fact, all varieties of germs succumb to the attack of a thoroughly healthy gastric juice; hence the daily cold bath, by maintaining a sound digestion, as well as by increasing the general vital resistance of the body, serves as a most valuable protection against infectious disorders, even against disorders that are communicated by virulent living organisms of various sorts.

One of the most interesting effects of the cold bath is the increased number of blood-corpuscles found in the surface vessels after the establishment of the reaction that follows these cold applications. The blood is the means by which oxygen is conveyed to the tissues and carbonic acid gas is conveyed to the lungs and discharged from the body. Certain of the blood cells are also useful in destroying germs that may find their way into the blood-vessels, and in removing various sorts of dead and useless particles.

It is thus apparent that the number of corpuscles contained in the blood is a matter of vital importance in relation to the degree of vital resistance or the ability to maintain health under adverse circumstances or against the destructive influence of disease-producing causes.

The total area of the blood cells contained in the body of an average man is 3,100 square yards. It has been shown by Winternitz and others that by the application of a cold bath the number of blood cells may be increased thirty per cent. and even fifty per cent. This means an increase of from one thousand to fifteen hundred square yards of the blood cells, and a proportionate increase of the surface available for use in conveying oxygen to the tissues and removing carbonic acid gas. It means also an increase of thousands of millions in the number of active protective cells scattered through the circulation. This effect of cold upon the blood is one of its most valuable and important uses, and easily accounts for the freshness of color, the clearness of complexion, and the general buoyancy and vigor that result from the habitual employment of the cold bath.

In the application of cold water as a hygienic means, care must be taken to adapt both the temperature and the mode of application to the age, and also to some extent to the sex, as well as to the temperament and individual susceptibilities.

Children under seven years of age do not well bear the application of very cold water. The douche in all forms should be avoided; the sponge or immersion bath alone should be employed, and the temperature should never be very low. A temperature of from 70° to 80° will produce sufficiently strong impressions to develop good reaction in children under seven years of age. After seven years of age, as the child advances in years, the temperature may be lowered somewhat, and more vigorous applications may be made, such as the affusion and the light douche, with water from 60° to 70° in temperature. At fourteen or fifteen, more vigorous tonic measures may be adopted.

The daily cool douche, or affusion, is an excellent means of curing urinary incontinence in children, a disease indicating weakness of the inhibitory centers, a condition that later may develop serious nervous disorders.

The daily cold bath is an important aid to general development in growing children. It encourages the development of muscular vigor and activity and nerve-tone. It prevents the development of neurotic conditions in young persons just

entering upon manhood and womanhood, prevents so-called growing pains, and promotes vigorous and normal development.

Adults must adapt the form of the bath to their conditions of life, their special predispositions and susceptibilities.

Sedentary persons especially need the benefit of the cold bath. Such persons may advantageously precede the cold douche by a hot bath for three or four minutes. The Finns and the Laps, who for a considerable portion of the year are confined indoors and have little or no exercise, have been intuitively led to seek a compensation for the lack of exercise by the sweating bath, followed by a vigorous cold application. Every house in Finland has its sweat-room attached, in which steam is produced by pouring water upon heated stones. After remaining in the sweat-house until sweltering with heat and dripping with perspiration, the bather rushes out and rolls in the snow, thus producing a most vigorous reaction.

The sweating bath, followed by a cold application, is by no means, however, a perfect substitute for exercise, but it does to a very considerable degree relieve the system of excrementitious wastes, which accumulate within the body when a sufficient amount of exercise is not habitually taken, thus increasing oxidation, and renewing the tissues by stimulating tissue changes.

Adults who are predisposed to rheumatism, gout, gravel, migraine, Bright's disease, neurasthenia, and other maladies which for the most part are the result of the retention within the body of the products of nitrogenous wastes, will be greatly benefited by the employment of a cold bath daily, but it must be carefully administered. Very cold water must be avoided, and the cold application should be preceded by the hot bath for three or four minutes.

The daily cold bath is especially useful for civilized women, because of the deteriorating influences of their artificial life. The harmful customs of civilization, rather than nature, have made woman "a weaker vessel." The cold bath gives nerve-tone, combats nervous weakness of various sorts, is a most excellent prophylactic against hysteria, and to a very considerable degree combats the unwholesome tendency of the indoor and sedentary life to which most women are subjected in civilized lands.

Old age involves the liability to the existence of arterio-sclerosis and allied forms of degeneration, either in an incipient or an advanced stage. The skin is inactive, rigid, and comparatively bloodless, and the heat-making powers of the body are greatly diminished, so that the thermic as well as the circulatory reaction is likely to be incomplete, thus giving rise to numerous untoward and most distressing symptoms. On this account great extremes in temperature must be avoided. The neutral bath, douches at a temperature of from 75° to 85°, the wet-sheet rub at the same temperatures, and the cool sponge bath or towel friction are the most appropriate measures. Cardiac weakness, empyema, bronchitis, are conditions so likely to be present in aged persons that they must be kept constantly in mind in the treatment of the old.

With a change of season, the form of the bath must also sometimes be changed or modified. The cold bath affords one of the best means for reviving a person who has been exhausted by heat, and especially by heat accompanied by profuse sweating. The hot sponge bath taken in the morning is sometimes preferable in very hot weather to the cold bath. As the result of a short hot application, an atonic reaction is produced, which lessens the susceptibility to heat, and enables a person better to endure exposure to a high temperature.

In the winter season, the habitual employment of the cold bath trains the skin to take care of itself, and thus lessens the danger of taking cold or of suffering from pulmonary congestion.

The importance of the daily cold bath is a matter of far greater moment than is generally comprehended. In the opinion of the writer, every public school ought to have connected with it a shower bath, a swimming tank, and a gymnasium, and all children attending the public schools should be required to undergo physical training in the gymnasium, by the systematic employment of gymnastics as well as the swimming and shower baths, under careful medical supervision. By this means the physical development of the young may be greatly encouraged, evil moral tendencies may be combated, and the present rapid deterioration of the race may possibly be stayed. The universal introduction of these measures would result, within a generation, in the production of a much more vigorous race of men and women than now exists.

Precautions.— 1. When fatigued, as the result of loss of sleep or severe muscular exercise, precede a cold application by a hot douche or an immersion bath from three to seven minutes.

2. If but slightly fatigued, substitute a cool tepid sponge or douche for the usual cold bath.

3. A very cold bath should always be short. The cold bath should never be administered when the surface is cold or chilly. The hot bath carried to the point of gentle perspiration is an excellent preparation for a cold application.

4. Avoid frequent hot baths at all seasons, and especially in winter. They are depressing, and lessen vital resistance to cold and other disturbing influences. The best time for a hot bath in cold weather is just before retiring.

J. H. KELLOGG, M. D.

PHYSIOLOGICAL FACTS RELATING TO HEALTH.

The human body, as well as the bodies of all other animals, is composed of minute units called cells. Each one of these cellsis made up of a substancecalled protoplasm, which means "first life." These cells (so small that it requires a microscope to see them) possess life, and are capable of performing many of the functions common to the body of which they form a part; viz., they can digest, absorb, assimilate, excrete, and in the majority of cases reproduce their kind. With the aid of the microscope we are able to study some of these functions; for instance, if we place upon a glass slide some water taken from a stagnant pool, and put this under the lens of the microscope, we can see a small, jelly-like mass that is constantly changing its position and shape. This minute structure is called an ameba. The ameba is the simplest kind of cell with which we are acquainted, and the substance of which it is composed — protoplasm — is considered the basis of life. By close observation and study we shall see some of the different functions which this cell is capable of performing. It has life; it can move about from place to place, can take in food, and throw off materials which it can not appropriate to its own use; and it is also capable of forming other organisms similar in every respect to itself.

The cells of which our bodies are composed, differ in many respects from the ameba, but they are all composed of protoplasm, the only difference being a modification of this substance.

If the animal body be dissected, it will be found to be made up of a variety of organs, some of which are the skin, bones, heart, lungs, liver, stomach, kidneys, muscles, spleen; and on more careful examination with the microscope these organs are found to be made up of tissues of various sorts, such as connective tissue, nerve tissue, epithelial tissue; and these in turn are made up of the minute cells that characterize the tissue of which they form a part.

The relation of these elements of structure to one another in the construction of the body, may be likened to the different materials and the office each one performs

CELLS OF THE SALIVARY GLAND.

in the construction of a building. The bricks are for one purpose, the wood for another, the iron for another, and so on with the different materials employed. So it is with these cells; certain ones form tissues, and these tissues in turn form the various organs of which the body is composed. Each one has its own particular work to perform. As an illustration of this, attention is called to the accompanying cut, which is a very good representation of a thin section of one of the salivary glands, whose function it is to secrete a substance that digests the starchy food. In this organ are small tubes, which are lined with what is called glandular epithelium. It is these cells that secrete the digestive fluid. Between the tubes is to be seen connective tissue, which acts as a supporting structure for the other parts of the gland; and blood-vessels, which permeate all parts of the gland, bringing nourishment and carrying away waste material.

The various other organs are constructed in a similar manner, each one being made up of cells that are capable of performing each its particular functions.

In order that these cellular elements may perform their functions in a proper manner, it is necessary that they continuously receive a supply of pure, fresh blood; for it is from this source that the cells are kept alive. The food we eat, when digested, is absorbed, enters the blood, and by means of this medium is carried to every part of the body. The cells take up from the blood the materials they require, and give off to it the poisonous material which is the result of their activity. From this it will be seen that in order to maintain a condition of health it is necessary that the blood contain the proper kind of nutrition, that it be distributed in proper quantities, and that the waste products of cell activity be removed from the body.

Every part of this complicated mechanism, the human body, when in a state of perfection, works in harmony with every other part, and the result is a healthy body. This is the condition in which man was created, and so long as divine intelligence is permitted to maintain this condition of harmony, disease will have no power over us.

Every one of the myriads of cells that contribute to building the body is controlled by means of the nervous system, and it is through this avenue that the harmony between the different parts of the body is maintained. If by any means this harmony is destroyed, disease is the result, and the extent of the disease will depend upon the extent to which the harmonious workings have been altered.

There are numerous ways in which this harmony can be disturbed; in many cases it is brought about by ignorance.

It is everybody's duty to become familiar, through the study of physiology, with the laws governing his body, and through the study of hygiene to become familiar with the effect of different ways of living upon health. This includes the effect of climate, dress, food, sleep, drainage, exercise, ventilation, physical culture, bathing, and other subjects comprised under the general term "sanitary science."

The Greeks and Romans paid considerable attention to the subject of hygiene, and we find traces of well-arranged ventilation in ancient Egyptian houses. Moses also instructed his people with reference to the laws of health.

The subjects of physiology and hygiene should form a part of all education, for when properly observed, they furnish a foundation upon which magnificent superstructures can be built.

CHARLES E. STEWART, M. D.

COLD WEATHER VENTILATION.

Professor Bouchard, the eminent French medical authority, stated a great truth when he said, "The body is a factory of poisons."

Every movement of the heart, every contraction of a muscle, every thought, produces waste matter in direct proportion to the amount of that activity, and this waste matter must be carried off by means of the various eliminative organs of the body. If the kidneys entirely cease their activity, the individual dies within a day or two. If the skin is covered with a coat of varnish, the same thing occurs in a somewhat shorter length of time. But, more important than either of these eliminative agents, are the lungs. If a person is deprived of breath for only a few minutes, the poison that should have been thrown off through this channel, accumulates so rapidly as to cause death.

This striking fact ought to impress every one with the importance of proper ventilation. The poison that would kill an individual if he had no opportunity to throw it out, would kill another individual just as quickly if he had to breathe it in after it had been breathed out by the first. There are various waste products in the breath; the one most readily detected is carbon dioxide gas; just as the scum and filth on the top of a stagnant pool suggest to the intelligent observer the nature of the inhabitants of these waters, so this gas serves as an indicator of other poisons that are eliminated through the breath.

Five thousand cubic inches of ordinary air contain about two cubic inches of carbon dioxide. Every breath that we exhale contains one cubic inch of this gas, thus bringing the two parts up to three parts in five thousand of air that is being breathed. This nearly all of the great sanitary authorities have fixed as the danger limit compatible with health. Five thousand cubic inches are practically three cubic feet. It is thus evident that at every breath we contaminate about a half barrel of air, or very nearly three thousand cubic feet in an hour, which should be replaced by that amount of fresh air.

A proper system of ventilation will provide an inlet and an outlet for three thousand cubic feet of air every hour for each individual in the room. In the summer the question of ventilation does not assume so much importance as during the winter months, because then the members of the family spend much of their time in the open air, and the various openings of the house are most of the time left unclosed. But as the winter comes on, we are wont to begin to compete with our neighbors to see how thoroughly we can stop up every crack and crevice, which would otherwise allow one of heaven's

richest blessings to come into the home. Many a father relates with pride how much fuel he is saving this winter as compared with that consumed last winter, because he has discovered some place where there was an admittance of cold air from the outside. While it requires less fuel for the stove, the flame of life in his wife and children will flicker lower and lower as springtime approaches. As they grow more pale and complain of various ills, these are generally attributed to other causes, perhaps to some mysterious Providence, and probably before the summer comes more money will be used for sickness or possibly funeral expenses than would have been needed to secure the necessary fuel to heat a properly ventilated house.

Proper ventilation does not mean allowing a little fresh air to come into a home. It includes some method by which the poisoned air can be carried off. If, by mistake, a dangerous poison were dropped into the water-tank which supplied the family with drinking water, we should not feel satisfied upon being told that there was a small supply of fresh water running into it, but we should provide some means by which the poisoned water could be carried off. It is exactly so with right ventilation. It is just as impossible to enjoy health while taking into our own lungs the poisonous air of another's lungs, as it would be to feed continually on impure food.

We shudder as we read in the newspapers of the large number of deaths caused by cholera and the plague, but we rarely stop to recognize the fact that we have in our own homes a disease that is infinitely more disastrous to human life. One out of every seven deaths that occur in this country is caused by consumption. Five hundred people die from this disease alone every day in the United States. It is commonly supposed that consumption is transmitted directly from parents to children, but fortunately this is rarely the case. It is only the tendency that is thus inherited; if children of consumptive parents can be so favorably situated that their environment will not tend to fan to life this latent tendency, they have practically as good a chance for health and life as if their parents had not suffered from this disease; but one of the active factors in the development of tuberculosis is the habitual breathing of impure, poison-laden air. In this condition the air irritates the delicate lining of the lungs, and thus a soil is prepared for the lodgment and propagation of the much-dreaded disease.

Impure air has a depressing effect upon the circulation, and the vitality that should be used in resisting these various diseases is expended in battling with the poisons which are being breathed in moment by moment. The whole system becomes relaxed, digestion is slower, and the mind becomes despondent and gloomy.

As window ventilation is the only kind that can be secured in the majority of homes, attention should first be called to this. When a window is lowered a few inches from the top, as is ordinarily the case, the cold air comes in and falls at once to the floor, just the same as a stream of water would. It slowly diffuses along the floor, chilling the lower extremities, mingles little by little with the contaminated air of the room, and as it becomes warmer, gradually rises. By this means the only pure air in the room is cold, and at the feet where it can not be utilized.

The air in the upper part of the room is hot and contaminated. To obviate this difficulty, it is well to lower the upper window-sash nearly an inch for every individual who is to occupy the room. Have a tinner devise a box which will fit on the top of the window-sash, and so arranged that it will project several feet

into the room, slanting upward toward the ceiling. By this means the current of air will be directed upward and toward the center of the room, diffusing down gradually and avoiding unpleasant drafts. In stormy weather it is not necessary to have the window opened as much as that, because the air travels in much faster.

For the foul-air outlet an ideal plan is to have the chimney constructed in two parts, one to serve as an exit for the smoke, the other for the foul air. The smoke going out through the one compartment will heat the other sufficiently to create an upward draft. Unfortunately, very few chimneys are constructed with this end in view; but a very good substitute is to build a wooden box along one side of the chimney, extending up through the roof of the house, placing a wooden cap over it to protect it from the rain. The heat passing through the bricks will ordinarily create an upward draft.

Still another method very convenient to arrange, is to fit an ordinary "T" in the stovepipe just before it is fitted into the chimney, and allow the pipe to extend down to within a few inches of the floor. This will carry away the foul air up through the chimney. While ordinarily not large enough for the average family, this is a great deal better than nothing at all. Care must be taken, however, to have underneath a metal dish of some kind to receive cinders, in case any should fall, to prevent them from igniting the floor.

The old-fashioned, open-air furnace was one of the means of securing an excellent ventilation. Constructing a metal jacket around the stove, allowing the fresh air to come up under the stove from the box under the floor, running out through the foundation, drawing it in from a pure source, and thus heating it as it passes between the stove and this jacket, is another excellent method. Stoves are now being constructed with double walls, which utilize this principle. Houses that are heated by closed furnaces in the basement are generally quite well ventilated, providing that the air which supplies the furnace is drawn from the pure, outdoor air, and not, as is often the case, from the cellar, and the impure air passing down through the registers of the floor from the rooms above. Many churches and large assembly-rooms are heated and ventilated upon precisely this latter plan, which accounts for the stupor and headache that many persons experience after being in such rooms only a few minutes.

The prevalent spirit of the age is a demand for labor-saving devices. Why should we not be as anxious to introduce devices that will serve to lengthen human life and to add to its comfort by promoting health?

DAVID PAULSON, M. D.

HOME CLUB QUESTIONS.

PHYSICAL DEVELOPMENT.

1. Why is correct position of the first importance?

2. How can you tell whether a person is standing properly or not?

3. How can it be proved that the correct standing position is a natural and not a theoretical one?

4. What internal organs of the body are especially injured by wrong attitudes?

6. What classes of people need to give especial attention to their standing and sitting positions?

HEALTHFUL DRESS.

1. How can it be shown that dress has been an important factor in the physical degeneration of women?

2. What is the most encouraging sign of a change for the better?

3. What conclusions must be drawn from a contrast between any perfect sculptured form and the ordinary "stylish" figure of to-day?

4. What are the greatest evils resulting from the small waist?

5. What is the proper proportion between a woman's height and her waist measure?

SCIENTIFIC COOKERY.

1. What claim has cookery to be ranked among the fine arts?

2. What is the moral importance of the cookery question?

3. How has cookery departed from its original purpose?

4. What should be the criterion of a good dinner?

5. Why should food be cooked?

HYDROTHERAPY.

1. What is the meaning of the term "hydrotherapy"? of "prophylactic"?

2. Why is the effect of water treatment superior to that of medicine when it can be used instead?

3. How does the cold bath affect digestion?

4. What is the temperature of the cold bath, the cool bath, the tepid bath, the warm bath, the hot bath?

5. Why should a cold bath always be short?

PHYSIOLOGY AND HYGIENE.

1. How are the cells of the body nourished?

2. What difference does it make to cell life whether a man eats the right food or not?

3. What difference does his cell life make to the man?

4. What does "proper ventilation" mean?

5. When may opening a window be called a labor-saving device?

For Answer by Subscribers

1. What is health?

2. Why is health of paramount importance to every man?

3. What are the advantages to health of winter weather?

4. Why is physical exercise just as necessary to health as food?

5. Why is it absurd to suppose that by taking longer and more vigorous exercise once in three or four days we can make up for neglecting it altogether during the time intervening?

6. What is the most important duty of clothes?

7. What requirements must be met by the ideal dress?

8. What is a cold?

9. What is the relation of the temperance question to dietetic reform?

10. How is it true that "there 's religion in a loaf of bread"?

THE POWER OF THE TOBACCO HABIT.

BY CHARLOTTE SMITH ANGSTMAN.

(Continued.)

HOME influence and education are not overestimated in the great credit given them by every one, but this matter lies with the fathers as well as with the mothers. If parents will learn and realize the true effects, moral and physical, of the use of tobacco, and will teach them to their children, both girls and boys, day by day, using the object-lessons which are plentiful enough, we shall have a cleaner, purer, brighter-eyed, clearer-skinned, less dyspeptic, less asthmatic, less cancerous people for our next generation.

A great deal is said about art, about making everything beautiful for others to behold, and great efforts are continually put forth to have people more cultivated in this direction. Shall we not try, then, for art's sake, to have our *people* more beautiful? Is there anything more beautiful in art than a perfect human being,—one with a pure soul, a highly developed intellect, and a body whose bright eyes, clear skin, pink cheeks, white teeth, and strong yet supple bearing, suggest generations of right living? It would be possible to see hundreds of thousands of such,

through continued obedience to God's laws. In this generation it is the exception to see a perfect or ideal physique. Nearly all are imperfectly developed, and plainly show in their faces, as well as their bodies, that they have been bequeathed but half a chance to do and be what they might have been with ancestors treating the body as God's temple.

Parents are too often lax in the oversight of their young sons. Daughters are naturally more with their mothers, and so are more easily watched and influenced; but boys' pursuits taking them more out of the house, a more constant watchfulness must be exercised to see just how they are spending their time. I have known boys who were habitually away for hours at a time without the parents' knowledge or consent, to come home with plausible stories as to their whereabouts, but who in their mature years confessed to having learned to smoke, and having occupied much of their time in that way during their absences.

Although a mother can do so much, and in some families most, for her son's moral nature, a father can not be relieved of his share of responsibility in seeing that his son has the power of good example. If there is such delight in the use of tobacco for men, naturally it immediately becomes something extremely desirable and attractive to a boy,— something he is determined to test, unless the home influence is strong against it; then follow those years of carefully contrived deception, which in itself lowers the moral tone of any one, old or young, who allows himself to practise it.

Men coming from good families, many and many of them, confess to having smoked secretly and to a considerable extent from eleven years of age. How can boys draw the line as to just when they may begin the use of tobacco without the serious consequences to a growing and developing body added to all the other evil results? Shall we blame the boy for following the example of his father, it may be, or blame the father who should be a pattern for his sons?

Many a wife, by thoroughly informing herself on this subject, has been able to induce her husband to give up the tobacco habit, and has thus saved to her children the power of right example from their father.

Girls, as well as boys, need to be carefully instructed on this subject from babyhood. Every mother should realize that some time her daughters may marry, and that they are going to marry some one from among the young men with whom they associate. It is useless to instruct them all at once, at the susceptible age, as to what they should demand in character from their associates. This education must be a gradual thing from infancy. It must be a part of the daily instruction that whatever a man or a woman does that affects bodily conditions or character, will be stamped upon those who are to come after them; that we must fit ourselves day by day to be what we wish our future children to be. Our girls as well as our boys should be taught gradually and continually concerning the effects of tobacco in every way. Create a knowledge on this subject that will make every young woman demand for associates young men who never touch it; demand that her future husband must not use a poison that is a daily menace to his health, even to his life; that he must not have a habit that so surely breeds selfishness, a quality which in itself will cause heartache untold. Let her be taught that her future husband should have a constitution unimpaired through any fault of his, that their children may have that legacy which is precious above all others,— health.

Young men have no incentive to keep their morals at the very highest standard

when they can always find pure and noble girls to marry them in spite of glaring defects in character. Our young women, by being trained to demand the same purity in all things from their male associates that is expected of them, can do very much to elevate the moral standard of our young men. From a very practical standpoint, it will be worth young men's while to be pure.

From almost every standpoint, women are equally concerned with men upon this subject. Did you ever stop to think what everybody is inhaling who sits in a smoke-laden atmosphere? Men and women execrate the impurities thrown out by furnaces of various sorts, in their labor of carrying on the machinery necessary to run the world, but what about the pollution of the atmosphere caused for supposed pleasure? Whoever inhales tobacco-smoke, willingly or unwillingly, inhales nicotine, free carbon soot in minute particles, acetic, formic, butyric, valeric, and still other acids, including a trace of prussic acid with creosote and some hydrocarbons. This shows that there are present three powerful poisons —nicotine, which every one recognizes, creosote, and prussic acid, than which there are no more deadly poisons. Of all these acids and alkaloids, not every one is inhaled every time smoke is inhaled, but the nicotine and empyreumatic oil, or "oil of tobacco," formed by the burning of the leaf, and which is highly narcotic and poisonous, are always developed and inhaled.

The odor of "stale" tobacco which clings to the clothing and to smoking-rooms, and which is even exhaled by the skin, is due to this oil. It is an interesting fact that the odor of tobacco is perceived in the skin of persons, who, without smoking themselves, have inhaled for some time the atmosphere of a smoking-room. Many can not smoke even a single cigar without exhaling the odor of tobacco through the skin for several hours.

If we might take it for granted that all women desire the abolition of its use (for not one per cent. of the intelligent and educated women in the land are indifferent to this matter), what about the men who do not and would not use it? Must they forego the society of their companions and friends in clubs and various associations, and at their banquets, where a man is in his element, it is said, because tobacconers persist on such occasions in so poisoning the air that it is a menace to every one who inhales it? Shall a man avoid this society because he does not care to come home to his wife and children with his clothing full of an odor which it requires hours, and sometimes days, of airing to remove? or shall he, and all others of like mind, men and women together, make an effort to have all gatherings of men wholly unobjectionable in this respect? It would certainly seem not unreasonable to ask that those who desire this form of indulgence should go by themselves to a room or house devoted to that purpose, and for a limited time.

Many feel earnestly on this subject, but think that one person's influence and effort are too small to have any effect, so are discouraged from making any attempt to create a right feeling or understanding on the subject. Let such recall some bit of knowledge which has been handed down in their families from many generations affecting each individual. Let them recall some piece of advice, and trace those who have been affected by it. They will be astonished at its power. Example and influence are no uncertain things. Their ramifications may again and again be traced to include effects upon hundreds and even thousands.

(To be continued.)

CO-OPERATIVE HOUSEKEEPING IN THE HOME.

BY MRS. E. E. KELLOGG.

IT is a matter of common observation in these days that in a large majority of the homes where the family income will not permit the service of hired help, the burden of the domestic work is almost wholly borne by the mother, while the daughters, young and old, spend their time in preparation for *future* usefulness, attending school, taking lessons in art, music, oratory, or, as is too often the case, in pleasure seeking, idleness, novel reading, or devotion to the so-called duties of society.

The spirit of self-abnegation which prompts a mother thus to sacrifice herself for her children may appear beautiful in song and story, but it is neither just to herself nor for the best interests of her daughters to absolve them from duties that need to be performed for the common good of the home. In thus continually serving them instead of teaching them to do for themselves and for others, she is not only jeopardizing their future usefulness and hence their happiness, but training them in selfishness, and laying the foundation, perhaps, for an early estrangement from the home. It is characteristic of human nature to love best that for which one does the most, and nothing tends more to bind the family together and to strengthen and perpetuate home ties than mutual labor for one another in the home.

Again, no true mother can afford to assume the rôle of a mere domestic drudge. It is her privilege and duty to make the home something more than merely an abiding place. She should be the central light from which radiate all those elevating, ennobling influences that mark the true home. She must be much more than a housekeeper. To meet fully the demands upon her, she needs time for outside interests to broaden her thought and deepen her life. Her daily program should include some opportunity for meditation and study, rest and recreation. The fulfilment of her highest obligation to her children necessitates a continuous growth in her own life. For her own sake, then, that she may be the better mother to her children, and for her children's sake, let her train them early to share in the household work. In infancy and childhood the help they can render in lightening her burdens must needs be largely measured by their love and companionship, while in truth she "lives with them," a sympathetic teacher and companion; but from the time they have reached the stage of boyhood and girlhood, they should be able to carry a share, greater or less, according to age and ability, of the home work, leaving the mother more and more leisure for herself, as they grow in strength and skill.

When there are several children in a family, a system of co-operative housekeeping may be inaugurated by which the necessary daily work may be completed easily and quickly. Just how this can best be brought about in each household must be determined by its individual needs and demands. One mother with a large family, varying in ages from four to sixteen, found a co-operative system, based upon a daily program for individual work, the best suited to the purpose. Being a firm believer in the value of domestic education for children, she had early instructed them in many lines of housework, and for years they had been her assistants. Now, however, they were to be given responsibility as well as work. Taking into consideration that there are but twenty-four hours in the day, and

that of these from eight to nine are needed for sleep, while during five more they were required to be in the schoolroom, it was thought wise that four hours each day should be the maximum time allotted to domestic work on school-days. The day of each week on which there was no school, a larger amount of time was devoted to housework, to doing what was termed "extra cleaning," by which the rooms and their furnishings were kept so free from dust and germs that there was little call for a "general renovation" when the periodic times for housecleaning arrived. This left each from six to seven hours for meals and recreation.

That the work might all be accomplished in the given time necessitated close application to business during work hours, and brought into action all the dexterity and skill the children had acquired during the years of training. To arrange the work to fit the allotted time and each child's capabilities, required much study and planning on the part of the mother. To aid them in the systematic performance of their duties and make unnecessary her constant supervision, each child was given a daily program of work. Sixteen-year-old Laura, who was already proficient in the making of beds and the care of rooms, was given the care of the food supplies, the morning kitchen work, and the breakfasts to cook each day. Her daily program was much as follows : —

Daily Program.

Rise at 5 : 00 A. M.

From 5 : 00 to 5 : 30 A. M., shower bath, making toilet, airing bed.

5 : 30 to 5 : 45 A. M., morning watch (private devotionals).

5 : 45 to 7 : 00 A. M., kitchen work and cooking of breakfast.

7 : 00 to 8 : 00 A. M., family worship and breakfast.

8 : 00 to 8 : 30 A. M., completion of kitchen work.

8 : 30 A. M., preparation for school.

9 : 00 to 12 : 00, school.

12 : 15 to 1 : 00 P. M., necessary preparations for the morrow's breakfast (putting on over the dinner fire such foods as required long cooking).

1 : 00 P. M., dinner hour.

2 : 00 to 4 : 00 P. M., school.

4 : 30 to 6 : 00 P. M., on Tuesdays, ironing; on Wednesdays, mending.

In order that no time be lost in thinking "what to do next," with the help of the mother she planned the following order of work, which was neatly written down and kept where it would be a constant reminder : —

Morning Kitchen Work.

1. Light the fire, fill the teakettle and reservoir, polish the stove.

2. Dust the kitchen, and after putting it to rights, wash the hands preparatory to getting breakfast.

3. Prepare foods requiring longest cooking first.

4. Keep dish-water and towel at hand, and wash the dishes used as soon as soiled, in the intervals of waiting while food is cooking.

5. When done, dish the foods, and set the dishes in pans of hot water to keep hot until ready to be served.

6. After breakfast wash any leftover utensils, scald the dish-towels, clean the sinks, hoppers, and garbage receptacles.

7. Wipe up the floor, and put the kitchen to rights.

Upon Jennie, the next daughter, fell the dining-room work, and with the help of eight-year-old Vera, the table-setting, both for breakfast and dinner. To facilitate the table-clearing at the close of the meal, small trays were passed to each member of the family, by one of the boys, upon which each individual placed his own and as many other of the soiled dishes as he could easily carry, and rising quietly, took them to the place of washing, scraping them, and packing each kind separately. This left but little to

be done to finish the table-clearing and dining-room work, and this, Jennie found time to do in the half hour yet intervening before it was necessary to prepare for school.

Julia and Georgia, thirteen and eleven, swept, dusted, and put to rights the living-rooms and halls before the hour for worship, and did such of the bed-room work as could be attended to while the rooms were airing. After breakfast, Georgia, with the help of Ralph and Vera, washed the tableware, while Julia completed the bedroom work.

Upon Roy, the oldest boy, devolved the responsibility of keeping the furnace fires in operation, the porches and yard clean, the care of the family horse, and some of the indoor cleaning. Ralph's further program called for a large variety of helpful chores, the feeding and care of the pet animals, besides the making of his own bed, and the care of the boys' room.

Even little four-year-old Dorothy hap her morning tasks of watering the plants, feeding and caring for the canary under Julia's supervision, and helping with the room work by putting things in place and picking up the bits and scraps.

The washings were put out, but the ironing was easily accomplished by a family "ironing bee" two hours each Tuesday afternoon. The weekly mending was disposed of in a similar manner.

The mother's share in this co-operative plan included the marketing, baking, and dinner getting, besides the innumerable smaller tasks that are ever confronting the housekeeper. However, if she chose, the morning hours were all her own, and it was a joy when the children's tasks had been well done, to begin her work with everything clean and in order.

Just here it must be said, however, that the work was not always *well* done. These children were in nowise less human than other children, and there were many delinquencies, many dropped stitches of work, which had to be picked up by the mother, or left for the child to complete during the recreation time. There were days when some or all overslept, and the work had to be hurriedly done, or left unfinished. There were frequent unforeseen emergencies, and various other obstacles to surmount, but the children were not discouraged. Their motto was, "We learn by doing," and from both their mistakes and successes, they gained a valuable experience, while habits of promptitude and an appreciation of the value of time were daily growing stronger. That there might be no occasion for forgetting the necessary steps in any line of work, each department was furnished with an "order of work" similar to the one already given for kitchen work. The following are other samples: —

Order of Dish-Washing.

1. Prepare a hot suds for washing, a clean water for rinsing.
2. Wash all glassware, *each kind by itself.* If only one person is working, the dishes should be rinsed, wiped, and put away, before other dishes are washed.
3. Wash the silver.
4. Wash fruit-plates, plates, soup-plates, in order named.
5. Change the water.
6. Wash the individual dishes, saucers, pitchers, etc.
7. Put away all dishes.
8. Clean the sideboard and sinks.
9. Scald the towels and hang to dry.
10. Sweep and clean the floor.

Order of Table-Clearing.

1. Put back the chairs.
2. Brush up all crumbs, and *always use a covered broom* on the waxed floor.
3. Into a pail carried on a tray gather all the refuse, remembering to sort out and save all clean leftovers, and pieces suitable for use, and to empty carefully and scrape all dishes so that no fragments will be introduced into the dish-water.
4. Gather the silver on a tray, and put it and all dishes through the sideboard window.
5. Gather all glass dishes, each kind separately on a tray.
6. Gather plates.
7. Gather saucers, individual dishes, and all small ware, each kind by itself.
8. Remove all leftover foods, and put each kind away in its proper storage receptacle.
9. Gather all soiled napkins for the laundry, and put away in the individual rings all that are suitable to be used again.
10. Brush all crumbs from the table-cloth.

All dishes in setting or clearing the table should be piled and carried *each kind by itself.* This will save much breakage.

No foods should be set away in the dishes in which they were served at the table. All dry foods should be gathered and put into their proper receptacles, all fruit taken to the cooler, all sauces, gravies, etc. put into a clean dish and set in a refrigerator.

At the close of the work hours, each child was requested to look over the "order" carefully, and to "think" whether everything had been done that was required. This taught the children to correct their own mistakes while training them to thoroughness in their work. While the boys were given a share of the indoor work, the girls' program during the warm season provided a certain proportion of outdoor work, such as gardening and lawn sprinkling.

Did the children enjoy their work? Had they been asked the question, they would with one accord have replied, "Yes, indeed." The feeling of partnership which they had in the home interests, the sense of responsibility which they felt in doing well their share, gave them a realization of the dignity of labor, and inspired a love for it.

THE CARE OF THE TEETHING BABY.

BY KATE LINDSAY, M. D.

THE period of dentition, or teething, in the life of the baby is very much dreaded by mothers. All kinds of symptoms and all kinds of disorders have been laid at the door of this natural process, which is only a step in the plan of infantile growth and development.

The temporary teeth are twenty in number, and in an infant that is healthy, well developed, well fed, and properly cared for, give no special symptoms to indicate that their appearance through the gums need necessarily cause any disorder or disturbance of the functions of the other organs of the body. In fact, the process of tooth growth and development begins seven months before the child's birth, and keeps right on until all the teeth are cut. Often in a healthy child that begins teething early, the first symptom is a tooth already through the gums.

I wish to impress the fact that normal teething is not in any sense a cause of disease, because so often some serious disorder, as diarrhea, convulsions, a cough due to bronchitis, has been laid to the charge of the little one's teething, when the real cause was an error in diet, or something else not at all connected with the teething.

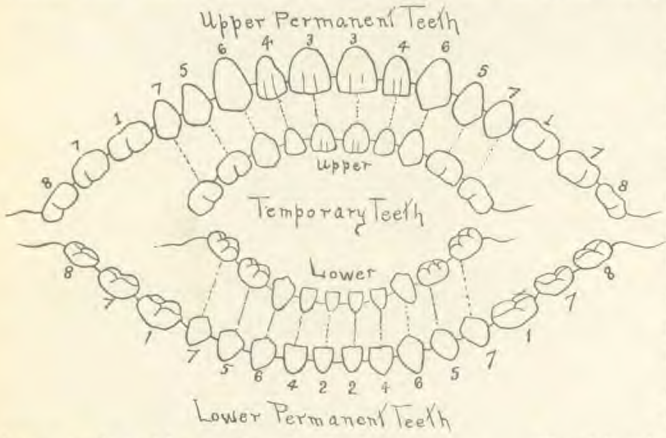
The writer was once sent for in haste to lance the gums of a baby just recovering from a convulsion supposed to be due to teething, and while examining the case to ascertain what was the real cause of the spasm, the little one vomited a great number of raisins swallowed whole, and a mass of other spoiled food. This made clear what the true cause of the spasm was. The lancet was not used, but the stomach was unloaded of its foul burden by a warm emetic, and the bowels by a mild cathartic and full water enema. The child had no further trouble with convulsions, and all its teeth came through without any aid of the lancet, without even pressing the gums with a coin or a thimble. Such cases occur frequently.

It was not the coming teeth but the bad dietary that upset the nervous system of the baby, and produced the nerve storm in the form of spasms. It is the belief of very many mothers that diarrhea is the result of teething, that often the loose mucous discharges that are the sign of some intestinal irritation, causing the mucous surfaces to become congested and to pour out a free discharge to wash away the offending matter, are but the natural result of teething, and therefore a matter of no importance, so nothing is done to find out the true cause of the disease, until it has assumed so grave a form as to be really alarming. Perhaps the physician is not consulted until after it is too late to do anything to cure the disorder.

If the mother or the nurse had been awake to the fact that it is not needful for the bowels to be out of order and loose when the child is teething, and that bowel disorders of infancy are usually the result of taking into the stomach either spoiled or unclean food, or food in lumps which the child can not masticate,—in fact, if she had been aware that the child was suffering from eating grown people's food, and swallowing germs in its food and drink, she would have felt that she, and not the teething, was responsible for the inflammation and catarrh of the bowels. Such knowledge on the part of mothers and nurses would materially lessen infantile mortality; for, once impress upon the care-takers that it is what the child is eating and drinking that is making it sick, and they will feel some responsibility in the matter of trying to arrest the progress of disease, as well as

studying how to give the little one suitable food and drink, how to clothe it properly, how to look after its housing and the air it breathes, how to protect it from changes of temperature, especially extremes of heat or cold.

It is in the hot months that teething is especially dreaded by mothers, yet the mortality is greater among children under three months old, when it may be said that teething is not yet fairly begun, than it is at six and eight months, and older. This is conclusive evidence that teething is not of itself a potent cause of disease; while it may intensify the effects of bad food, bad water, foul air, extremes of



heat and cold, weakness from wasting diseases, and the like, yet these causes are responsible for the mortality of infants at the teething period as well as at every other age. This is an important fact to remember, as these conditions are all more or less preventable. Believing that teething is a cause of disorders of the nervous system and digestive organs, many mothers allow themselves to be careless about the symptoms of disorders of these organs at this time, and death often results from the neglect to treat the patient, and to remove the cause of the disease in the early stages.

Children are often restless and fretful, and do not sleep well, from various causes. The writer has been called to visit a child, and to examine its gums to see if they did not require lancing (which, with the laity, seems to be the specific for all infantile disorders that occur in the teething period), only to find the baby suffering from thrush, and an ulcerated sore mouth which healed in a short time under proper treatment, while the sleeplessness and fretfulness disappeared with the healing of the ulcers and the proper cleansing of the mouth. In hot weather the skin often becomes irritated, and when the little one is overclothed and perspires a great deal, there if often an eruption of pimples on the skin, or a redness with intense itching; often the baby is allowed to cry and suffer all night when a warm soda bath and a cotton nightdress, fresh and clean, is all that is needed to give it and every one else a good night's rest. Even fleas, bedbugs, mosquitoes, and other insects have been responsible for the idea that the baby was fretting because of its teeth, and must have the gums cut.

Teething is a step in the developmental period of life, and every such advance in growth calls for greater expenditure of force, and greater activity of the nervous system, while it increases the work of the nutritive organs; but in the healthy child the body is prepared for the change, and all the organs are ready to do their duty without any serious derangement of any organ or function of the body. It is only when other causes are at work undermining the system, that teething disturbs the health.

There are very many chronic conditions that may render teething difficult, as tuberculosis, rickets, bronchitis, chorea, and organic heart disease, but the cause

of the disorder is not the teething, but the constitutional disease which precedes it. To have teething safely and easily accomplished, it is needful to avoid all the causes of disease just as carefully in the time of dentition as at any other period. When the bowels are loose, the stomach irritable, the infant restless and fretful, do not set down all these symptoms to a coming tooth, but try to find out what does really ail the baby. If it is improper food, as indicated by undigested food in the passage from the bowels, or by the child's vomiting lumps of solid, unmasticated food, or by any other evidence of digestive disorder, keep from the little one solid food of all kinds, and do not take it to the table and give it whatever is eaten by grown people until it has cut all its teeth and can chew all its food thoroughly. Look after its mouth; see that the skin is not chafed or irritated in any way; when it coughs, has the earache, or its health is disturbed at the teething period, remember that teething does not seriously disturb the health of a normal infant, but that ill health from other causes may make teething difficult. When the little one is sick at this time, treat it for the illness just the same as for such sickness at any other time.

(To be continued.)

A QUESTION OF ETHICS.

BY MRS. S. M. I. HENRY.

IT was a charming New Year's dawn. The Wheelers were old-fashioned enough to get up early and run all about the house trying to get ahead of each other with Happy New Year greetings. Father was the blithest one among them all, and Johnnie the happiest, for he went on father's shoulder up and down crying, "Wish you a happy New Year," to mama, grandma, his big brother, his two sisters, and his nurse (for if he was "almost a man" his careful mother kept a nice, motherly attendant for him, since so much of her own time was taken by social and church duties), as well as to every servant, not forgetting the horses, the dogs, and the cats.

"Won't we have a happy day, papa?" he chuckled, as his father swung him from his shoulder into his high-chair at the breakfast table. "'Cause you'll be home all day, and we can do lots of things."

"We 'll try to have a happy day, little man; you may be sure of that. Say, mama, have you made out my list for me? Don't make it any longer than it must be, for I would like as much time at home as possible. I don't like to leave at all, but I suppose I must."

"You selfish man! You don't seem to appreciate that you are so agreeable a friend. I am afraid you will have a long list, especially if you and Eaton go together."

"Of course we two boys must make our calls together. Eh, Eaton?"

"Yes, indeed, father. Mother and I have already made a list, and it will take the day, just about; but it is only once a year, you know."

"Yes, I know. Well, just as you arrange. I will have an hour or so with my little man here before I have to go.

"Now what is that for?" for Johnnie had dropped his fork, thrown himself back against his chair, and was struggling to keep a big sob from breaking loose, while the tears trembled on his long lashes.

"O — O — O papa, — I — I thought you 'd be h — home all d — day, and I — I w — w — ant you."

"And I want you, poor little innocent. You and I are victims together of a great unreasonable social system that was constructed for the sole purpose of breaking up our happy New Year. I 've a good mind to rebel at once; and I would if your mother would let me. You convert your mother, darling, and we 'll have a regular high old happy New Year just twelve months from to-day, you and I all day together with nothing to molest or make us afraid. Do you understand my proposition?"

Everybody was laughing by this time, even the staid old butler, for Johnnie had swallowed that one sob; his eyes, still wet, had begun to shine; his cheeks were blooming like roses; his mouth, while not quite smiling, was cherubic in its beautiful innocent sweetness, as he said,

"Yes, papa."

"You quite understand, do you? and you will engage to convert that charming but very positive mother of yours, and to do it in time?"

"Yes, papa, if — if — you 'll tell me what it is, and just how."

Then such a rollicking, irresistible roar of laughter as went around that table can better be imagined than described. Johnnie caught the infection of it, and his little taste of bitterness was washed away by it, so that he returned to his breakfast feeling that it was a happy New Year after all, because there was one coming when he would have his papa for a whole day all to himself.

"Grandma!"

No answer.

"Say, grandma!"

But grandma was bending over a letter which had just been brought her. It was from the Uncle John after whom our little hero was named, and the envelope bore the African stamp. Grandma had not seen this son for so many years that a letter from the far country which he called home, took complete possession of heart and brain. Besides, she was so accustomed to having the child left with her, and to hearing his little chattering voice, so *un*accustomed to answering always, that she did not even hear him now.

"Grandma! Now grandma, don't ever say I did n't tell you when you don't pay 'tention, for I did. Say, will you, grandma?"

"Yes, dear."

"But you must n't, for that would be a story. I 'm going to make calls, too."

"Yes, dear," she said again, absently.

"Mama won't care, will she?" and he patted grandma's hand, "for everybody's making calls, ain't they?"

"Um — m — um," said grandma.

"And it 's all right, ain't it?"

"Yes, dear. Now run and play. Don't bother grandma; she wants to read Uncle John's letter."

"Uncle John in Africa? I guess I 'll go and call on Uncle John," and Johnnie Wheeler ran to the nursery closet where his things were kept, and began to prepare himself to make a Happy New Year day for himself.

He had no basis of experience, and very little of instruction upon which to build any plans; besides, he was only five years old. But he had plenty of imagination, imitation, versatility, adaptability, and perseverance, together with several other strong qualities which he had inherited from a long line of successful men and intellectual women; and while his mother and sisters were receiving in the parlor, and his nurse in the servants' sitting-room, and his father and brother were calling on their lady friends in the good old-fashioned way, he walked out unobserved, and started on his "round."

He often went with his mother in the carriage, as she visited among both rich and poor; but he had almost always sat and waited on the seat with Max, the coachman. He always enjoyed that. He had his daily ride and walk with nurse, and he enjoyed them, but somehow this first starting out alone and on foot, had in it elements of delight such as he had never before experienced. He ran, and jumped, and swung his arms, and said, "Wish you a happy New Year," to almost everybody he met, and received in return a great many pleasant replies. He was so happy that he forgot all about calls, and ran on clapping his little red mittens together, and said, "Happy New Year, Happy New Year," until it fell into a sort of sing-song, which was as sweet as rippling water.

"Well, you are a Happy New Year all by yourself, I should say!"

Johnnie looked up. A not very clean, but rather pleasant woman's face was looking down at him.

"I wish you a Happy New Year," said Johnnie.

"Thank you, sweetheart. I wish I might have one again. You have helped for a minute, but—" and she looked sharply at him, and then around, "what in the world! You must be a stray. Where 's your mama?"

"'Ceiving calls in the parlor, and grandma 's reading Uncle John's letter, and nurse, she 's got calls in the sitting-room, and papa and Eaton is making calls, and so 'm I."

"Yes, I see. And what's your name?"

"Johnnie Eldred Wheeler."

"And where do you live?"

"Four hundred, Washington avenue.

"Well, not much danger but what you can find yourself all right. You 're a bright little fellow. You started out to make calls, did you?"

"Yes 'm."

"Well, don't you want to call on my poor little sick boy?"

"O yes 'm, that's just what I came for."

"You did! Well, all right, come on," and the woman took one of the little mittens in her hard, dirty hand, and they went on together.

The little feet had grown just a trifle less springy by this time, and the child was content to walk and talk soberly with the woman; and, true to his investigative nature, he began to take note of her peculiar characteristics.

"What makes you wiggle and jerk when you walk?" he said.

"Because I 'm lame."

"Oh; that 's what hurt Leo. He was lame, poor doggie, but he got well; so 'll you."

"No, I can 't, *ever.*"

"Can 't you? Why can 't you?"

"Because it 's a hip disease."

"Well, you can wash your hands and face, and have them clean anyhow."

"Yes, I might do that if I had any gumption left."

"Well, I forgot to bring any of my nickels, but I 'll ask mama to send you some. Is it like soap?"

"Bless the child! No; it can 't be bought or sent. I can 't get gumption any more than I can get rid of the lameness."

"Well, my papa can get anything. He 's a big man, and does lots of things. I 'll take him to call on you next time I come to call on your little boy, and you 'll see."

"Yes, I 'll see," said the woman bitterly, while a hard sneer curled her lip.

The altered tone had drawn Johnnie's eyes searchingly to her face. He noticed the changed expression, and out of his limited knowledge located its cause, and in a tone of pity asked,—

"Are you sick? Does your head ache?"

"What makes you ask so many questions?" was the almost brutal rejoinder, for the woman's heart had suddenly hardened under a thought which the child's reference to his father, together with the sight of a pawn-shop, had suggested.

She saw her narrow, dark cellar-room, in which her darling, born in happier days, was pining away for lack of food and warmth and a physician's service, which she could not provide. She saw also the value represented by the costly garments in which the happy child at her side was clothed, and for the first time in her life the heart of that woman became the nursery of criminal intent.

"I 'll do it," she said under her breath. "I 'll take him home so that my poor Bertie can just see the prettiest picture he ever saw, and then I 'll — "

"What did you say?" asked Johnnie. "I didn't hear you; and what does make you look so sick? I guess you 'll have to have the doctor. Do you know Doctor Hunt? He will make you well quick, and your little boy too. I 'll ask him to come and see your little boy as soon as I get home. Won't that be a Happy New Year thing to do?"

"Yes, if he 'd come," she answered.

"O, he 'd come. He always comes quick."

"That 's because you have money," and the bitter tone came back to her voice. "I have n't any."

"Well, I 'll give you all I 've got," said Johnnie, "and my papa will give you some, too."

"Yes, you 'll give me all you 've got," she muttered through her teeth, while Johnnie looked up again with concern and sympathy expressed in every feature of his beautiful face. She, however, was looking at the pawn-shop, and had no eyes with which to read the tender story for her that was written all over that baby face.

(To be continued.)

Consumption from Animals.

Dr. Mazyek P. Ravenel, in the *Journal of the American Public Health Association*, says: —

"Of all diseases to which the animals from which we derive our food are liable, tuberculosis is the most prevalent and the most far-reaching in its effects, and it seems not unlikely that there is a close connection between the prevalence of the disease in man and in our food animals. If we examine into the geographical distribution of tuberculosis, we shall find that there is a close connection between the presence and the absence of tuberculosis and the presence and the absence of healthy cattle. In Northern Norway, Sweden, Lapland, and Finland, where reindeer constitute the bulk of farm animals, or about Hudson Bay and in the islands of the Pacific, where no cattle exist, in the Scottish Hebrides, Iceland, and Newfoundland, where there are only a few cattle, tuberculosis is far less prevalent in man. In Algiers the cattle are few, and live for the most part in the open air, away from cities, and it is found that tuberculosis does not increase among the natives. In Italy, on the other hand, where cattle are housed, Perroncito states that tuberculosis has become the scourge of man and beast."

THE first wealth is health; sickness is poor-spirited; it must husband its resources to live. But health answers its own ends and has to spare; runs over and inundates the creeks and meadow-lands of other men's necessity. — *Emerson.*

EDITORIAL.

Shall We Smile while We Masticate?

A newspaper writer advances the surprising theory that when we sit down at the table, we should consider carefully what we eat, how we eat, and how much we eat; we should be sure that we do not eat too much; we should be careful to study the combination of foods; we should take pains to chew our food sufficiently and with great precision. We should refrain from any trivial conversation so that our minds may not be too much perverted from the gravity of eating, for it is truly a solemn operation. We should not allow ourselves to smile, to joke, or to laugh while eating, because we might laugh right in the midst of mastication, and swallow a morsel of food before it had been chewed quite enough; it might require ten crushings instead of eight, and if it should be swallowed before it is properly masticated, it could not be properly digested, and in that case nobody knows what serious consequences might result.

There is, no doubt, more or less truth in all this. It is, indeed, a serious thing to eat. But the considering, and the reflecting, and the study of combinations should come before we sit down at the table, and not during the progress of the meal. It is a great mistake to allow the mind to dwell upon the physical processes going on during digestion. If one keeps thinking about what he has eaten or is just going to eat, and wondering whether or not it will agree with him, if he eats "with fear and trembling," so to speak, his state of mind has a depressing influence upon his stomach, and that organ rebels.

The stomach is bashful, one might say; the stomach, the liver, and other organs are sensitive to criticism and observation; hence, when one sits down at the dinner-table and begins to think and talk about his "peristaltic woes," his stomach will very likely get into a sort of stage fright so that it can not do its work, and it will have to suspend business for a time.

Conversation and laughter have a good effect upon the digestion, because, although it is true that while laughing one may now and then swallow a piece of food before it is thoroughly masticated, another thing happens in connection with conversation and laughter which is an offset to this possibility, and that is that the diaphragm, every time it comes down, gives the stomach an extra squeeze; the movements of the stomach during the process of digestion are similar to the motion of churning. When one is dressed properly, every time he takes a breath the diaphragm comes down with a good hearty squeeze upon the stomach, and shakes it up; the stomach is in this manner jolted back and forth, and that is a part of the digestive process. That is why breathing exercises after breakfast and dinner are valuable.

Laughter is technically called cachination, and when one cachinates well, his diaphragm shakes his stomach well; it is a kind of merry dance; the stomach "trips the light fantastic toe," so to speak, and the food is set into such a commotion that the digestive process is thereby hastened.

A hearty laugh stimulates the vasomotor centers, and the spasmodic contraction of the blood-vessels causes the blood to flow quickly, sending a warm glow to the feet and limbs, and enlivening the stomach into increased activity. There is no better aid to digestion than a merry laugh.

"Vegetarian" Misunderstood.

The term "vegetarian" is almost a misnomer as commonly applied to vegetarians by non-vegetarians. Even the dictionaries have accepted the popular misconception, and by their authority add to the confusion. For nothing short of confusion is produced when a vegetarian declares to his friends that he does not eat vegetables. Now a vegetarian may or may not eat vegetables. Generally

he does, when he first becomes a vegetarian, but very often as he progresses in the knowledge of the values of foods, he comes to a point where he thinks it economy of labor to live on fruits and grains and nuts, discarding vegetables as not worth the trouble of consumption and digestion. Then he wishes that people more generally understood the meaning of the word "vegetarian."

The root word from which this term was taken is the Latin *vegeo*, which means: "I thrive; I am lively, vigorous, brisk, active; I am in good condition." As the *Vegetarian* remarks, "it had nothing to do with the merely subjective idea of vegetables, but it signified an objective point toward which the early pioneers of the movement attained by means of certain reforms in food and drink and hygiene generally."

The word *vegeo* is allied to the word *veho*, to proceed or advance, from which our word "vehicle" is derived. And this again has its root in *vis*, signifying strength, power, force, vigor. The adjective of the word *vegeo* is *vegetus*, which means quick, fresh, lively, active, vigorous, sprightly.

Vegetarianism, then, does not imply vegetables, but vigor. It suggests that its adherents are determined to pursue that course of life, and that alone, which best promises to make them strong, quick, and forceful. Withal, vegetarianism affords them the means of carrying out this determination.

An Awakened Conscience.

Quite frequently we hear from the lips of those who have been complying for some months with the requirements of hygiene relating to diet, remarks like the following:—

"I believe that health reform is making me a dyspeptic; I am certain my stomach is not half so strong as it used to be. When I lived as people generally do, I could eat anything I pleased, and never know the difference; but now I can not vary in the least degree from the hygienic diet without suffering for it. Formerly I could eat between meals as much as I pleased, and at any time of the night or day. Now, if I take even a small bite at night, I get up in the morning with a headache, and feel ill all day."

The person is correct in attributing this change in the disposition of his stomach to the effects of hygienic diet; but he should regard it as a matter of rejoicing, rather than as a thing to be regretted. He need entertain no fear of dyspepsia; the change which he notices is the result of the return to health of his digestive organs. The nerves which were once stupefied and blunted by caustic and irritating condiments, have become acute and active. Instead of allowing the stomach to be imposed upon by all manner of disturbing and unwholesome compounds, as formerly, they are now faithful sentinels, and at once protest whenever any violation of the laws that govern its healthy action occurs.

What would be thought of the mental status of a converted thief who should complain that he had made a great mistake in renouncing his nefarious profession, for previously to doing so he had never felt any qualms of conscience, even if he picked a pocket or robbed a bank, while now his peace of mind is totally destroyed if he deviates ever so slightly from the requirements of scrupulous honesty? Or what would be considered the sincerity of an individual who claimed to be penitent for past acts of villainy and cruelty, but still continued in the same course of life without remorse?

People who find that their stomachs have become more sensitive than formerly as a result of a reformatory change in diet should accept the same as an evidence of returning health. All they need to do is to follow implicitly the indications of experience.

Of course these suggestions are not intended to apply to that class of dyspeptics who are continually watching their feelings, and anticipating injury from their food. Such persons must act upon principle rather than feeling, if they would acquire health.

Soap a Good Disinfectant.

It is not generally known that soap is one of the very best disinfectants. This is true, not only of the so-called antiseptic soaps, but of ordinary soaps, and it is particularly true of potash soap. Ordinary

potash soap, for example, as the common laundry soap, is a better disinfectant than any of the so-called antiseptic soaps.

Dr. Reithoffer has recently made a series of careful investigations upon this subject. He experimented with various kinds of antiseptic soap as well as the ordinary soaps. He found that a five-per-cent. solution of ordinary soap would kill cholera microbes in five minutes. In washing the hands by rubbing the moist soap upon the hands, the strength of the soap solution is always fully five per cent., sometimes more than forty per cent. of strength, so that this may be regarded as a reliable method of disinfecting the hands so far as cholera germs are concerned. The germs of typhoid fever or the coli bacillus require at least a ten-per-cent. solution to kill them. The germs that produce pus and that are always found upon the skin are, unfortunately, not affected by soap.

Dr. Reithoffer concluded, from his experiments, that in the use of antiseptics it is better to use the soap first by itself than to mix the antiseptic with the soap.

We have lately tried a "tar soap" that proves itself to be worthy of commendation as being not only a good and reliable soap, but also a valuable antiseptic.

Statistics on Idiocy.

The *Medical Record* recently published an account of the development of idiocy and imbecility in this country, which presents a very discouraging outlook to those who believe that we are rapidly improving; but it is in entire agreement with the facts that have been so frequently published in these columns, demonstrating that race deterioration in the United States is going on at a very rapid rate. According to the article referred to, the total number of idiotic and feeble-minded persons in the United States on June 1, 1890, was 95,609. Of these, 52,962 were males and 42,647 females; 84,984 were whites; 42,277 males and 33,620 females were born in the country; foreign white, 4,875 males and 4,212 females; negroes, 5,788 males and 4,799 females; the remainder, Chinese, Japanese, and Indians, 22 males and 16 females. In the census of 1880, there were 76,000 feeble-minded persons in the United States, showing an average increase of 2,000 a year. In 1870 the number of idiots was 24,395; of these, 22,766 were born in the United States. Dr. Fernald estimates that, taking the country as a whole, there is one feeble-minded person for every five hundred persons in the United States, while Dr. Ireland is of the opinion that as a rough estimate this proportion holds good in all those countries that have a census.

Nuts as an Article of Diet.

The *Popular Science News* quotes from Dr. Allsly the following enthusiastic recommendation of nuts as an article of food: —

"The food of primeval man consisted exclusively of fruit and nuts, but with advancing civilization they were more and more neglected as an article of food until at last they have come to be looked upon as only a side dish, to be used to a limited extent, and then only as an accessory to the table, a sort of luxury instead of a food. Nuts are not only exceedingly nutritious, but easy of digestion if the skins, or inner linings, are discarded. They possess little if any starch, and therefore are a valuable substitute for other foods in cases of obesity. They compel an amount of mastication which is given to nothing else. They perform a function of peptonization in the stomach, assist in preventing the formation of an excess of bile, and act as a gentle laxative. Persons suffering from dyspepsia will find great relief by making nuts a part of their daily diet."

A Point in Economy.

It has been estimated that twenty-two acres of land are needed to sustain a man on flesh, while that amount of land sown to wheat would feed forty-two persons; sown to oats, eighty-eight; to potatoes, Indian corn, or rice, one hundred and seventy-six persons; planted with the bread-fruit tree, it would furnish sustenance for more than six thousand people.

WHERE REFORMS MUST BEGIN.

BACK of the questions of social and political reform, back of the temperance and the tobacco questions, lies the question of healthful living in the home. Society can not be reformed by wholesale. The only way to bring about a general reformation of any kind is to begin with individuals. The principles upon which good society must be based are the very principles that are necessary to make good men. If all men were good, there would be no trouble about society; yet society can not be uplifted by any different principles or methods than are necessary for the uplifting of each man. When the individual men and women who compose society are made good, society will take care of itself.

In order to make good men and women we must have good homes; the children must have good fathers and mothers and good training; for the home really furnishes the soil out of which the whole character grows. The tiny plant, character, is rooted in the cradle,— sometimes farther back than that. This little plant is developed in the home, and it is good, bad, weak, or strong, according to its environment, according to the training and the conditions of the home in which it is reared.

The temperance reform is a glorious movement, but its work is like picking off the leaves of a tree instead of going to the roots for the purpose of finding and removing the cause of decay. The temperance movement is directed against alcohol, and, to some extent, against tobacco, although there are many temperance organizations that do not attack tobacco. But I hold that true temperance goes still further back, and applies to anything and everything that can injure either body or mind.

How absurd it is to declaim against alcohol, and not to denounce tobacco with equal emphasis; and how absurd it is to preach against tobacco and alcohol and not to declare with equal emphasis the evils of using tea and coffee. It is easy for the boy who sees his mother take a cup of tea or coffee because she feels nervous, or has an unusual amount of work to do, or is going to receive callers,— it is easy for that boy mentally to substitute beer for tea or coffee, and to think that when he gets out of sorts, or feels weak and downhearted, he may as well take beer as tea or coffee.

The fact is, there is not so much poison in beer as in tea, in equal quantities. It would be more dangerous to drink twenty cups of strong tea than an equal quantity of beer, because the effect would in all probability be more serious. The poison of the thein in tea is a much more deadly poison than alcohol. Thein is a narcotic drug. Coffee also contains the same powerful narcotic. Dr. Edward Smith and his colleague at one time drank a decoction of coffee made from four ounces of coffee berries, and in three minutes they fell to the floor, and lay there insensible for three hours. You will find this statement in Dr. Edward's work on "Foods." Any temperance organization that does not work against all narcotics and their use as stimulants is not thoroughgoing. The sin of intemperance does not consist in drinking alcohol, tea, or coffee; it consists in voluntary, artificial stimulation; it is taking into the body a poison which makes a man feel strong when he is not strong, happy when he is not happy, warm when he is cold, which makes him think that he is rich when he is poor;— the sin of intemperance consists in taking into the body anything that depraves a man's faculties and destroys his use of himself.

Tea and coffee afford artificial stimulation just the same as alcohol, only in a different way. A woman feels weak and nervous and has a headache; she takes a cup of tea and feels better. But she is not better; her real condition is hidden from her by the artificial stimulant that she has taken. A man feels nervous and uncomfortable; he takes a cigar, and feels relieved; he is not uncomfortable now, but his condition is worse than it was before, because he has added tobacco poison to his other troubles.

Thus I might go on illustrating this subject and demonstrating the fact that so-called "temperance reform," as con-

ducted to-day, is not thoroughgoing. We must go back to the home where the root of the matter lies. The conditions of the home must be rectified; wives and mothers are continually making drunkards of their families at the dinner-table and the breakfast-table; I have seen cases that demonstrated the truth of this statement.

Here, for instance, is a person who takes a breakfast of fried ham and eggs, which are about as digestible as a well-greased boot,—this is a fair comparison; for water can not get through a well-greased boot, and gastric juice can not get through a well-greased egg. The man who has eaten a breakfast like this, adding perhaps fried cakes and fried potatoes, goes to his business, and in a few hours begins to feel as if he had a stone in his stomach; he has a heavy load that annoys him, and weighs upon his spirits; he feels a heaviness in his heart as well as in his stomach; his head is logy and his arms hang down from weariness, his legs and feet are tired, his stomach feels irritated. What is he to do in order to obtain relief? He hardly knows what to do. He goes to the doctor, who gives him a tonic,—perhaps a prescription which reads, "So much good French brandy, so much whisky, so much cinchona bark," and sundry other things; the man feels better after he has taken the prescription. The next time, in order to produce the same effect, he takes a little more; his stomach feels better, and he takes more. But by and by he finds that he can take something that will produce the same effect and is cheaper,—something contained in the prescription; he can not afford to keep on paying a dollar for a small bottle of medicine, so he tries whisky; and he feels just as well on whisky as he did on a prescription of whisky with a few flavorings, hence he concludes that it is the whisky that helps him. The whisky is "strong," and he has the idea that if he takes something strong it will make him strong. Many people have that notion: a man eats a strong ox thinking that such food will make him strong, or he drinks strong drink to make him strong, just as a woman who feels weak drinks strong tea to make her strong. One might as well stand out in a strong wind, expecting to be made strong because he is breathing a strong wind.

Boys and girls grow up seeing their fathers and mothers practising intemperance before their eyes. The son sees no reason why, when he grows up, he should not take a glass of beer for the same purpose that his mother took the tea or the coffee; and the principle is the same, the sin is the same. There is no physiological or psychological difference in the sin. We shall never have successful temperance reform until all kinds of intoxicants are abandoned, until we teach the children in the home, as soon as they are old enough to understand, that temperance is a thoroughgoing thing; that it means the right use of all good things and the absolute disuse of all bad things; that it never means the moderate use of any evil thing. When fathers, mothers, and children have learned and conscientiously practise in their daily lives this principle, there will be no more need of social reform, "purity" reform, temperance reform. Natural tastes and appetites will have overcome the artificial, and society will be reformed.

Of Interest to Insurance Holders.

A leading English life insurance company recently authorized the announcement that all applications for insurance on the lives of vegetarians sent to that company through a certain agency would be entitled to a rebate from the premium for five years. At the end of the five years, the results are to be specially considered, and, if satisfactory, further concessions will be made. Those who have had practical experience with vegetarianism will have no doubt as to the outcome of this venture of the insurance company. The result of this experiment will unquestionably be another potent argument in favor of dispensing with "tuberculous beef and parasitical pork" by those who desire to live to a good old age.

ANSWERS TO CORRESPONDENTS.

Food Combinations.— S. H. C., Washington: "What do you think of the combination of wheat, corn, and rice put up by the R. T. Davis Mill Co., St. Joseph, Mo., to be used for griddle-cakes, muffins, and gems?"

Ans.— Wheat, corn, and rice ought to be a good combination. We have made no trial, however, of the special preparation referred to. We do not recommend eating griddle-cakes, muffins, or gems made with baking-powder.

Fat.—D. F. H., California: "I am nineteen years of age, live very plainly, and am very thin. What would you advise as a flesh producer?"

Ans.— A diet of nuts, fruits, and grains, giving special prominence to nuts.

St. Vitus's Dance — Varicose Veins — Mushrooms.— L. G.: "1. What can be done for a lady seventy-two years old who has smothering spells, and who has had St. Vitus's dance for five years? 2. What diet would you advise? 3. Is medicine necessary? If so, what kind? 4. Another lady has had varicose veins fifteen years, which never break out, but make blue spots. She now has dropsy. Can she be cured? 5. What diet and medicine would be best? 6. Are mushrooms good for food?"

Ans.— 1. This case is a serious one, and should be placed in the hands of a skilled nerve specialist. A few months at a sanitarium might possibly help her.

2. Probably a plain diet of fruits, grains, and nut preparations would suit the case. Milk, sugar, meats, fried foods, and all indigestible substances should be avoided.

3. We know of no medicine likely to be of special benefit in this case.

4. The lady can probably be helped. Whether or not she can be cured depends upon the cause of the dropsy.

5. There is no special diet for dropsy. The patient should eat wholesome food, avoiding meats, animal fats, condiments, and irritating and indigestible food.

7. Mushrooms are not worth eating.

Canker in the Stomach.— C. M. C. C., Illinois: "1. What causes a canker in the stomach? 2. What foods should be avoided? 3. Can any bad results follow the use of tincture of chlorid of iron? Three hours after a full meal I experience a sudden smarting sensation covering a large surface, followed by a feeling as if the point of a knife were stabbing inside of the stomach. The pit of the stomach is painful to the touch, but is relieved by hot applications. 4. What will effect a cure?"

Ans.— 1. This condition exists most frequently in connection with hyperpepsia. There is evidently disordered digestion.

2. Acid, irritating, and indigestible foods.

3. Yes.

4. A fomentation over the stomach three or four times a day for ten or fifteen minutes, and the moist abdominal bandage worn over the stomach and around the body at night, will doubtless prove beneficial.

Flatulence — Neuralgia of the Stomach — Walnuts.— A lady in Pennsylvania, nearly sixty years old, writes: "1. Would you advise a diet exclusively of fruits, grains, and nuts for flatulence, belching, and neuralgia of the stomach and bowels of ten years' standing? 2. Should vegetables, eggs, and milk be used at the same meal? 3. Are butternuts, black walnuts, and hickory-nuts, such as grow here, as good nuts as one can use?"

Ans.— 1. Yes.

2. No.

3. The best nuts are almonds and filberts. Peanuts are also wholesome, if properly cooked or otherwise prepared.

Malt — Jaundice.— Mrs. M. E. W., South Dakota: "1. What effect does malt have on a person troubled with dyspepsia? 2. Is malt bad for the liver if one has jaundice? 3. Is malt strengthening? 4. What diet would you prescribe for a person with jaundice, and who has been troubled for some time with indigestion and constipation?"

Ans.— 1. Malt is sometimes useful in cases in which there is inability to digest starch.

2. No.

3. Only as it furnishes food material.

4. Avoid milk, animal fats, fried foods, pastries, meats of all kinds, coarse vegetables. The diet should be farinaceous,—stewed fruits, ripe fresh fruits, nut products, especially malted nuts and nuttola.

Exercise.— J. W. C., California: "1. What is the proper time for a person to take exercise whose employment is sedentary? 2. Is ten or fifteen minutes' exercise on a pulling machine, just before retiring, beneficial?"

Ans.— 1. Any time is better than none at all. A very good time is at night just before retiring, on arising in the morning, and at noon. It is better to devote a short time to exercise two or three times a day than to exercise but once a day.

2. Yes, but more work is needed.

Constipation—Gas in the Stomach.— I. G. M., Illinois, is troubled with constipation, and with gas in the stomach two or three hours after meals,

accompanied by a confusion of objects and pain in the eyeballs. He eats butter, eggs, and milk, but very little meat. He suffers little or no pain, but wishes to know if the trouble might develop into something chronic.

Ans.— Yes. Certainly the condition should be removed by proper treatment.

Catarrh of the Intestines—Ulcerated Bowels.— H. R., Colorado: "1. Is catarrh of the stomach or ulcerated bowels curable? 2. What is the proper diet and mode of treatment? 3. Would a change of climate be beneficial?"

Ans.— 1. Yes.

2. Such cases are complicated and obstinate. A few months' sojourn in a good sanitarium is required.

3. Change of climate has little effect upon such cases.

Pain in Left Side.— M. D., Michigan, wishes to know the cause and cure of a bad feeling in the left side after eating liquid food or drinking. He has been trying a dry diet, and drinking a small quantity of water an hour before meals, but the trouble is no better.

Ans.— The stomach is probably prolapsed. The symptoms do not indicate cancer.

Danger in Cats as Pets — Rhubarb.— T. S. McC., Pennsylvania: "1. Is there any truth in or foundation for the popular saying that a cat is likely to take the breath of a child if left in the room with it? 2. What is the value of rhubarb as an article of diet?

Ans.— 1. No.

2. It is worthless and absolutely unfit to use for food.

Decay of the Teeth.— W. H. L., New York, desires to know if there is any dietary that will prevent the decay of the teeth and the formation of germs in the human body.

Ans.— An aseptic dietary; that is, a diet consisting of fruits, thoroughly cooked grains, and properly prepared nuts.

Bowed Legs.— R. E. H., Michigan: "What treatment would you advise for a sixteen months' child whose legs are badly bowed? He walks a great deal, and his ankles seem strong."

Ans.— An apparatus which may be obtained from any surgical instrument maker. Possibly an operation may be needed later.

Voice — Hyperpepsia — Flour. — A clergyman, Ontario, says his voice is very broken and weak. He lives mainly on granose and subacid fruits. "1. What acid would strengthen and clear the voice? 2. How long and how short a time before meals is it best to drink water? 3. Should the water be tepid? 4. Would eggs be good in addition to a diet of granose, zwieback, baked potatoes, peas, and beans? 5. What is 'whole-wheat' flour? 6. Can it be manufactured by an ordinary roller flour mill?"

Ans.— 1. There is no acid by which the voice may be cleared or made strong. The congestion must be relieved by proper treatment. The pocket vaporizer and the throat pack are among the best remedies.

2. From half an hour to an hour.

3. Water at the ordinary room temperature is generally most agreeable.

4. Yes, but there are more wholesome foods than eggs.

5. Whole-wheat flour is a flour actually made from the whole wheat. So-called whole-wheat flour is not generally made of the whole wheat, but of the various constituents put together.

6. We think not.

Ralston System. — C. D. B., New York: "1. What is the Ralston System? 2. Who originated it? 3. Has it grown out of expertness and experience? 4. Is it worth the time and attention necessary to follow it?"

Ans.— 1. We know very little about it.

2. We do not know.

3. It is so claimed.

4. Many claim to have been benefited.

Squeaking Joints. — M. Mac G., Michigan: "1. What is the cause and cure of squeaking of the knee-joints when moved? 2. Will the knees ever become stiff and useless?"

Ans.— 1. A chronic diseased condition of the articulating surfaces.

2. There is pretty good prospect that they will. If the case is taken vigorously in hand, a cure may be effected.

Disagreeable Odor — Freckles.— F. V. F., New York: "1. What is the cause of and remedy for a disagreeable odor, different from that of perspiration? 2. Is there a permanent cure for freckles?"

Ans.— 1. Malodorous perspiration is a not uncommon disease. Bathing the parts with vinegar or soda will usually effect a cure.

2. Freckles produced by temporary exposure to the wind are usually easily removed by bathing the skin with lemon-juice, borax, and similar preparations. But freckles which are present at all times and all seasons can not be removed.

Catarrh of the Stomach.— W. H. H., Illinois, wishes advice (1) as to treatment of a baby fourteen months old, suffering with catarrh of the stomach. 2. A lady is troubled with mucus in the throat. She has peculiar noises in her head, and although she can hear a conversation in a cable-car, one has to talk very loudly to her at home. What remedies would you suggest?

Ans.— 1. The case will be a very difficult one to manage. The most wholesome foods must be selected for the child. Farinaceous foods are best. Browned rice, granola, and granose are especially wholesome foods. A small amount of stewed fruit can probably be tolerated. Malted nuts or nuttola will probably agree well with the child, especially the last-named preparation."

2. The patient has catarrh of the throat and ears. She should use a pocket vaporizer for ten or fifteen minutes six or eight times a day, for nose, throat, and ears, and should consult a good specialist as soon as possible.

Constipation — Torpid Liver.— H. H., Pennsylvania: "1. What would you advise for constipation in an eight-months-old nursing baby otherwise healthy? 2. What treatment would be beneficial for one who has torpid liver, can not digest starch, and has uric acid in the system? No meat has been eaten for a year."

Ans.— 1. Give the child malted nuts along with its other food.

2. Fomentations over the stomach, a moist abdominal bandage at night, a cool sponge bath every morning, a diet of malted nuts, granose, and fruit, with various wholesome grain preparations.

Eczema — Water.— N. L. B. W., Wisconsin: "1. Is water poisonous to eczema? 2. Is eczema so different from other skin diseases that water which relieves salt-rheum is poisonous to it? 3. Do mothers bathe their babies too much? 4. Should babies be bathed oftener than two or three times a week?

Ans.— 1. Water is frequently irritating in cases of eczema, especially when there is a moist eruption.

2. Salt-rheum and eczema are the same. Water often gives relief, especially warm or hot water, in the dry stage of the disease.

3. Probably not in the majority of cases.

4. The daily bath is advantageous.

Dyspepsia — Rheumatism.— J. H. B., West Virginia, suffers from dyspepsia. His tongue is coated, and he complains of a stupid feeling after meals; he is quite thin. "1. What do you think of Ralstonism? 2. What can be done for rheumatism in the knees?"

Ans.— 1. Do not know much about it.

2. Reform the digestion. Rheumatism is the result of indigestion. In the case described, there is evidently an infection of the stomach. Possibly lavage of the stomach may be required. There should be fomentations daily and a moist abdominal bandage should be worn during the night. A cool sponge bath may be advantageously taken every morning.

LITERARY NOTICES.

DAVID BEATON, pastor of Lincoln Park church, Chicago, in his **"Selfhood and Service,"** deals with the social questions of the day in a clear, fearless manner, stating his conviction that the "new social order" must come through the church. In the working out of the problem, he would have the first step be the cultivation of the individual in all that pertains to an enlightened, Christian selfhood. Then he would bring into the home all that cultivation and refinement, making it a means of uplifting and betterment, not only to its own inmates, but to all who are brought in contact with it. From the home he would have these benefits extend to the church, to society.

The author does not believe in the equal distribution of wealth. He says that "if we may judge concerning God's purpose from his action, it is manifestly certain that equality either in gifts, graces, or material possessions never was a part of his plan." "If we are to learn anything from nature as well as history on this point, then the one fact of life, graven deep upon the rocks, painted on all her blossoms and dyed in her noblest life-blood, is the existence of inequality — inequality of faculties, of opportunity, and of character. But out of the inequality spring her infinite variety, marvelous richness, and unfailing resource." Then he adds, "What stands in the way of a common prosperity is not the unwillingness of the Christian to share his wealth and surrender his privileges, but the laws of nature, which govern the production of wealth, and the laws of the soul, which create personal superiority."

Among those whose wealth has enriched the world he mentions Drexel, Childs, Pratt, and Pearsons. They held their wealth to be a sacred trust, and administered it wisely in the cause of humanity. This the author regards as the true service which wealth must render,—"to count business worship," to treat the physical needs of men as tenderly and sacredly as their spiritual weaknesses.

While we recognize much that is good in the book, we can not agree with the author as to the means of reaching this desirable state of society. He would make man his own saviour, and the regeneration of society to come from its own inherent powers of recuperation; whereas it is not in the power of man to save himself.

Fleming H. Revell Company, publisher, Chicago, New York, Toronto. 12 mo., cloth, gilt top; price, $1.

Battle Hymn of the Kingdom, by Frances Eugenia Bolton, Pacific Press Pub. Co., Oakland, Cal. This little brochure is a religious poem, a parody on the "Battle Hymn of the Republic." The theme is excellent, and the illustrations, of which there is one for each page, while in themselves real gems of art, present such a vivid portrayal of the subject matter as to make of the whole one of the most striking and beautiful of holiday booklets.

Mr. Benjamin Kidd, the distinguished English sociologist and publicist, author of "Social Evolution" and "The Control of the Tropics," who after more than two months' travel and observation from Boston to San Francisco has just left our shores, devoted the closing day of his visit, in which he heightened his already great American reputation, to putting upon paper his views of the international and colonial responsibilities and duties of the United States, as enforced and modified in his mind by his own personal experiences and observations in America. This paper appears in the December number of the **Atlantic Monthly.**

Apropos of the name **Cosmopolitan** it is rather curious to note that the December issue of that magazine contains one article having to do with Spain, another with India, another with Japan, another with Cuba, another with Jamaica, another with England, another with Rome, and still another with France. This is a pretty wide range.

The December **McClure's** contains the first of Miss Ida M. Tarbell's series of articles on the "Later Life of Lincoln." For these articles Miss Tarbell has secured such a wealth of new material that they promise to be as much of a new revelation of the man Lincoln as her articles on Lincoln's "Early Life" were; and as really new matter regarding Lincoln never fails to be interesting, the articles are sure of a wide reading. The magazine also contains the first instalment of two other serials, one by Captain Mahan on the naval operations in the recent war; and one by Rudyard Kipling, entitled "Stalky & Co.," a story.

In response to the demand of its readers, **Success,** that splendid magazine for wide-awake people of all ages and occupations, is issued weekly, beginning with December 1, and at the very low subscription price of $1.50 a year.

Books and Pamphlets Received.

"A Primer of Psychology and Mental Disease for Use in Training-Schools for Attendants and Nurses and in Medical Classes." By C. B. Burr, M. D., medical director of Oak Grove Hospital for nervous and mental diseases, Flint, Mich.; formerly medical superintendent of the Eastern Michigan Asylum; member of the American Medico-Psychological Association, etc. Second edition, thoroughly revised. 116 pages, extra cloth, $1 net. The F. A. Davis Co., publishers, 1914–16 Cherry St., Philadelphia; 117 W. Forty-second St., New York City; and 9 Lakeside Building, 218–220 S. Clark St., Chicago, Ill.

"Practical Urinalysis and Urinary Diagnosis: A Manual for the Use of Physicians, Surgeons, and Students." By Charles W. Purdy, M. D., LL. D. (Queen's University); Fellow of the Royal College of Physicians and Surgeons, Kingston; professor of clinical medicine at the Chicago Post-Graduate Medical School. Fourth, revised edition, with numerous illustrations, including photo-engravings and colored plates. In one volume, 365 pages, bound in extra cloth, $2.50 net. The F. A. Davis Co., publishers.

"Seven Essays on the Subject of Practical Occultism." By Ernest Loomis. Published by Ernest Loomis and Co., Chicago. 135 pages, cloth, price, $1.25.

"Tobacco: Parables, Poems, and Pithy Points." By D. E. Scoles. Published by the author, Washburn, Mo. Price 2 cents each, $1.60 per hundred.

"Further Observations Regarding the Use of the Bone-Clamp in Ununited Fractures, Fractures with Malunion, and Recent Fractures with a Tendency to Displacement." By Clayton Parkhill, M. D., of Denver, Colo. Reprinted from the *Annals of Surgery*, May, 1898.

"Some Observations Regarding the Course and Management of Cataract." By J. H. Woodward, B. S., M. D., of New York City.

"Transillumination of the Stomach with Demonstration on the Person;" "Gastroptosis;" "Chronic Catarrh of the Stomach;" "Intestinal Autointoxication." All by Charles D. Aaron, M. D., Detroit, Mich.

PUBLISHERS' DEPARTMENT.

I WANT TO KNOW.

ONE of the commonest diseases at the Battle Creek Sanitarium is Interrogation. "I want to know, you know" is its distinguishing symptom. The first manifestation of the symptom usually appears immediately after the patient has been sent to a diet table.

"Beefsteak is digestible, and makes me feel stronger: why can't I have it?" he wants to know.

Rational Medicine practises at the Sanitarium, and is always ready to answer questions.

"Because," it says to this patient, "feeling stronger and being stronger are not identical; you have eaten beefsteak all your life, and now you're sick. That's one good reason for trying a change. Besides, beefsteak or any other meat always does more harm than it does good. It adds unnecessary poisons even to the healthy system, and dangerously burdens the excretory organs of people whose strength has been reduced by disease or wrong habits of life. It is almost impossible in these days to get uncontaminated meat, and it is a great waste of time and energy to eat it. It does not give real strength or nourishment, but is a stimulant, and the constant use of it leads, quite likely, to the very disease from which you are suffering. It is now generally recognized that the eating of flesh and the drinking of tea and coffee are directly productive of the formation in the body of a highly injurious substance, uric acid, the presence of which is a predisposing cause of many serious diseases,— Bright's disease, neurasthenia, rheumatism, and gout, for instance."

"There's another thing," objects the critic; "I'll admit that drinking quarts and quarts of tea and coffee isn't advisable, but what is the harm in just one cup of coffee for breakfast? It braces you up for the entire day."

"But that's just where you are hitting the bed-rock principle of this institution," declares Rational Medicine. "We don't try to brace you up for the day. We wish to make you well so you will not need bracing up. We wish to lift you up above the level of all disease and of any ordinary fatigue. Not only that, but we wish you to learn to keep yourself there,— to live beyond the reach of germs, parasites, aches, and pains. You can not do that by depending upon stimulants of any kind, whether tea, coffee, coco, alcohol, tobacco, meat, or drugs."

"Now, why do you put drugs, by which I suppose you mean medicinal drugs, into that category?" exclaims the interrogator.

"Because," answers Rational Medicine, "most of the drugs used in general practise are really nothing but stimulants. We believe that drugs too often merely alleviate pain,—that is, kill the watch-dog that is warning us of danger,—or aggravate the malady without doing anything to remove the cause. We believe that we can accomplish more by physiological measures, hydrotherapy, electricity, massage, exercise, proper food, and natural sleep than by relying upon tonics or other foreign substances introduced into the body. We believe that nature is the only successful physician, and that it is our business to assist and not thwart her sensible measures.

"Of course we do not altogether discard medicinal agents. Each valuable drug has its place. It must be remembered, also, that the patients who visit this institution have exhausted the resources of medicinal remedies before coming, and in the majority of cases are advised to come here by their physicians for this very reason. An eminent physician, in sending us a patient, once remarked, 'I have in nine years given my patient all the tonics of the materia medica, yet he is no better. I think he needs a little physiological stimulation.'"

"It hardly seems reasonable, however, that having a hot cloth applied to your spine three times followed by a two-minute cold bath and a rub could take the place of some good strong medicine, if you were really down sick."

"Perhaps one application alone of physiological treatment would not have the decided effect that one dose of medicine produces," says Rational Medicine, "but neither would it have an injurious reaction. You see, we think always of the future. The longer you persist in taking drugs for insomnia or neuralgia, for example, the longer you must; while the longer you continue nature's treatments, the better you get, until you are perfectly healthy and sound."

"But some of your requirements seem very arbitrary," says the skeptic, "not letting us drink at meals or for two hours afterwards, for instance, and forbidding the use of pepper and vinegar."

"It is not we who are arbitrary in that, but nature," is the answer; "and 'arbitrary' is really too harsh a word, for it is simply a question of your own good. Nature wishes you to digest your food and to have a thoroughly healthy body; but drinking at meals prevents the secretion of a sufficient quantity of saliva, and interferes with the thorough mastication of food; cool drinks after eating lower the temperature of the stomach and dilute the gastric juice, thus stopping for a time the process of digestion. If the food is not passed out of the stomach within the proper period, it begins to ferment and decay, causing poisons to be distributed throughout the body; and all this mischief may be done by a drink of water at the wrong time, if a person has a crippled stomach. As for the pepper, vinegar, mustard, and other condiments, they produce irritation of the mucous membrane, create thirst, destroy the natural flavors of food, and lead to overeating."

"Is it because you are afraid that we will overeat that you give us only two meals a day?"

"Not exactly. Here again the reason is physiological; the plan of two meals a day, breakfast at seven or eight and dinner at two or three, gives the digestive organs the time necessary, not only for digesting the food eaten, but also for rest and recuperation before the next meal. It is better to dispense with supper than breakfast, as this arrangement is more conducive to sound and refreshing sleep."

"But why do you insist on our eating such hard foods all the time?" is one of the invariable questions.

And the answer is, "The foods are not so hard as they are dry. Dry foods are absolutely necessary for persons suffering from digestive disorders; they stimulate the flow of saliva and necessitate thorough mastication. They also discourage overeating, and are favorable to the cultivation of an appetite for natural and simple dishes."

Another common question refers to the combination of foods. "Why may we not eat peaches with cream and sugar, or vegetables and fruit together? It seems as if some of these requirements were invented on purpose to make people miserable."

"On the contrary, people have been made miserable by what they ate, from time immemorial, and they formerly knew very little of the reasons. But it has been found that certain foods, perfectly wholesome in themselves, interfere with the digestion of other equally wholesome foods, if eaten at the same meal by persons with slow digestion. For example, fruits taken alone are quickly digested and pass out of the stomach. But vegetables contain considerable coarse, woody material, and require a much longer time for digestion, so that fruit taken with vegetables by persons with slow digestion, is retained in the stomach and soon undergoes fermentation, which extends to the entire mass of food, causing the production of organic acids and gases. Therefore a person who has imperfect digestion or any kind of stomach difficulty must

learn to choose combinations of foods that will digest together; not that he must make a martyr of himself and forego either fruits or vegetables, but he must simply forego the one or the other at a given meal."

Perhaps the most common question of all is this: "How soon do you think I shall be well enough so that I can go home and do as I please?"

And the answer is, "If you mean to eat as before, to use tea and coffee, to smoke, and to violate other laws of health just as you used to, in other words, to follow the same course of life that brought you here, we say, Never. One is never well enough to live contrary to nature, to indulge artificial tastes, to eat unwholesome foods, to keep late hours, to neglect exercise and recreation in the open air, to live a selfish life, to worry about business or pleasure, to strive and struggle for empty honors and preferment.

"The foundation principle of this institution is expressed in that old Greek motto, 'A sound mind in a sound body.' We believe that the two are absolutely dependent each upon the other, and that the same course that will make a man well when he has been sick, will keep him from becoming sick when he is well. We believe that the relation of the body to the mind should be carefully studied and considered, and that every man should regard his body as a precious instrument, a costly machine, the most valuable piece of property he owns, to be guarded and cared for faithfully and sacredly, and under no circumstances to be abused for personal gratification or indulgence."

ANNUAL CANADIAN EXCURSIONS VIA THE GRAND TRUNK RAILWAY SYSTEM.— The Grand Trunk Railway System calls your attention to its annual Canadian excursions which will be given on Dec. 16, 17, and 18, 1898. Tickets to all Canadian points, including points on the main line, the Intercolonial railway between Montreal and St. Johns, New Brunswick, will be sold at a single fare for the round trip. They will be valid to return up to and including Jan. 7, 1899, no tickets being sold east of Pontiac on the D. & M. division and Imlay City on the C. & G. T. division. Attention of intending excursionists is called to the long limit given on this cheap excursion, offering an opportunity to visit Canadian friends and relatives during the holidays at cheap rates. The Grand Trunk Railway will run three trains daily in each direction, with Pullman sleepers on night trains and parlor cars on day trains to all prominent points. Tickets are optional going and returning via Detroit or Port Huron and the great St. Clair tunnel. Rates, tickets, and information may be had from all agents of this company and connecting lines. E. H. Hughes, Ass't G. P. A., Chicago; Ben. Fletcher, Trav. Pass. Agent, Detroit.

TO THE LAND OF SUNSHINE.— Take the Sunshine Route from Chicago to Los Angeles, San Francisco, and other points in California, and escape the rigors of winter in the East and North. Pullman tourist cars for first-and second-class passengers leave Chicago every Saturday at 2 P. M. via the Chicago, Milwaukee & St. Paul Railway to Kansas City, thence to California via the Atchison, Topeka & Santa Fe Railway,— a real Sunshine Route. This is the earliest afternoon train leaving Chicago for the West after arrival of morning trains from the East, thus avoiding tedious delay. The Sunshine Route is essentially the best and most patronized through car line for men, women, and children. Every attention paid to the needs of passengers en route. Send for a Sunshine Route time-table folder. It costs nothing. Address Harry Mercer, Michigan Passenger Agent, 7 Fort street, W., Detroit, Mich.

CHRISTMAS AND NEW YEAR'S HOLIDAY RATES.— The Grand Trunk Railway system will issue holiday excursion tickets at the rate of one and one-third fare for the round trip to and from all stations on their system west of the Detroit and St. Clair rivers, and will also sell to all stations of connecting lines. These rates will include Canadian points west of and including Toronto, Niagara Falls, and Buffalo, also Chicago. Selling dates for Christmas are, Dec. 23, 24, 25, and 26, 1898; for New Year's, Dec. 30 and 31, 1898, and Jan. 1 and 2, 1899; all being valid to return up to and including Jan. 3, 1899. Call on agents for time-tables and information.

BOBBIE had been studying his dear old grandfather's face a long time.

"Well, Bob," said the old gentleman, "do you like my face?"

"Yes, grandpa," said Bobbie; "its an awfully nice face, but why don't you have it ironed?" — *Dietetic and Hygienic Gazette.*

HAD SEEN LOTS OF THEM.— A teacher asked a class how many had seen a magnet. A sharp boy said he had seen lots of them.

"Where?" inquired the teacher, much surprised.

"In the cheese."