GOOD HEALTH

A Journal of Hygiene.

VOL. XXXII. AUGUST, 1897. NO. 8.

THE NOBILITY OF HEALTH.

BY J. H. KELLOGG, M. D.

IN European countries especially, there is an aristocrasy, or so-called nobility. When one of these nobles comes to this country, a great deal is made of him; he is wined and dined wherever he goes, and every social circle opens its arms to receive him. There is no inquiry made as to his moral worth, — or his physical worth, for that matter; the mere fact that he has the prestige of nobility opens every door to him. Yet when one looks into the matter closely, he finds that the peculiar characteristics of these noble families are often not really such as to recommend them to great respectability. And not infrequently the title of nobility is purchased; indeed, there is scarcely a European country in which a man cannot become a nobleman, if he cares to pay the price. Neither are these noble families particularly to be respected for their mental attainments. The members of the English House of Lords at the present day are recognized as inferior in mind and talent to those of the House of Commons. The former is made up of men who have their places because they have titles — they are hereditary legislators; while the House of Commons is made up of men who are elected to their places because of their special qualifications; they represent the people, while the House of Lords represents a long line of defunct ancestors.

People boast of their "blue blood," when the blue blood is really an indication of disease. Blue blood is very apt to be bad blood, for it too often represents a long series of transgressions, — a pedigree that is anything but good, so that the blood is filled with scrofula, consumption, insanity, etc., the results of evil habits, idleness and luxury, and general negligence of the laws of health. So there is nothing particularly desirable in what is commonly called "the nobility."

But there is a true nobility, — at any rate there is an opportunity to build up a true nobility — a real aristocracy — on a foundation that is worthy. This sort of nobility is worth considering. In what does this true nobility consist? It should consist of a pedigree in which for many generations the men had been upright, — a pedigree characterized by rectitude and health, in which there were no drunkards or gluttons, a pedigree in which obesity, consumption, rheumatism, and constitutional maladies were not to be found. There is a great deal of truth in the remark of Oliver Wendell Holmes, that "Every man is an omnibus in which ride all his ancestors." So a member of the real nobility is one who has in his omnibus no constitutional wrecks, no obese or gouty people, no chronic rheumatics. Any man would have a right to be proud of such an ancestry. The simple fact that a man is descended from some famous or titled personage who lived a thousand years ago does not entitle him to respect; the question is, "What is the

man himself?" The fact that a thousand years ago there was a man who was stronger than his neighbors, and thus succeeded in getting supremacy over them, certainly does not entitle his descendants who live to-day to any particular respect; but if they could show that for a thousand years there had been no constitutional maladies in their family, and that their ancestors had generally died of old age,—that would be something to boast of.

Unfortunately health is not considered as it ought to be; it is seldom held at its true value until it is lost. People usually seem to consider themselves possessed of a capital of vitality which they can never exhaust. They draw their drafts on it, and as they are readily cashed, they think it will always be so. But by and by a check comes back refused. Nature says, "You have no more capital on deposit; you are bankrupt."

I believe that the popular practise in esteeming physical health so lightly is a vestige of the darkness of the Middle Ages. If we go back to early times, we find that the highest possible estimate was placed upon health; and it was considered the chief of all the blessings of life. Among the ancient Persians, the nobility was made up of health aristocracts. Cyrus lived, until he was fifteen years of age, on barley, water-cresses, and milk, and was not allowed to take anything else; after that, honey and some other simple foods were added to his bill of fare. Among the Greeks and many other ancient nations health was so highly valued, and decrepitude and decay looked upon with such abhorrence, that a weakly or deformed child was never allowed to breathe. In the palmy days of Greece the habits of every man, woman and child were carefully regulated from the earliest period of life. The rules of hygiene were laid down by the government; a bill of fare was made out for each child up to a certain age, and from that age up another bill of fare and exercise was furnished him. It was required by law that every man and woman should be disciplined, reared, and trained in such a way as to acquire strong muscles and vigorous physical health. This resulted in producing a nation that was unsurpassed in physical vigor and endurance; and from the early ages down to the present time the Greeks have been unexcelled in health, beauty, and physical development.

It has been very well said that physical beauty is only a material expression of a beautiful thought,—an expression of good conduct and rectitude of life. When we see a beautiful face, it is simply an incarnated expression of beauty of conduct and character somewhere in the past,—a long way back, it may be—but somewhere in the past there has been a beautiful life, and this beautiful face is simply an expression of that life. Beauty without physical and moral health is impossible. The ancient Greeks wrote over their doors the motto, "A sound mind in a sound body." They did not believe it possible for a man to be sound mentally and morally without being sound physically.

Among the old Romans the cultivation of health was made the main business of life. When the Pagans ruled Rome, that city was full of the most magnificent baths. Those who have visited Italy and Rome will remember the ruins of those wonderful baths built by the Emperor Caracalla, where thousands of bathers could be served in a day. There were also the wonderful baths of Diocletian, of which the Pantheon constituted the vestibule. Those baths were in constant use by the populace, and they were patronized, not simply for the purpose of cleanliness, but for health. There were also rooms pro-

QUEEN LOUISE.

vided in connection with these baths for all kinds of healthful exercises. But, unfortunately, in the early centuries of the Christian Era, all these things were done away with,—these magnificient baths, the means of physical health, were torn down, and their stones built into churches, of which Rome already had enough. There are hundreds of immense churches that have not more than a hundred worshipers on ordinary days, and even on special days are never filled. Thus Rome is to-day a city of churches, but there are no baths; and we have it on good authority that for a thousand years the bath was a thing unknown in Rome; indeed, writers of those times tell us that neglect of the body was counted among the cardinal virtues.

As a result of this false doctrine introduced during the Dark Ages, the body was neglected, abused, and tortured, with the idea that the soul would thus be made better. And sad to relate, we have not seen the end of the practical workings of this theory yet. We often hear, for instance, about the ministry of sickness, when sickness is really the greatest possible misfortune that a person can have. I do not believe that sickness does any one any good in the long run. An affliction or disappointment now and then, which breaks off one's plans and checks his ambitions, may have a good effect upon him by helping him to see how powerless he is to carry out all his plans; but chronic sickness certainly can not help any one. The man so afflicted gets up in the morning with a bad taste in his mouth, his stomach acid, all the fluids of his body impregnated with poisons. His mind is perverted by the poisons in his blood; and he looks at everything through colored glasses; the whole world appears abnormal to him. How can such a person be happy? How can he be calm and self-controlled? It is impossible. The fact is, a great share of the total depravity in this world is really total indigestion. One needs but to visit the jails, the workhouses, and the prisons of our cities, to become thoroughly convinced of this. In every large prison there will be found a large number of epileptics; they are many times as numerous as in society at large. Doctor Abernethy used to say that every sick man was a rascal. That may be taking rather strong ground, but his idea was, that every sick man had been wicked in violating the laws of his being in some respect, or he would not be sick.

What a boon it would be to the race, if men would only become convinced of the value of health, and of the necessity of training for it! The more gold a man has, the greater are his efforts to obtain more—and why should it not be so with health? Disease makes one narrow, morose, unhappy, disagreeable, useless; while in health there is a spontaneity of energy, a delight in effort, in work, an irresistible disposition to use the faculties. Why should we live in the slums of disease and feebleness when there is a true nobility, a genuine aristocracy, a royalty of health, which may be ours if we will make it our aim and purpose in life?

GOD give us men! A time like this demands
Strong minds, great hearts, true faith, and ready hands—
Men whom the lust of office will not kill;
Men whom the spoils of office cannot buy;
Men who possess opinions and a will;
Men who have honor; men who will not lie;
Tall men, sun-crowned, who live above the fog,
In public duty and in private thinking.

—*J. G. Holland.*

BIRD'S-EYE VIEW OF THE BATTLE CREEK SANITARIUM AND GROUNDS.

SEEN THROUGH THE EYES OF A VISITOR.

By MRS. MARION B. BAXTER.

I KNOW not where God's islands lift their fronded palms in air;
I only know we cannot drift beyond his love and care.

—*Whittier.*

ON THE VERANDA.

IF my memory serves me true, it is thirteen years since I first made the acquaintance of this Sanitarium and its management. The years have gone by, no one knows where,—it is the way with years,—and once again I am under this hospitable roof. Nor is there any lack of companionship; there are at least five hundred other guests, all of them in pursuit of health—and most of them find it. Many of them are in wheel-chairs with attendants; others swing from hammocks under the tall old oaks, or wander over the wide-stretching lawns, bravely striving to forget that they are ill. And somehow it has seemed to me that there is an unspoken creed which obtains here more than at almost any

other place I know, and it is this : —

" Scatter seeds of sunshine while you may."

Very naturally the interest of the newly arrived visitor or patient centers on the menu, for it is widely understood that foods and drink enter largely into the treatment here. To the initiated, the word "diet" brings no terror. If one desires meat, he may have it ; for this is the place to find the best that can be secured. But it often comes to pass, as in my case, that after several days at these bountiful tables the desire for flesh food passes away. There is such a variety of dishes made from these health foods, such an abundance of fruits and nuts, such healthful drinks, — pure juice of the grape, milk from their own herd, caramel-cereal, rich in flavor, and the best substitute for coffee on the market, — that I forget all about meat. And speaking of the health foods, I have incidentally learned that the profits from the sale of them and the cereal coffee go directly into the missionary fund, and that in all this institution there are no high-salaried men or women. Surely, —

THE SUMMER HOUSE.

" The greatest thing in the world is love."

THE FOUNTAIN.

Each day, sitting by the wide staircase that leads to the spacious dining-room, one may see a demure little miss buried beneath the wilderness of flowers which she offers for sale. A white card attached to the flowers announces that they are from the Haskell Home, — and I may add girl and all. In a dim way I knew something about the Haskell Home, but not until I had paid a visit there did I know its history. The story is sweet, and makes one's blood run quicker. I will tell it to you : Some years ago, among the guests here, was a Mrs. Haskell, well

LUNCH IN A PRIVATE ROOM.

IN THE GYMNASIUM.

known to Chicago people because of her rich gifts to various institutions and enterprises. Like the writer, she was captivated with the missionary spirit pervading this place, but, happily, unlike the writer, had much of this world's store with which to gratify her every wish. And it came to pass that she gave her check for $30,000 to build a home for homeless children. The plan and management were to be left to Dr. Kellogg; the home to be a memorial to her husband, who had fallen asleep. On the wall of a dainty parlor in this beautiful Home are the portraits of these two glorious souls; and as I looked on the portraits and then down the broad corridors to see the happy children coming and going,— as I listened to their voices coming up from the lawn, so cheery, so sweet and birdlike,— something very much like a mist rolled before my eyes, and I went back to a winter's day when I sat beside this queenly woman and held her hand, and we two talked of things past and to come, and I whispered softly to myself, "How splendid it is to yoke up, one with the other, for work for the Master, to pull true and steady for him."

MRS. CAROLINE E. HASKELL.

"In the morning sow thy seed, and in the evening withhold not thy hand."

One day, drawn by very strong ties, I found myself in the gallery of the operating-room of the Hospital, looking down upon a strangely solemn scene. Nurses and physicians, capped, slippered, and gowned all in white, moved softly about the place. Not a spoken word, save that of the surgeon-in-chief. Just for a moment he paused, as if in prayer, before a glass-topped table on which lay a young woman in a sleep very much like death; and then, with tender deftness, he let fall the shining blade that was to send her back to health again. And still she slept on. In and out among the delicate muscles moved the skilled fingers,— with not so much as a moan from the sleeper. Others came in like manner, and in like manner passed out; and as I looked out upon this awesome scene, it did seem to me that God was manifest there in power.

As I write, I look out upon the lawn, and see five young women from as many different States, who graduated into the Hospital, and on the same day, two weeks later, graduated out of it in a way to astonish all who know about it. Very pleasant it is to hear their merry voices, to see their smiles, and to know that once again they climb the hill of health, and that once again Hope sits in her place and swings and sings. Little wonder is it that physicians come from remote portions of this and

ENTRANCE TO THE MAIN SANITARIUM BUILDING.

other countries to look on the skill that makes this Hospital famous. Say of it what you will, and explain it as you may, some who have attended the prayer services held by the nurses and physicians just before they enter this operating-room will always think that God is not far from the place.

Time and space forbid details touching the labyrinth of bath, the swimming-pool, the laboratory, the electrical appliances, the cooking-school and its ideal kitchen (where more delicate dishes are made out of fruits and grains than one can imagine unless he has been initiated into the mysteries of this cooking), hygienic dressmaking quarters, etc. As to the gymnasium, it is one of the largest and best equipped in the country. In this place they teach the value of every bone and nerve and sinew, constantly emphasizing the fact that the body is the temple of God, and that to sin against the body is to sin against him. Pretty good religion this,— and the more there is of it, the better.

AT LAKE GOGUAC.

There is an unwritten law over this place, not unlike the story of the Good Samaritan, which sends the workers out to look after the lowly and the helpless, and leads them, first of all, to seek the kingdom of God in its righteousness,— and perhaps this is why all other things are added. Among the seven hundred helpers who come and go, I have heard no arguments on theological questions. They believe in the Bible, and study it carefully. Nurses and helpers are often seen with the Book

IN WHEEL-CHAIRS.

of books in their hands; they are deeply in earnest, and practise and love more than they preach; and I have come to think that it is what we do, more than what we say, that counts. The religion they believe in, they live. This religion sends them out to the highways and byways, among the sick and the poor, in the great cities, and wherever the field stretches away; and the record runs that Jesus went about doing the same thing.

A Bit of Blessed History.

The Battle Creek Sanitarium opened thirty years ago in a little house where now stands one of the largest and best equipped institutions of the kind in the world. The Medical Missionary Association organized in 1893, became the International Medical Missionary Society in 1897, with an active Board at its head. There has been no noise or fuss, or blowing of trumpets, but during the past three years ten new Sanitariums have been opened in various portions of the earth. Custom House Place, one of the darkest nooks in Chicago, has seen a great light, and thousands of dreary, sick, downhearted, and wretched men have come over the threshold of that home and awakened to better things. Rescue homes for women have been started; homes for helpless children and aged people opened. Forty-eight doctors have been sent forth to teach the new truths of the relation of the body to the spirit, and to heal the sick; two hundred and eighty-three medical missionaries have gone out in the name of the Master into the highways and byways; and I find that during these three years this Medical Missionary Association has met the needs of nearly half a million sick people, and that more than half of these have been charity patients.

This is indeed a bit of blessed history running on like a sweet, sweet story, and over it all, and through it all, is the shine of the Master's face.

THE AMERICAN VOICE.

In nothing do the Americans more generally offend the cultivated ear than in the use of the voice. The high, shrill, nasal tones which one often hears from a group of American girls or American women; the careless, slovenly enunciation from a group of American men, would indicate to a foreigner accustomed to vocal culture, an entire absence of any sort of refinement; for, as a rule, the voice is, more than anything else, the revealer of the presence or absence of culture. But the high, shrill, nasal American voice does not by any means indicate an absence either of refinement or of general intelligence. It indicates lack of training in a specific direction. Unfortunately, that lack makes itself felt in more ways, and more disagreeable ways, than any other.

There is, perhaps, no single accomplishment quite so charming as the possession of a beautiful, cultivated voice — the power of using human speech so as to make it musical in the ears as well as suggestive to the mind. It is a delight to listen to a cultivated voice, even if one does not hear the words which are spoken. The very sounds are restful and agreeable. It used to be said in Mr. Gladstone's palmy days that people would sit in the lobbies of the House when he was speaking, simply to enjoy the music of his tones, his words being at that distance

THE SANITARIUM DINING-ROOM AT MEAL TIME.

ONE OF THE SCHOOL-ROOMS IN THE HASKELL HOME.

inaudible. As a rule, the voices of American children in the schools are inexcusably bad. They are shrill, high, nasal, and wholly lacking in modulation of tone. Unfortunately, the same thing must be said, with of course numerous exceptions, of their teachers.

The American people, as a people, need to have their attention directed to vocal culture. Our climate, our temperament, our sensitive nerves, all tell against the production of a good natural voice. We need training more than any other people; and the time cannot be far distant, in the rapid advance of culture in this country, when the training of the voice will be as much a part of every child's education as learning to read, to spell, or to cipher. The ability to use the voice intelligently and musically ought not to be an accomplishment; it ought to be a necessity; and it will be a necessity whenever our ears become a little more sensitive, through training, to sounds which now assail them.

Every tone of the child in the home and the school ought to be supervised, because it is only in this way that a child can be trained to the point where, without self-consciousness, he speaks musically and correctly. The two things are a part of one complete expression of a refined and cultivated nature. It was said of Wendell Phillips that he gesticulated with his voice. The correctness of his emphasis, the skill with which he distinguished word from word by varying modulation, and the perfect purity of his tones, equipped him with the power of commanding attention and carrying his audience without raising an arm or using any of those means which are constantly employed by less cultivated speakers. It was said of a distinguished English woman who spoke in this country not many months ago that her voice showed the training of centuries. These illustrations bring into clear light the charm which inheres in a beautiful voice; and a beautiful voice is far less often an endowment of nature than it is a result of training. It is time to lead a movement for the reform of the American voice — high time to insist that the training of that voice shall be, both for teachers and pupils in every school in America, a matter of constant attention. — *The Outlook.*

RECOMPENSE.

FOR every flower that fades to-day
To-morrow a bud will blow.
For every chance that is thrown away
Fate has one more to bestow.

Never a star that falls at night,
But another will show its face.
Never a soldier loses the fight,
But another will win in his place.

For every hope that we put away,
For every dream that we lose,
There are many to come as fair as they;
We have only to wait and choose.

Never a love that we mourn as lost,
But another will dawn some day.
Never a wish that by chance is crossed,
But a better will come our way.

God is not cruel, the web of fate
Is shaped by his cunning hand;
We have only to listen, to watch and wait,
And then we shall understand.

— *Ida Goldsmith Morris.*

PRACTICAL HYDROTHERAPY.

The Wet-Sheet Rub.

BY J. H. KELLOGG, M. D.

THE wet-sheet rub is an excellent treatment to apply after packs or warm baths in which perspiration has been induced, as electric-light, Russian, and vapor baths. It is especially applicable to cases in which there is defective circulation in the extremities, an inactive skin and liver, or nervousness, in cases of debility accompanied by night-sweats; and is an admirable means of removing or preventing muscular soreness and stiffness after severe exercise.

THE WET-SHEET RUB.

The treatment is administered as follows: —

Have at hand a tub large enough for the patient to stand in comfortably, and three pails of water of 75°, 90°, and 100° F., respectively. The foot-tub should be about half full of water at 100° F. Have at hand two cotton sheets, and dip one of them in the water at 100°. Let the patient step into the tub, facing the attendant, with his arms straight and pressed close to his sides. Now lift the wet sheet by its gathered end to its full length; draw out one side quickly, place the corner over one shoulder of the patient, and while holding it in place with one hand, quickly draw the remainder of the sheet around him with the other, bringing it up well around the neck, and folding the second corner under the top so as to hold it in place. But a few seconds should be occupied in applying the sheet. Then begin to rub the patient vigorously with both hands, one upon each side, rubbing to and fro three or four times in each place and passing over the whole body very rapidly, and then repeating the same, to prevent chilling any part. Robust and phlegmatic people may be rubbed with a good deal of severity; but persons with delicate skin and acute sensibilities require gentler manipulation.

After one or two minutes of energetic rubbing, pour over the chest and shoulders the pailful of water at 90° F., and then the one at 75°. After rubbing one or two minutes longer, quickly disengage the wet sheet, allowing it to drop into the tub.

While the patient is stepping out of the

foot-tub, quickly grasp the dry sheet, enveloping him in it. Rub him dry, passing over the whole body several times in rapid succession, to prevent chilling. Care must be taken that every part is thoroughly dried. The head, armpits, groins, and feet are liable to escape attention. No moisture should be left between the toes.

After wiping nearly or quite dry, apply hand-rubbing, using care, however, not to induce perspiration by too vigorous or long-continued rubbing. If the skin should become moist from perspiration after having been once dried, gradually lower the temperature of the room, and continue light rubbing until the skin becomes dry and cool before allowing the patient to dress.

Very few baths afford a better opportunity for the display of skill and energy on the part of the attendant than this. Some practise is required to enable one to give it really well.

One precaution especially necessary to be observed in this bath, as well as in all others where a tepid application is succeeded by a cooler one, is frequently overlooked. The cooler application should never be made until there is good reaction from the first or warmer one.

Another form of wet-sheet rub is given in about the same manner, the only difference being that the sheet is wrung before its application, and is reapplied one or more times, according as a milder or more severe form of treatment is required. The douche, or pail pour, may be reserved until the sheet is removed the last time. The patient should then be dried as directed above.

THE PAIL POUR.

Diphtheria Carried by Turkeys.

Dr. Paulinis reports an epidemic of diphtheria which occurred in Skiatos, one of the Grecian Isles, some years since. The population at that time was about four thousand. Dr. Bild is authority for the statement that for thirty years no case of diphtheria had been known on the island. In June, a child was attacked with diphtheria. Seven other cases occurred in the immediate neighborhood. The disease extended until, within a period of five months, one hundred persons were attacked, of which number thirty-six died. Three weeks before the sickness of the first child, a flock of turkeys arrived from

Salonica. Two of these were sick on their arrival, and each of the others was subsequently attacked. Dr. Paulinis found in the throats of the sick ones patches of false membrane. The glands of the neck were swollen, and in one bird the disease had extended to the larynx, making it hoarse. One of the turkeys, after recovery, had paralysis of the legs, the same as is often the case in children, and was unable to walk. Although there had been no immediate contact between the sick birds and the first child attacked, still the distance between them was slight, and a wind had for some time been blowing in a direction favorable to the transportation of the germs of this disease. Dr. Paulinis is of the opinion that the disease was contracted from the turkeys, its germs being carried by currents of air. — *Journal of Hygiene.*

How to Identify a Mad Dog.

The July number of *Our Animal Friends* contains an article on rabies by John P. Haines, of the Society for the Prevention of Cruelty to Animals, in which he makes some statements in regard to hydrophobia that are quite at variance with popular opinion on the subject.

While admitting that there is such a disease as rabies, he says it is very rare. Of the one hundred and sixty thousand dogs and other small animals which have been cared for by the society which he represents, not one case of rabies has been found.

A very simple treatment for one supposed to have been bitten by a rabid animal is the following, recommended by Mr. Haines: "Take a few vapor baths, as hot as can be borne. The perspiration thus induced will eliminate any poison that the bite may have introduced into the system. Then endeavor to forget all about it. The chances are incalculably great that you will be perfectly safe."

Mr. Haines has noted the following facts, which, if carefully observed, will enable one to identify a case of true rabies: —

"1. It is supposed that a mad dog dreads water. It is not so. The mad dog is very likely to plunge his head to the eyes in water, though he cannot swallow it, and laps it with difficulty.

"2. It is supposed that a mad dog runs about with evidences of intense excitement. It is not so. The mad dog *never runs about* in agitation; he never gallops; he is always alone, usually in a strange place, where he jogs along slowly. If he is approached by dog or man, he shows no sign of excitement; but when the dog or man is near enough, he snaps, and resumes his solitary trot.

"3. If a dog barks, yelps, whines, or growls, that dog is not mad. The only sound a mad dog is ever known to emit is a hoarse howl, and that but seldom. Even blows will not extort an outcry from a mad dog. Therefore, if any dog, under any circumstances, utters any other sound than that of a hoarse howl, that dog is not mad.

"4. It is supposed that the mad dog froths at the mouth. It is not so. If a dog's jaws are covered or flecked with white froth, that dog is not mad. The surest of all signs that a dog is mad is a thick and ropy brown mucus clinging to his lips, which he often tries vainly to tear away with his paws or to wash away with water.

"5. If your own dog is bitten by any other dog, watch him carefully. If he is infected by rabies, you will discover signs of it possibly in from six to ten days. Then he will be restless, often getting up only to lie down again, changing his position impatiently, turning from side to side, and constantly licking or scratching some particular part of his head, limbs, or body. He will be irrita-

ble and inclined to dash at other animals, and he will sometimes snap at objects which he imagines to be near him. He will be excessively thirsty, lapping water eagerly and often. Then there will be glandular swellings about his jaws and throat, and he will vainly endeavor to rid himself of a thick, ropy, mucous discharge from his mouth and throat. If he can, he will probably stray away from home and trot slowly and mournfully along the highway or across country, meddling with neither man nor beast, unless they approach him, and then giving a single snap. The only exception to this behavior occurs in ferocious dogs, which, during the earlier stage of excitement, may attack any living object in sight.

"These symptoms of rabies are condensed from valuable information received from physicians of undoubted authority."

Mr. Haines claims that dogs are no more liable to rabies in July and August than at any other time.

"Honorable Cannibalism."

Horrible as the custom of cannibalism appears to us, there seems to have been another side to it, as is shown in an article in the *Contemporary Review* by Dr. Flinders Petrie, the eminent Egyptologist. In classifying the motives for cannibalism he finds that in more than half the races who practise it, mental motives prevail, while in the remainder the physical motives of hunger or pleasure prevail. He says:—

"The higher motives of honor and kindness prevail mostly in Asia, Australia, and South America, but seem to be unknown in Polynesia, North America, and Africa. The Tibetans considered it a glorious burial for their honored elders to be eaten; some Australians also eat the dead with the greatest and most solemn honor; and the Tupi and Capanahuas in South America did likewise. Besides this, it is often a matter of kindness and love for the dead. The Cucumas of South America said that 'it was better to be inside a friend than to be swallowed up by the cold earth.' Such seems to have been the main sentiment in that quarter of the world, as it appears again among the Botocudos, Tapuyas, Mayoruna, Mundrucu, and Guyanis. The idea of protecting the dead from decay and puterfaction, which would befall them in the ground, and giving them a kindly and affectionate disposal among their friends and kin, is as far removed as possible from any brutality or baseness.

"In Central Australia the Yulugundis have a still more touching feeling: when lovers are parted by death, the survivor insures that they shall be united, in death if not in life, by consuming part of the dead. In Asia also we find the Samoyeds and Ostyaks saying that the elders will have a better future if eaten; and a tribe of the Gonds near the source of the Nerbuddah eat those who are fatally ill or aged as an 'act of kindness.' And in ancient times 'the Massagetæ and Derbices thought it a most miserable end to die of sickness, and killed their parents, relatives, and friends who had grown old, and ate them, preferring to do this themselves rather than leave it to worms,' as Jerome tells us. It is thus evident that there is a widely spread sense of protecting the beloved dead from the chilling loneliness and corruption of the grave by thus dividing the body among the survivors."

They also had motives of benefiting the living, believing that to eat a great warrior would transfer his valor to the eater, or that to eat a baby would restore his youth. Sometimes it was from a motive of revenge or hatred that a native devoured his enemy. "Thus we see," concludes Dr. Petrie, "that quite apart from the use of human flesh simply as

food, in the majority of tribes the mental desires are prevalent, to honor or benefit the dead, to obtain their virtues, to acquire ceremonial position, or, lastly, to prevent their haunting survivors."

Influence of Diet on the Healing of Wounds.

One of Reuter's special service officials states that he has paid several visits to the hospital in which were being treated many Turkish warriors, and that he was struck by the warlike spirit of the wounded, and the frequency with which they asked the doctors, "Do you think I shall be well in time for the next battle?" These doctors are surprised by the wonderful vitality of the Turks. One man, who had had his stomach penetrated by a bullet, not only kept his place in the ranks till the battle was over, but marched a distance of ten miles afterward. Another with three wounds, two in the legs and one in the shoulder, continued in the performance of his regular duties for twenty-four hours after their reception, and would probably have kept about until they healed, had not an officer, happening to notice his condition, told him to go to the hospital; and it was with great reluctance that the wounded soldier went.

The doctors remark upon the rapidity with which patients recover from wounds, and attribute it to the abstemious lives led by the Turkish soldiers, who drink no wine, eat but very little meat, and take plenty of vegetables. They are examples of the saying, "Prevention is better than cure." By their manner of living they escape the effects from which grosser livers suffer when wounded. — *Journal of Hygiene.*

Progress.

Progress implies change. Those who never change their opinions make no progress. A philosopher was once criticized because some of his later convictions differed from earlier ones. He frequently replied that "it would be strange if the one thing exempt from evolution were to be his opinions." As a man mounts higher up the hill of experience, his prospect widens, and his vision takes in more. If he can reason, he is now able to form more correct conclusions. Beware of those who never change. — *Sel.*

The Comparative Cost of War and Education.

The United States, to-day the youngest of all, is the only great nation of the world which expends more for education than for war. France spends annually $4 per capita on her army and 70 cents per capita on education; England, $3.72 for her army and 62 cents for education; Prussia, $2.04 for her army and 50 cents for education; Italy, $1.52 for her army and 36 cents for education; Austria, $1.36 for her army and 62 cents for education; Russia, $2.04 for her army and 3 cents for education. The United States 39 cents for her army and $1.35 for education. England 6 to 1 for war! Russia 17 to 1 for war! the United States 4 to 1 for education! The United States spends more per capita annually for education than England, France, and Russia, combined. — *The Outlook.*

The Remarkable Health of the Hebrew Race.

The marked immunity from disease of the Jews is noted. It has continued even to the present day, as evinced by the extremely low mortality This condition of affairs is attributed to the rigid enforcement of the laws of health psescribed by the Hebraic law, and also to the racial sobriety, producing a sturdy constitution capable of resisting disease to a considerable degree. — *Popular Science News.*

LIFE'S MIRROR.

THERE are loyal hearts, there are spirits brave,
  There are souls that are pure and true!
Then give to the world the best you have,
  And the best will come back to you.

Give love, and love to your life will flow,
  A strength in your utmost need;
Have faith, and a score of hearts will show
  Their faith in your word and deed.

Give truth, and your gifts will be paid in kind,
  And honor will honor meet,
And a smile that is sweet will surely find
  A smile that is just as sweet!

Give pity and sorrow to those who mourn;
  You will gather, in flowers, again
The scattered seeds from your thought outborne,
  Though the sowing seemed but vain.

For life is the mirror of king and slave,
  'T is just what we are, and do.
Then give to the world the best you have,
  And the best will come back to you.

— *Madeline S. Bridges.*

DID you ever wonder why the goldfish in your aquarium dart about so unceasingly? It is because they are seeking for shade from the light. As fish have no eyelids, and consequently no means of shielding their eyes, they suffer extremely when exposed in a glass vessel. This may be avoided by placing in the aquarium a grotto of rocks or causing plants to grow sufficiently dense to allow the fish to hide their head at least, in the grateful shadow.

A MAN is of little use in the world unless his brain and enthusiasm are backed up by digestive power and physical strength. Napoleon said that the first requisite of good generalship is good health. Attacks of indigestion lost him at least two important battles, and probably his empire. — *Sel.*

BETWEEN forty and fifty American women are registered in the University of Berlin, although the faculty does not countenance the admission of women to the lectures. The number of women students at Zurich is now about one hundred and fifty, and they are beginning to agitate for the same rights as the men students; and it is only a matter of time when they will receive them.

THE longer we live in this world the more we become convinced how little we know. The people most humble in their opinions are generally the best educated. It is an art which only a few of us learn, to be reticent of our own opinion when every one around is expressing his. Yet this is one of the attributes of the well educated. Silence often speaks louder than speech. — *Edward W. Bok.*

WE should form the habit of hearing a little song, reading a good poem, seeing an excellent picture, or uttering a sensible observation every day. — *M. R. Silsby.*

WHEN we breathe, exercise, eat, bathe, and dress *correctly*, then our powers to grow healthy and beautiful and to evolve higher qualities become limitless.

HUNDREDS can talk to one who can think: thousands can think to one who can see. — *Ruskin.*

THE brain of an ant is larger in proportion to its size than that of any other known creature.

EDUCATION begins its work with the first breath of human life. — *Jean Paul Richter.*

NEW INTOXICANTS.

THE alcohol habit, which has become so prevalent in civilized countries, and which has blighted almost every nation of savage or primitive people that has been brought in contact with civilization, is by no means the only poison habit against which the medical profession should earnestly raise its voice. New forms of intoxication are constantly arising. Every new drug capable of producing an artificial felicity is quickly seized upon and made the means of a new poison habit. This is not the effect of a natural and physiological craving in the human constitution, but of an unnatural and artificial appetite which is, in large part, the result of the artificial conditions of life which prevail among civilized people. Through habit and heredity, the use of one nerve-tickling or obtunding drug creates a demand for another, and so the evil grows.

A recent number of the *Medico*, a French periodical, gives an account of a new form of intoxication which is becoming fashionable among the ladies of Paris. This new mode of dissipation consists in the inhalation of the fumes of naptha. The intoxication produced by this drug is similar to that induced by ether drinking, as it appears in Ireland and Russia. Its effects, however, continue for a much longer period, and are said to be very much more injurious. The French authority asserts that the Parisian ladies are not responsible, however, for the invention of this new mode of intoxication, but that it was introduced into Paris by American ladies (?) who had long practised it at their homes in America.

America must be held responsible for the invention of several new modes of intoxication. Ether intoxication was practised in the South long before the drug was used as an anesthetic in surgery.

The writer once received from an eye-witness a very graphic account of an ether party held half a century ago in a country neighborhood in the South, at which a negro was first exhilarated to wild delirium, and afterward rendered unconscious by the prolonged administration of ether, to the great dismay of the reckless young people who had been amusing themselves at the expense of the poor negro. Intoxication by the chewing of tea seems to have originated in Boston, where a couple of servant girls were arrested a few years ago for being drunk and disorderly. The investigation by the court showed that they had become tipsy on tea. Tea cigarettes were, however, the ingenious invention of a Parisian woman who had tired of all the ordinary forms of intoxication.

The morphia habit, the cocaine habit, the chloral habit, and other poison habits which are prevalent in this and other countries, are only different manifestations of a wide-spread and apparently increasing love for drugs which benumb or excite the nerves, which seems to characterize our modern civilization. Indeed, there appears to be, at the present time, almost a mania for the discovery of some new nerve tickler, or some novel means of fuddling the senses. It is indeed high time that the medical profession with one accord raised its voice in solemn protest against the use of all nerve-obtunding and felicity-producing drugs, which are, without exception, toxic agents, working mischief and only mischief in the human body.—*J. H. Kellogg, M. D., in the Medical Temperance Quarterly.*

O THOU invisible spirit of wine! If thou
Hast no name to be known by, let us call thee— Devil.
—*Shakespeare.*

An Honest Argument.

Most of the arguments offered in favor of the use of alcohol, either as a beverage or as a medicine, are based either upon ignorance of its physiological, or rather unphysiological, properties, or upon a desire and determination on the part of the defender of this drug to find an apology or a pretext for its use, no matter what the facts may be; and if the facts do not agree, then it is so much the worse for the facts. In the July number of the London *Westminster Review*, A. E. T. Longhurst, M. D., in an article entitled, "Scientific Aspects of the Temperance Question," very pithily says: —

"For a man to say that he takes alcohol because he likes it, regardless of the consequences to health which it entails, or the possibility of a drunkard's grave, is at any rate honest; but when he says he takes it as a food, because his doctor tells him it is so, and is a necessity, then he defies science, and brings a reproach on the profession of scientific medicine."

The doctor further says: —

"If we summarize the most recent scientific conclusions as to alcohol and its action on the human system, they will be somewhat as follows: —

"It is not found in nature, nor provided by her as a necessity of animal life.

"It predisposes to disease; deranges the constitution of the blood; unduly excites the heart and circulation; paralyzes the minute blood-vessels; impairs the function of the digestive organs; disturbs the regularity of nerve-actions; lowers the animal temperature; lessens muscular power; is not a food; the highest health and longevity are attainable without it.

"With so much evidence of the evils of alcohol, and such scientific expressions against its use in the animal economy, it is high time that the profession of medicine should speak about it from the scientific aspect of the question."

The Cigarette Is Doomed.

There seems to be a growing sentiment in this country against that most deadly of narcotic poisons, the cigarette. Boys' societies have been formed in many places whose sole pledge is to prohibit its use, and it forms one of the items in many another pledge. Even the legislatures in some of our States are taking up the matter, and passing laws prohibiting its manufacture and sale.

On the fourteenth of May an anti-cigarette law went into effect in Minnesota, of which the St. Paul *Pioneer Press* says: —

"Its design is to preserve the youth, and especially the school children of Minnesota from the deleterious influences, not only of the cigarette, but of tobacco in all forms, so far as can be done without encroaching on the rightful authority of parents in their own homes. It makes the sale or giving away of cigarettes or tobacco to any person under eighteen years of age, or to any minor pupil in any school or college, punishable by a fine not exceeding fifty dollars or by imprisonment not exceeding thirty days, for each offense. Further, it authorizes the arrest of any person under eighteen, and any minor pupil, who may be found smoking cigarettes in any public place, and the infliction at the discretion of the court of a fine not exceeding ten dollars or not exceeding five days' imprisonment, for each offense. But where the minor arrested gives information which may lead to the arrest of the person or persons who sold him the cigarettes or tobacco, the court may suspend the sentence against such minor. Another provision applies to persons who shall permit the use of their premises by minors for the purpose of indulging in tobacco, the same penalties as for selling or giving away the weed. This, of course, does not apply to parents who permit their children to smoke in their own homes."

Blindness Caused by Cigarette-Smoking.

A lady in Ohio sends us the following account of an incident which came under her own notice in the institution for the blind at Columbus : —

"During a recent visit to the Ohio institution for the blind, at Columbus, I found myself constantly wondering what had caused these boys and girls to be so afflicted ; and on questioning the teachers and others, I found that a great many of them were in that institution as a result of transgression of nature's laws. The sins of the parents are being visited on their children.

"But to me the saddest case in that institution was that of a young man who brought this terrible affliction on himself. He is the son of well-to-do parents, has had many advantages of education and refinement ; but like many other boys he contracted the habit of cigarette-smoking while very young. He was working into his father's business, and had a great desire to appear manly. The habit grew on him to such an extent that he was seldom without a cigarette in his mouth during the day. When he was about eighteen years of age, his health suddenly broke down, and for months he was in such a nervous state that he could not endure the slightest sound in his room. By the doctor's orders he was finally removed to a hospital, where not even his mother was permitted to see him. When he at last crept back to a degree of health, his sight was hopelessly gone. He can see just enough to distinguish light from darkness, and to avoid running into people on the street ; but his physicians say he can never hope to see more than that ; and not only is his sight gone, but the poison of the cigarettes has injured his lungs to such an extent that it is very difficult for him to draw a long breath.

"I know he now means to fight the tobacco habit in every way he can, and it is by his permission that I tell these facts ; for although he is very sensitive, he is willing to have his sad story told if there is a possibility that it may keep some other young man from suffering what he has.

"It may be well to add that all the physicians who have had the care of him say that his blindness is undoubtedly the direct result of his cigarette-smoking. His physician published an account of his sickness and subsequent blindness in one of the daily papers in the large city where he lives, giving the cause as cigarette-smoking. One of the dealers in that part of the city said his sale of cigarettes had fallen off fifty per cent. since that time."

His Mind a Blank from Smoking.

The strange case of a young man twenty-three years old, a college graduate, is attracting the attention of the medical fraternity in the West, and is a marked example for cigarette smokers. The young man became addicted to the use of cigarettes, and as a result of continued smoking he lapsed into a comatose condition, in which he remained for thirty hours. When he recovered consciousness, his mind was a blank. He does not recognize his most intimate friends and acquaintances. Neither does he know his home and former haunts. He is unable to read English, but still retains his knowledge of German and the languages ; and, while he cannot count more than two in his mother tongue, readily runs up figures in German. Physicians say his condition is due to the excessive use of cigarettes. He is vigorous and healthy, but is as completely under the care and guidance of his parents as a child. When he meets his brother, he does not know him ; and though a frequenter of the town near his home, he

disclaims all knowledge of the place. The young man obeys his father implicitly, but does not hear conversation carried on in his presence.

LEIGH HUNT says with truth: "We cannot but remark how unfairly the animal creation are treated with reference to the purpose of moral example. We degrade or exalt them as it suits the lesson we desire to inculcate. If we rebuke a drunkard or a sensualist, we think we can say nothing severer to him than to recommend him not to make 'a beast of himself,' which is very unfair toward the beasts, who behave themselves as nature intended."

ELIZABETH STUART PHELPS-WARD, in a recent number of *Mc Clure's Magazine*, makes the following terse statement as to her views on the liquor question: "I believe that the miseries consequent on the manufacture and sale of intoxicating liquors are so great as to command imperiously the attention of all dedicated lives; and that, while the abolition of American slavery was numerically first, the abolition of the liquor traffic is not morally second."

ALCOHOL, of all drugs, attacks the highest and last formed powers of the brain, breaking down and dissolving from the very pinnacle of life. This failure of the higher brain powers is apparent when the man is under the influence of spirits, but is covered up when sober, and concealed, but exists just the same. The man who has been intoxicated has more or less permanently injured the best powers of his brain. — *T. D. Crothers, M. D.*

"WITH all thy gettings," says Dr. Gullette, "first get strength. It adds no strength to the tired beast to drive the spur into his sides. Stimulants are but spurs to prick the jaded body to greater exertions. No man can climb to the top on a coffee urn, or float upon the fumes of wine. Gluttony is a foe to success. Lack of sufficient sleep will sooner or later sap a man's vitality."

THE *Indian Witness* (India) tells of a Mohammedan gentleman, of Akyab, who in proposing the queen's health at some local function, asked the company to drink it, "not in the fashion of Europeans, by drinking wine, but in a glass of pure water, which represents the purity of her Majesty's character."

DRUNKENNESS is not only the cause of crime, but it *is* crime; and if any encourage drunkenness for the sake of the profit derived from the sale of drink, they are guilty of a form of moral assassination as criminal as any that has ever been practised by the bravos of any country or of any age. — *John Ruskin.*

MY experience is that no substance wastes and destroys the brain cells and impairs the tissues so rapidly, even when taken in moderation, as alcohol and its compounds. Therefore the drunkard's brain is largely a wasted brain — a prematurely senile brain. — *I. N. Quimby, M. D., Jersey City.*

The Unpopularity of Tea.

At the time tea was introduced into Europe, there was much opposition to its use, and much was written against it. Mr. Henry Savilo, writing to his uncle, Mr. Coventry, in 1678, called it "a base Indian practise." Another writer about the same date says it is "a filthy custom," and adds, "Men seem to lose their stature and comeliness, and women their beauty."

THE INFLUENCE OF EXERCISE ON GROWTH.

BY. F. MAGEE ROSSITER, M. D.

THE effects produced on the human body by exercise are various and obvious, being manifested locally or generally ; the benefits obtained being often only temporary, while again the effect is permanent ; and appearing either immediately or remotely in time.

Exercise, or the manifestation of activity, is common to all forms of life ; in fact, life depends directly upon activity. This is seen in the human economy. The heart is ceaseless in its activity ; but if it should suspend its action even for a few minutes, the results would be disastrous. If the red blood cells should cease work for a time or refuse to carry any more oxygen, we would die from starvation for air. The nervous system, the telegraphic mechanism of the body, is constantly active, giving and receiving messages — impulses — controlling the amount of action of every cell of the body ; if these nervous impulses were inhibited, all activity would come to a stand-still, and death would ensue.

Observation teaches us that exercise is one of the first manifestations of life. A good illustration of this is seen in the newborn infant, which at first is a wriggling piece of humanity, a bundle of reflexes, an innumerable number of discharging nervous impulses without order or system, and sustaining no relation to time. In this manner the child at first exercises, and from one nap to another it is hardly ever quiet, but there is a continuous succession of contortions and motions, particularly of the lower extremities. The limbs being the most poorly developed of any part of the body at birth, nature from the first causes these parts to be in constant motion, enriching the blood supply, stimulating their growth, preparing them for their important subsequent service. All are familiar with the rapid growth of the infant, — the bright eye, the ruddy cheek, the rapid increase in weight, the increased muscular strength, and the improvement of all the senses. If it should cease to kick and toss about, it would soon present anything but a picture of health, and growth would be very much retarded. The boys and girls who romp and play in the open air, and in the dirt, even though it be at the expense of white dresses and clean knickerbockers, are the ones who grow, and are storing up vitality for future emergencies.

The essential factors to growth are : —

1. A wholesome diet, properly selected and adapted to the needs of the individual, and taken with moderation.

2. Abundance of pure air, and proper breathing.

3. Daily bathing.

4. Exercise, systematically engaged in, whether it be in the performance of home duties, in the garden, or in the gymnasium.

It will be noted that the last three points relate to exercise in some form. Respiration consists of an alternate expansion and contraction of the chest, and is due to a continuous succession of stimuli produced by the carbon dioxide in the venous blood passing over the respiratory center in the medulla. This being true, any increase of CO_2 in the blood will increase the number of respirations, thus eliminating an excess of this gas and other waste products which otherwise would act as poisons. Muscular activity increases the production of CO_2 in the blood, and this accounts for the increase of the number and depth of respirations when one is engaged in exercise, — the law of supply and demand in the body. The breathing exercises, therefore, which are most natural are those that

are the result of muscular activity. However, time spent each day thoroughly inflating the lungs by voluntary effort is an excellent form of exercise, and one that repays an hundredfold. The blood becomes saturated with oxygen, and the capillaries carry it to every part of the system, bathing every cell with this life-giving element, producing a more rapid and abundant outflow of the products of waste and repair; for combustion is more thorough in an atmosphere of oxygen, just as a candle burns with a greater brilliancy when placed in a jar containing oxygen. The lungs increase in elasticity, so that the chest expansion may be increased several inches, while the effects of these exercises react upon every tissue of the body, producing a healthier tone and stimulating its growth.

The bath, whether taken for its cleansing properties or as a tonic, is one of the most pleasant forms of exercise. The cool sponge bath or "cutaneous gymnastics," taken in the morning on rising, followed by a vigorous rubbing of the surface of the body, is an exercise that cannot be excelled. Every nerve-cell, every muscle-fiber, every organ of the body, is stimulated to greater activity. The circulation is improved, and the respiration is more free. In this way nature resorts to her own resources for a tonic to quicken the vital activities.

The form of exercise engaged in, whether local or general, active or passive, should be adapted to the needs of the individual. That form of exercise that will bring into activity every muscle of the body is the form that is most conducive to growth. The prominent biceps that swells into a large, hard knot on flexing the forearm, is only an illustration of what may be accomplished in every muscle with proper exercise. The muscle increases in size not by an increase in the number of the cells, but by a growth of each individual cell. The same nerves that stimulate the muscles to activity stimulate the little muscles in the walls of the blood-vessels, causing them to dilate, facilitating the flow, and increasing the supply of blood to the part, supplying each muscle-cell with more food, and carrying away the waste material,—cells that have served out their usefulness. A uniform system of exercise will produce a uniform growth and give symmetry of form, whereas one part exercised to the neglect of the rest of the body often leads to some deformity.

Henry G. Beyer, M. D., about one year ago reported some very interesting results showing the effects that systematic exercise produced on growth. Observations were made on 188 naval cadets sixteen to twenty years of age during a period of four years, with semi-annual examinations; and the results obtained were compared with tables giving the normal absolute growth in the same dimensions, which were calculated from 4,537 cadets of previous years. These experiments revealed some very interesting facts:—

1. There was a positive increase in height of 26.6 millimeters, or over one inch, over and above that which may be expected to take place without exercise.

2. There was an increase in weight of 35 kilos, or about 77 pounds, during the four years.

3. An increase in lung capacity of 1.722 liters.

4. An increase in strength of 235 kilos, or about five times above the normal, which was 55.6 kilos.

A consideration of these facts clearly indicates that exercise has a most decided effect on the growth of the body.

In general, exercise and a healthy symmetrical growth go hand in hand. Sleep is sounder and more refreshing, the mind is clearer, the thoughts and ideas come quicker, the eye is brighter, and we see better, the taste is more perceptible, the

smell more delicate, the touch more sensitive, the discrimination between right and wrong more true. The functions of the skin and kidneys are increased; digestion and assimilation are more active, lung expansion is greater; the heart beats stronger and the circulation is freer; the muscular energy and contractability are decidedly increased. A new elasticity and grace is imparted to the step, and one feels that a new lease of life has been granted him.

Exercise properly taken, other things being equal, is most conducive to growth of body, mind, and soul. Man's better nature can only be appealed to through the nervous system and the special senses; but if through neglect and the lack of exercise the blood stagnates, the delicate nerve-cells and fibers of the nervous system,— the system which above all others responds the most quickly to any abnormal condition or influence,— are inhibited in their action by the accumulation of poisonous ptomains, rendering men less susceptible to external influences and right impressions; but if the breezes of heaven, in the form of abundance of oxygen, can sweep through his brain and tissues in the blood currents, a new luster is imparted to the eye and likewise to the better nature; for the "eye is the window of the soul." The physical, intellectual, and moral natures are inseparably associated, and all will expand and strengthen under the influence of judicious exercise.

The Physical Training of Children.

In our modern faith in physical culture we are likely to overlook some matters of vital importance. The best physical training for the young of both sexes is to be found in their natural sports, and not in formal artificial gymnastics. In saying this there is a possibility that we shall meet the opposition of some educators who have not given much thought to the subject. What is sport? In the sense in which we use the word it is play and frolic, such as the young indulge in spontaneously when left to themselves. All animals have their sports. In these sports they bring into use every portion of the body in a way that is agreeable to the youth and helpful in their physical development.

The fault of formal gymnastic exercises is that they are artificial. They were introduced for the praiseworthy purpose of supplying the want of natural exercise where this cannot be obtained; but they have gone beyond this, and the notion has arisen that a child cannot take proper exercise without going through an apprenticeship and being subjected to a method; the more complicated the method, and the more difficult the apprenticeship, the better the results that are anticipated. The elaborate gymnastics, which many regard as a kind of perfection of natural exercise, is, from the hygienic point of view, only a makeshift when we can get no better means, but a poor substitute for the spontaneous gymnastics to which every child is naturally inclined. This instinctive exercise would amply suffice for the development of the body if the instinct was always listened to, but social and studious conditions do not permit this. The instinctive desire, repressed too often, becomes weakened, and finally disappears. The body accommodates itself to a sedentary life, and the insufficiency of exercise finally induces muscular indolence and an inert habit. The teacher of gymnastics would not be needed if the young had the privilege every day, for a sufficient time, of a large space, and liberty to enter into those sports most natural to the young. This is the view of Herbert Spencer and of many

others. Let us then try to promote natural physical culture as an essential part of early education, and artificial gymnastics only as an aid to supplement it under circumstances when the former cannot be obtained, or when there are special reasons for their use.— *Sel.*

Girls, Stand Erect.

There is a passage of Scripture which reads: "The upright man is stable in all his ways." This no doubt applies to women as well as to men. It may be said that it refers to moral uprightness, rather than physical, but it may just as well apply to the latter. There are many things in the lives of women which tend to develop a carriage of the body anything but upright. Girls who tend the baby become one-sided because they carry the little one on one arm more than the other. They might be taught the better way by their parents or teachers. There are multitudes of little girls in all large cities whose chief business is to tend the baby while their mothers work. Deformity is common among them. . . .

If any girl has any pride in being upright in body as well as in morals, she can, even if she has an occupation which tends to make her crooked, do much herself to prevent it.

How can this be done? In the first place she must carefully cultivate the sense which tells her when she is standing up straight and when she is not. By paying attention to this muscular sense it becomes in time very acute. By neglecting it the sense becomes dull,— is paralyzed. Now my advice is to cultivate it daily or several times a day by assuming the upright attitude. Stand before the glass and see when you are straight, or get a friend to tell you, and then put yourself into this attitude whenever you stand or walk, or sit at any labor in which you are engaged. If you have only to walk across the room, do it in an upright attitude. If you have only to stand and converse with a friend in the street, on the road, at a party, get yourself so accustomed to the upright attitude that you will feel uncomfortable in any other. In time an upright habit will be established, and constant attention to it will not be required. In case you are already stoop-shouldered or one-sided, these conditions must be cured, but the first step in their cure is the upright attitude, or as near an approach to it as possible.— *Jennie Chandler.*

A NEW ZEALAND matron carries her sixty years so lightly that she thinks nothing of riding on her bicycle one hundred miles in a day, and since she first became a cyclist has covered, in all, some five thousand miles.

THE SONG OF THE WHEEL.

THE OLD.

IN and out of her golden hair
The sunbeams softly steal.
And her voice floats out on the summer air
As she sings to the hum of her wheel.

Little feet lightly the pedals press,
A white hand moves to and fro
As she sits in her quaint, old-fashioned dress
At the wheel of long ago.

THE NEW.

The wind has ruffled her careless hair,
She is dust from her head to her heel,
But she gaily whistles a rollicking air
As she springs to her seat on her wheel.

Stout little boots the pedals press;
In an instant she 's off and away.—
The muscular maid in her bicycle dress
On the wheel of the present day.

— *Sel.*

COMPLICATIONS OF SCARLET FEVER.

BY KATE LINDSAY, M. D.

THERE are various inflammations liable to follow an attack of scarlet fever, sometimes resulting in serious complications which endanger the future health and perhaps the life of the patient. The kidneys are especially liable to disease on account of the extra work required of them in ridding the body of poisons. This may so far overwork these organs that they will cease to eliminate altogether, when the condition of the patient becomes very grave indeed. These complications are quite as liable to occur where the disease has appeared in a mild form as when it has been more severe, especially if the patient be allowed to expose himself, or to eat his usual food too soon. In the more severe forms of the disease the patient is necessarily kept in bed longer, and so is less liable to chilling, undue exposure, and errors of diet.

There is no disease, not even typhoid fever, in which there is more need of careful regulation of the diet than in scarlet fever. The great majority of cases are those of children under ten years of age, who, if the attack is at all severe, are usually delirious, so that they do not know when to call for water. Often a child will carelessly be allowed to go for hours without water because it is too ill to ask for it. The fluids of the body being used up very rapidly by the fever, the volume of the blood is diminished, and the kidneys are greatly irritated by the concentrated condition of the poisons on account of the lack of fluid in the system to dilute them. The writer has been called to see cases where the patient was rapidly sinking into a state of profound coma for lack of the needed cup of cold water to prevent his perishing from thirst.

Many writers at present recommend a milk diet from the beginning of the fever until six weeks or more after the rash has first appeared, as one of the best measures for preventing kidney and other complications. Undoubtedly much of the good results derived from this diet is due to the fluid which it furnishes to the system. In every stage of scarlet fever, whether the patient calls for it or not, he should be given plenty of water, and care should be taken to see that he takes it when it is offered. If enough cannot be swallowed, it must be administered in the form of oft-repeated enemata, an ounce of water every hour or oftener. Let the water be retained and absorbed.

From the first, the diet should be fluid, —milk if it agrees with the patient, but better still, well-cooked gruels and bland, sub-acid fruit juices. The gruels should be cooked for from four to six hours, and if the patient is under three years of age, carefully strained, so as to remove all coarse bran or any lumps likely to irritate the stomach or bowels.

If the diet is thus regulated, and the system given plenty of fluid to keep up the blood and other secretions in proper quantities, the glands and membranes will be in much less danger of taking on an inflammatory condition. The writer has known one meal of indigestible food to cause complete arrest of the function of the kidneys, ending in uremic convulsions; and this in the sixth week of the disease, after the temperature had been normal ten days, and the scaling was almost over. The undigestible foods fermenting in the stomach produced such amounts of poisonous ptomains that the weakened kidneys became unable to eliminate them, and were so overworked that they ceased to act at all. Another case

was similarly affected by being allowed to eat freely of dried beef.

As most of the deaths from scarlet fever are due to these complications, it is very apparent that all causes likely to produce them should be carefully avoided. As already stated, exposure to cold and dampness is a frequent cause of inflammation of the kidneys, as well as of the pleura, lungs, joints, and other membranes and glands of the body. Not a few mild cases of scarlet fever have ended fatally, during the stage of convalescence, from reckless exposure, or insufficient clothing on a damp, chilly day.

The diet throughout the period of convalescence should be fluid and strictly vegetarian, with a moderate amount of milk and eggs. All meats and meat broths should be avoided, as they throw extra work on the kidneys, and thus hamper them in their work of freeing the body of waste matter. The following is a sample of a daily bill of fare for a patient recovering from scarlet fever: For breakfast, a cup of gluten gruel, a baked sweet apple without sugar, and a slice of cream toast; for dinner, whole-wheat wafers, rolls, or a slice of stale bread, a dish of well-cooked grains, as wheat grits, crushed wheat, or, better than anything else, a bowl of granose with milk or fruit juice; for supper, a cup of gruel or milk, and a little granose or a small dry cracker. As the case improves, a poached egg for breakfast may be added, and later on a baked potato for dinner. Until at least six weeks have passed, if the case is a severe one, the patient should not be allowed to eat any meat, pastry, or anything that is not readily digested. It is very important to keep the stomach in such a healthy state that it will be free from fermentation, so that the eliminative organs of the body shall not be overtaxed. The bowels should be closely watched for evidences of indigestion in the form of curds or other spoiled foods.

As the kidney complication is such a common one, it is very important that the nurse or mother should know the first symptoms of this grave and often fatal condition. These are usually a chill, rise of temperature, with puffiness under the eyes, swelling of the feet and ankles, scanty flow of dark-colored urine, or its entire suppression. Nausea and vomiting, and sometimes convulsions, are frequent accompaniments. The urine is often bloody, and, when heated, becomes thick from the albumin which it contains.

As soon as the first suspicious symptom appears, treatment should be begun at once, as follows: Put the patient to bed, and give a saline cathartic, stopping all food for from twelve to twenty-four hours; give plenty of hot water to drink, and put the patient in a warm bath or pack to start the perspiration. The bowels should be freely moved, as it is necessary to make them do the work of the kidneys as far as possible. The diet should be milk and lime-water, or milk and well-cooked and strained gruels, given in moderate quantities after the fast of the first day. Care must be taken not to give more than the stomach can readily care for, as food remaining undigested in the stomach soon becomes rank poison.

The skin should be kept clean and well oiled, to avoid taking cold. The urine should be tested every day for the albumin, and its color and quantity carefully noted. It will be best to keep the patient in bed until all the bloating has ceased, and the urine is of normal color and amount, and does not become thick when boiled. And for several weeks afterward, the patient should be carefully treated so as to prevent relapses, the strict diet being adhered to, and care

observed to guard against cold and dampness.

After such a relapse the patient is usually very nervous, and should be carefully protected from annoyance or excitement of any kind. If the weather is pleasant, the convalescent from scarlet fever may be allowed to spend a part of the day in the open air, on a cot, or well wrapped up in an easy chair on the sunny side of the house. Just how soon this liberty can be allowed will depend very much on circumstances. As the disease is contagious for at least six weeks, or longer if the scaling continues, it is often necessary to keep the patient in his room to prevent the infection of other children of the family, or, if it be in a tenement house, others in the same building; but the room should be kept well ventilated and thoroughly clean, all dust from floors, walls, and furniture being wiped up with a clean cloth wet in some disinfectant solution. These cloths should be burned as soon as used. This is a far better way than to use a broom, and thus scatter the dust about the room. The first time the patient goes out of doors he should stay but a short time. Select a quiet, sunny day, and do not let him stay out more than a half hour at first. Each day the time may be lengthened, but for weeks the morning and evening cold and dampness should be avoided.

The joints are very often affected with rheumatism in this grave and treacherous disorder. The symptoms are quite similar to those common to all rheumatic attacks,— pain, swelling, and stiffness of the articulations, accompanied by a chill and rise of temperature. The inflammation is likely to go on until suppuration takes place and the joint is permanently injured. Patients who are predisposed to rheumatism are more likely to develop this complication. The exciting causes may be exposure to cold and dampness, a nervous shock; but more common than any other are the errors in diet already mentioned. Whenever a patient ill from scarlet fever, or recovering therefrom, complains of soreness and aching of his bones, and stiffness and pain when moving the joints, they should be examined for evidence of inflammation; for it is very important that resolution should be brought about before there is destruction of the tissue and permanent damage done to the organs affected. All causes likely to excite an attack should be carefully avoided.

If the body is gently rubbed frequently, sensitive joints and other sore spots will be discovered. At these points there will often be found dilated veins, as shown by the purple color of the surface, which indicate that the circulation is very sluggish, and that poisonous elements are lodging there and irritating the nerves as well as forming poison-centers, which will infect surrounding structures. When any such sensitive part is discovered, it should be gently masséed to start the blood-current, and promote assimilation and absorption; and thus the over-accumulation of blood corpuscles and waste matters may be carried away and the organs fortified against a future destructive inflammation.

Whenever the increase of temperature, pain, redness, and swelling of a joint indicates that active inflammation has begun, the patient should be put to bed at once, and the aching member thoroughly fomented and bandaged with a moist compress, the bowels being also moved by a saline cathartic, and the diet restricted. If the attack occurs, as it is very likely to, during the end of convalescence, when the patient has been eating for a number of days, it may be well to have him fast for a day or two and give the eliminative organs a chance to free the system of morbid matter. It is very

important to eliminate the poisonous elements which are causing the inflammation, as they will endanger all the organs and tissues of the body, and are likely to affect the heart, producing disease of the outside covering, inside lining, and the valves, as well as inflammation and softening of its muscles. Often the valves are irreparably damaged, and the patient goes through life with a weakened heart action. Sometimes such an attack may result fatally from the intensity of the poisons which so damage the tissues as to arrest at once the heart's action.

Disease of the lungs and pleura is another rather frequent complication of scarlet fever, the disease in such cases being of a severe type, and likely to terminate fatally. The same care as to diet and rest in bed and all other hygienic measures should be observed as has been prescribed for other complications. The patient should be put into a well-ventilated room, and the atmosphere kept moist by having a kettle of boiling water constantly generating and giving off steam. Turpentine, eucalyptus oil, and carbolic acid in equal parts may be used in the boiling water, a tablespoonful of the mixture to a quart of the boiling water. Fomentations should be applied to the chest every three or four hours, and the patient kept quiet, and in as easy a position as possible. Plenty of hot water should be given as drink, and the bowels kept free by enemata. In all these cases of inflammation, the feeble tissues are very likely to die and break down, and abscesses form in the lungs; or if the pleura be affected, it may be converted into a large pus-sack, causing bulging of one side of the chest, and requiring a surgical operation to save life.

At all stages of the disease the scarlet fever patient is subject to attacks of diphtheria. The directions already given sa to the care of the throat will, however, usually serve to prevent this complication. Whooping-cough and measles are likely to be unusually severe and fatal when following attacks of scarlet fever; therefore patients should be carefully protected from exposure to the contagion of these diseases.

The nervous system is often very seriously affected as the result of scarlet fever, leaving the patient very liable to attacks of chorea, or what is more commonly known as St. Vitus dance. This complication is more likely to occur toward the end of convalescence and in cases where the patient is already predisposed to the disease. Sometimes the glands of the body, especially those of the neck, are infected with the scarlet fever germ. The vertebræ of the spine are also liable to become invaded by it, and Pott's disease of the spine, with wasting of the bones as a result. Patients recovering from scarlet fever should be carefully watched for any sign of spinal deformity.

The deafness which frequently occurs after scarlet fever may be avoided by taking good care of the throat, and preventing the inflammation from spreading to the ears.

From the number of serious and often fatal complications likely to develop in the patient recovering from scarlet fever, it is plain that a great responsibility devolves on the nurse or mother who may have charge of the case. Especially in the country, the physician is likely to discontinue his visits as soon as the patient is fairly on the road to recovery, and there is no one else to discover when anything is going wrong. A thermometer should always be at hand, and whenever there is any apparent change for the worse, the temperature should be taken at once.

The nurse should be on the lookout for any sign of bloating, and observe carefully the condition of the urine and the digestion.

Scarlet fever is likely to be fatal if it attacks a woman during confinement, or a patient who has had a severe injury or a serious surgical operation. If possible, such patients must be kept from exposure to this disease, and no one who has been in contact with scarlet fever should ever come near them.

PRACTICAL HINTS FOR HOME NURSING.

THE following paragraphs are extracted from an article in the July *Demorest's* by J. Belle Fanton:—

"When a member of the family is taken seriously ill, and weeks of nursing are likely to follow, it is well to know some few rules for home nursing, and set about putting them into practise in the most thorough manner possible. In the first place, put the room in order, quietly and dexterously, so that the patient may not be annoyed by any confusion. If the room is hot and stuffy, close the blinds and sprinkle them with water, or if there are no blinds, hang up green cambric and keep it wet; the hot air passing through the wet curtain will be quickly cooled. Clear out all unnecessary furniture, draw the bed out into the room, and keep the patient as quiet as possible. . . .

"Make the bed up fresh at night, and in the morning put the other set of bed-clothes in the sun to be ready again for the night; in this way a bed can be kept fresh, and making the change at night instead of in the morning will add to the chances of a good night's rest for the patient. . . . In hot weather it is refreshing to have the pillows changed several times during the day, so one may be cooling and getting fresh while the other is in use.

"Ice is a luxury sometimes not easily obtained in the country, and it is one of the hardest things to do without. Where ice is needed for external use and cannot be obtained, a cloth wrung out of cold water and waved in the air a moment may be used. . . . Sometimes bathing the face and hands with hot water — not warm — will prove more cooling than ice itself. Ice keeps well wrapped in newspaper, and little bits can be split off as needed with a hat-pin or a 'needle ice-pick' that comes for the purpose.

. . . . . .

"In giving the sponge-bath, protect the bed with a thick towel, wring the sponge or cloth as dry as possible, bathe only a small portion of the body at a time, dry, and cover quickly; in this way a chill, as well as unnecessary exposure, is avoided. Should a patient be fatigued during the bath, stop at once, and do not attempt to give a full bath until the invalid is stronger. . . .

"It is of the greatest importance that any food served to an invalid should be attractive, otherwise it may be refused; and unless a patient is well nourished, recovery will be slow. For this reason give food as regularly as medicine, and be very careful that it is just suited to the case.

"Food or nourishment, whether solid or liquid, must be perfectly fresh, plain and well cooked. Rich food and fancy dishes should never appear on an invalid's tray.

"A number of plain, soft night-dresses is one of the greatest comforts an invalid can have. Large collars and much trimming are in the way, and always get in

a bunch. Night-dresses must be large enough to be put on and off easily when in bed, and even then, if a patient is weak, this is a serious matter. They should be fine, or old enough to be soft, and the prettier the better, provided they are not fancy. Change them night and morning, and oftener if there is much perspiration, provided the patient is in a condition to stand the moving. Frequent change of linen prevents restlessness and discomfort from heat; but if a patient is quiet and comfortable, it is unwise to disturb her unless absolutely necessary.

"If the patient has long hair, it will require constant care and patience to keep it in order, particularly if the illness be severe. Keep it braided in two braids, and comb or brush one side at a time, taking care that it does not become matted low in the neck.

"The amateur nurse can add greatly to the comfort of the invalid by the careful selection of her own attire. She should wear a washable dress, made plainly, of course, for if it is fancy, the trimming is sure to get in the way or be injured; and if it is a bright color or stiffly starched, it may annoy the patient. A cool-looking gingham, plainly made, is most suitable, worn with a large white apron, and noiseless shoes. Dress the hair plainly. Elaborate hairdressing takes much time, and soon becomes disarranged; besides being apt to annoy a nervous patient. But under all circumstances be scrupulously neat; nothing is more annoying to an invalid than a careless, untidy-looking nurse."

A Training-School for Nursery Maids.

A unique movement has been set on foot in Chicago, under the leadership of Dr. Sarah Hackett Stevenson, to secure the special training of nursery maids. It is expected that a school will be opened, and work will be furnished in connection with the Maternity Hospital, a charitable institution. The movement seems to be one long needed, both by the poor, neglected little ones who have had to suffer from the incompetency of their nurses, and by the mothers who must leave the care of their little ones to hired help.

The instruction in this school will begin with the kindergarten idea, followed by a regular course of lectures on the care of children. When the nursery maid is awarded a certificate by these physicians, she will be more than a mechanical maid who systematically gives soothing sirup as a cure-all to the poor infant. She will be versed in the essential principles of physiology, hygiene, and medicine. In her category of baby knowledge will come the handling and bathing of infants; the sterilization of milk, the care of bottles in order to destroy bacteria: how to take the temperature and test the pulse; to give treatment in common illnesses; to dust the nursery so as not to get particles in the air; to make beds in the most approved fashion; and to care properly for the clothing of the little ones. Thus it is intended to equip the nursery maid in her particular duties as fully as is the regular trained nurse in her special work.

A New Occupation.

The astounding announcement is made that there has been opened in London — and that in connection with a philanthropic movement — an institute, or training-school, where young women are to receive instruction in the characteristics, temperaments, and ways of *dogs*, so that they may act as nurse maids to the canine part of London's aristocracy. This "most agreeable, novel, lucrative, and generally notable" of "professions" is known as

"dog walking," and though "a few young women have proved dull and unable to understand or appreciate their charges," and "a few dogs have proved ungrateful, and have bitten or eaten their 'walkers,'" on the whole this new occupation is pronounced a success. What a travesty!

DR. EPHRAIM CUTTER says that many affected with constipation do not drink enough water; therefore there is not enough fluid in the body for the normal secretions and eliminative fluid.

WHEN a foreign body gets into a child's ear, remember there is no need of haste in removing it. It may remain there for a long time without injury. Do not use forcible means to displace it. Never try to use any instrument in the ear. Leave that for the physician or surgeon. Probes, ear-spoons, and forceps, in the hands of a person who does not understand the anatomy of the ear, may do irretrievable harm. Insects in the ear may be killed or quieted by filling the ear with glycerine or sweet-oil, and then syringing with warm water.

The House of Calvary.

A new charity has been opened by some New York women, under the name of the House of Calvary, as a refuge for indigent women who have been pronounced incurable at the cancer hospitals. The Women of Calvary is an organization well known in Europe, but this is their first organization in this country.

WHOEVER visiteth the sick relieves him of something of his suffering.— *Levy.*

HYGIENE OF THE NURSERY.

BY J. H. KELLOGG, M. D.

The Baby's Clothing.—It must be remembered that an infant is a very delicate bit of humanity, exceedingly susceptible to cold and to changes of temperature, and that before birth it has been subject to a temperature of about 100° F. The change to the temperature of an ordinary living-room is as great a shock to the little one as a change of forty degrees to an older person. Warmth is the first of all considerations. Mothers who leave their children's arms and legs exposed because they are pretty have no conception of the risk they run in so doing, and the injury which may result to their little ones. Preparations for the infant's clothing should begin before birth.

The following description of a baby's wardrobe, devised by Dr. Kate Lindsay, of the Battle Creek Sanitarium, is known as the "Baby's Common-Sense Outfit:"—

This outfit comprises the following garments: An outside slip (Fig. 1), a flannel skirt with waist (Fig. 2), a gauze or knit shirt (Fig. 3), the elastic band (Fig. 4), and the improved diaper with pad (Figs. 5 and 6), making five garments in all. Of these the abdominal band, made of knit goods, is to be worn only so long as needed to keep the dressings in place. The diaper is also made of knit goods, and being shaped to the body, is not so likely to come off, and does not have to be pinned so tightly to keep it on. It is also absorbent, and an absorbent pad is used in connection with it. The gauze or stockinet shirt is made of a length to come down over the feet,

thus taking the place of the old-time pinning-blanket and skirt. The flannel skirt belonging to the outfit may be left off in the hottest weather, and thus the lit-

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FIG. 1.—BABY'S SLIP.

tle one will be clothed lightly and comfortably. The slip is an ordinary baby's slip with high neck and long sleeves. There ought to be about two inches difference in length between these garments, the slip being, of course, longest of all.

The dressing of the baby is in this way made so simple that it can be done by a child old enough to be trusted with the care of a baby at all. As each garment has a waist and sleeves of its own, those of the shirt can be slipped into those of the skirt, while these in turn can be put inside those of the dress, and the entire outfit may be drawn on over the baby's feet, and put on all together, it being necessary to turn the infant but once during the process, as all the clothing fastens at the back with buttons or strings. To dress a baby in the ordinary way requires two turnings of the child to put on the band, two for the skirt, two for the pinning blanket, two for the flannel skirt, two for the white skirt, and two for the dress,— twelve turnings in all. There are also at least twelve safety-pins used. The Baby's Common-Sense Outfit dispenses with eleven of the turnings, also four bands, and eleven safety-pins, there being but one safety-pin used at all, and that in the diaper. And, too, the hygienic advantage of having the body of the infant evenly clothed can scarcely be estimated. This suit is intended to be considerably shorter than the ordinary infant's dress; and as the garments are fewer in number, the action of the little limbs is not impeded, neither is there any interference with the circulation of the blood.

The material of which the infant's garments are composed should be as soft and fine as possible. Those garments which come in contact with the skin should be canton-flannel, or some soft, warm goods, rather than woolen. In hot weather great care should be taken that the child is not too warmly clad. A young infant suffers much more from heat than children and adults.

It is unwise to devote a great amount of time to the decoration of an infant's

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FIG. 2.—FLANNEL SKIRT.

garments by embroidery, etc., it being far better to expend the labor in providing duplicate garments in sufficient number so that frequent changes may be made.

The covering of the infant's feet is a matter that seldom receives intelligent attention. Although the shoes provided are usually of soft material, the infant's foot

FIG. 3.—GAUZE OR KNIT SKIRT.

is so very soft, and so readily adapts itself to the shoe applied to it, that deformity may be produced, even when least expected. The shoe should be made to fit the foot, no matter what the age of the child. So-called "rights" and "lefts" should always be worn, as it is impossible for the same shoe to fit both the right foot and the left. It is especially important that there be sufficient width in the toe.

FIG. 4.—ELASTIC BAND.

Bathing.—The daily bath is of great advantage to infants, and soon comes to be much enjoyed by them. As a rule, there is no danger that the child will be weakened in the slightest degree by taking a tepid bath every morning before its breakfast. The temperature of the water to be employed should first be about that of the body, but it should be gradually lowered, so that after a few weeks it will not be over 80° to 90° F. Many physicians recommend a still lower temperature. It may be said that the cooler the water employed, the more thorough is the protection against taking cold. No fears whatever need be entertained that the child will contract a cold by taking a cold bath.

After the bath the surface of the body should be thoroughly rubbed. It is also well to anoint the skin as often as every other day with some fine unguent, as olive or cocoanut oil, or vaseline. Fine Castile soap should be used in the bath every day or two.

Sleeping.—A healthy child, during the first few weeks of its life, sleeps nearly five sixths of the time. The infant should be taught to go quietly to sleep while lying in its crib, without rocking, petting, or carrying in the arms. If the child is taught correct habits at the start, it will give much less trouble than if humored and petted until it makes unnecessary demands. The face of the child should never be covered during sleep, as it needs an abundance of fresh air, as much as older persons. As a

FIG. 5.—DIAPER.

FIG. 6.—INSIDE DIAPER PAD.

rule, it is better that the infant should not sleep in the same bed with an older person, even its mother. In cold weather, when it needs additional warmth, one or two large bottles filled with warm water may be laid beside it. Its crib should be well padded upon the inside, so as to prevent the child from injury from contact with the hard framework.

(*To be continued.*)

HOW TO CARE FOR FOOD STUFFS.

MRS. EMMA P. EWING, in her "Art of Cookery," makes the following practical suggestions in regard to the best way to keep common food materials. She says:—

"It is quite as important to know how to take care of food materials as it is to select them, and in a majority of homes the loss incurred through ignorance or carelessness in this respect is very great. Consequently every housekeeper should be acquainted with the best methods of taking care of all kinds of food materials before and after they have been cooked, so as to avoid waste in this direction. Ignorance in selecting, caring for, and preparing their food materials has impoverished, and is impoverishing, many families.

"All cooked foods should be stored in glass, china, or earthenware vessels, and should be carefully covered.

"Eggs should be kept in a dry, cool atmosphere. If eggs are packed in dry salt, pointed end down, they may be kept in good condition for several weeks.

"Fruits and vegetables, as a general rule, keep best in a cool, dry atmosphere. Lettuce, cress, celery, and parsley are best preserved by being wrapped in a towel or napkin wrung out of cold water, then in paper, and kept in a cool place.

"Berries and all soft small fruits should be picked over carefully and scattered on plates or sheets of white paper. They should not be piled high in deep dishes until shortly before they are to be served.

"Imperfectly ripened or partly green tomatoes may be thoroughly ripened by being wiped dry, wrapped in paper or cloth, placed in a basket lined with paper or cloth to exclude the light, and set in a warm place for twenty-four hours.

"All kinds of meat and poultry should be kept in a cool, dry atmosphere, and should be suspended from hooks in such a manner as not to rest against anything.

"Milk and cream should be kept apart from all foods that emit odors, and should be closely covered. Butter also should be kept where it cannot absorb odors, and if kept in large quantities, should be covered with brine or with several inches of dry salt. A great deal of milk, cream, and butter is ruined by being put in a refrigerator or closet with a variety of other articles whose odors they quickly absorb."

The Relation of Foods to Work.

We are learning that the economy of foods is not a matter of dollars and cents only. It is the amount of returns on the money spent in strength, in nerve power, in brain-power, that is important. The housekeeper endeavors to know how much strength, heat, fat, and energy she buys in meat, flour, vegetables, and the chemical results of heat applied to foods. She prefers to preserve the health of her family to curing disease; she knows the waste that illness involves; the old-time shield and protector of conscience that threw the responsibility of disease on God has been dissolved by science. We know what follows if the body is not well nourished, if the air breathed is not kept pure. The relation between drains and fevers is no longer a mysterious dispensation of Providence. Good health is now recognized as the combination of inheritance, environment, food, and a just knowledge of ability, strength, and self-control. The educated woman of to-day is not the woman who knows poetry, history, art, and literature only, but she who adds to these things a knowledge of sanitation, hygiene, and foods, and who applies her knowledge to the business of living.

True economy consists in buying the

least quantity of waste. We grow more careful in buying foods as we learn what proportion of them is necessarily waste.

We should scorn the business man who did not study to manage his business with the least possible loss. If he put his money into machinery, we should expect that, if he wished to make money on his investment, he would see to it not only that his machinery yielded the greatest amount of product, but also that the best intelligence at his command should be used to protect the machinery from useless wear and tear. Its product would not be produced by its own destruction; nor would its product be turned out in intervals of activity followed by intervals of idleness made necessary by breakdowns from overwork or neglect. Repairs are made out of profits made on products.

Work done in ill health is sometimes good work, but rarely. Even then, who can say how much better that work would have been if the producer had been in perfect health?

It is this close relation between that machine, the body, the care it receives, and the work it does, that makes the question of foods so important, so imperative, so worthy the best intelligence of every housekeeper. — *The Outlook.*

Educating a Child's Appetite. — A child's appetite is quite as susceptible of education, in both a right and a wrong direction, as are its mental or moral faculties, and parents, in whose hands this education mainly rests, should give the subject careful consideration, since upon it the future health and usefulness of their children not a little devolve. We should all be rulers of our appetites instead of subject to them; but whether this be so or not depends greatly upon early dietetic training. Many a loving mother, by thoughtless indulgence of her child, in season and out of season, in dainties and tidbits, that simply serve to gratify the palate, is fostering a love of appetite which may ruin her child in years to come. There are inherited appetites and tendencies, it is true, but even these may be largely overcome by careful early training in right ways of eating and drinking. It is possible to teach very young children to use such food as is best for them, and to refrain from the eating of things harmful; and it should be one of the first concerns of every mother to start her children on the road to manhood and womanhood well trained in correct dietetic habits.

Bacteria in the Refrigerator.

The careful housewife may feel that because her food is put away in the refrigerator, it is safe from germs; but the *Microscope* says that bacteria live and grow in melting ice, and are liable to contaminate whatever is kept in the refrigerator. Meat, butter, and milk are specially liable to contamination with putrefactive germs. The only safety is to wash and scald the refrigerator often, especially the waste-pipe which conveys away the water from the melting ice, as it frequently becomes clogged.

To prevent the shells for pies which are baked before filling from puffing up and rising in spots, professional pastry cooks cover the crust before putting it in the oven, with a piece of oiled paper, and put in bits of bread to be browned, and in this way perfectly preserve the evenness of the crust.

THE French *chef*, in making soups of green peas or beans, breaks them up previous to cooking, and then simmers until their flavor is thoroughly extracted.

SOME NUT BREADS.

Almond Sticks.—Sift together so as to blend thoroughly one cup of almond meal and one and one-half cups of graham flour. Mix to a dough with as cold water as is obtainable, dropping the wetting very slowly into the flour, and mixing each spoonful to a dough before adding more. Gather these fragments of dough together and knead well, drawing the thumbs apart in working the dough, and folding it over and over to incorporate as much air as possible.

When it is well kneaded, the dough should be elastic to the touch and smooth. Divide it into small portions, roll each over and over on the kneading-board with the palms of the hands until a roll is formed not more than one-third inch in diameter; cut this into even lengths, four inches in length, and place in rows, not touching, on a perforated baking-pan. Bake in a rather hot oven for thirty minutes or until well done and of a light brown color.

Cocoanut Crisps.—Pulverize desiccated cocoanut by pounding in a cloth or in a mortar, or by pressing as much as possible through a fine flour sieve. Use the fine portion only. Take one-third cocoanut thus prepared and two-thirds flour (Pillsbury's best or entire-wheat flour). Mix to a dough with ice-water, knead lightly, roll with a rolling-pin into sheets scarcely thicker than paper, prick with a fork, cut into small squares with a knife or wafer-cutter, and bake.

Nut Butter Puffs.— Dissolve peanut butter in five times its own volume of water. Into one cup of this cream beat one egg and sufficient sifted graham flour (part white flour if desired) to make a batter of proper consistency. Bake in a moderate oven until well dried out,—about fifty minutes.

Almond butter may be used instead of nut butter, but in all these breads in which eggs are used the batter should be poured into warm, not hot, gem-irons.

A Bit of Ninety-in-the-Shade Philosophy.

"How do you manage to get along this boiling weather?" said one of the characters in a story which has been running in my mind all day. "I don't hear you fret over the weather at all, and the rest of us can't talk about anything else."

"I just don't listen to the message," was the reply.

The more heed we give to anything that is n't pleasant, the more it annoys us. I can make myself so nervous over the ticking of a clock in the next room that I can't go to sleep for two hours, or I can quietly think of something else, and very soon my brain does n't hear the message. The clock has stopped running so far as I am concerned. I think one may learn to put aside the annoyance about the weather in the same way. I make the conditions as comfortable as circumstances will permit, and that is the end of it. I don't listen to the hot weather "tick," and very rarely think about the unpleasant features of the weather at any time of year. Why, the beauty of those shadows trembling in the sunshine, the pretty laziness of the trees as they sway in the breeze, and the great masses of cloud mountains making new and beautiful pictures every moment, have the power to drive away more than one annoying "tick" when we have learned the secret. The energy that many people put into flourishing fans, mopping their brows, and finding fault with the weather these days, would bring them out of a chill with the thermometer at zero.—*Belle M. Perry.*

TRAINING IN OBEDIENCE.

BY MRS. E. E. KELLOGG.

ONE of the first lessons in the training-school of life which a child needs to learn is that of obedience. The influence of this lesson well learned upon his future character cannot be overestimated. Obedience is the root from which springs almost every virtue and good habit.

It is obedience to right principles, obedience to the dictates of conscience, which in later years is to prove a strength and surety against evil; but the preparation for such obedience begins in the child's first learning to obey his parents. Obedience in one direction leads to obedience in others. The child who willingly and cheerfully obeys his parents will be the more willing and ready to obey his God.

Obedience is not a natural instinct which every child possesses, as a matter of course, but it is a trait of character wholly dependent upon education and training. Most children receive their training in obedience incidentally, just whenever and in whatever way circumstances happen to afford opportunity.

The too common method is to attempt to teach obedience by reproaches and punishments for disobedience, thus building upon the negative side only of the child's character. Such parents are much like a gardener who should spend his whole time in trying to hoe up the weeds, giving no attention to watering and pruning the plants. Though the weeds might not choke them, yet the plants would not grow from lack of care and moisture. A far wiser plan is not to "watch to correct evil, but to watch to prevent evil."

Parents must not be content to do as "well as they know how," but must make it their constant aim to seek for and secure wisdom and knowledge for their God-given task, realizing that upon their faithfulness may depend the salvation of a soul.

In the early stages of education more must be expected from habit than from principle. A trait of character becomes fixed only by becoming a habit. The habit of obedience early implanted will exert an influence over the child by giving a bent to his inclinations and actions, making it easy and natural for him to obey, thus serving as a preparation for obedience from principle later on. In order that obedience shall become a habit, the training must be systematic and continuous. The discipline in this direction must also be unswerving, not enforced one day and overlooked the next. One of the most frequent causes of failure to secure good results from training in any direction is a lack of continuity of discipline. One day the standard is set high, and every effort made to keep it there; the next day the mother is hurried and nervous, and what was prohibited yesterday is permitted to-day because it is less trouble to allow it than to make the exertion necessary to keep up the standard. The effect upon the child is most disastrous. He guages his privileges to do or not to do certain things, not by any right or wrong involved therein, but by the mood of his mother. Such fitful, spasmodic efforts toward the establishment of a habit of obedience may be carried on indefinitely without success.

An evenness of government kept up with unswerving diligence from day to day is one of the most essential requisites in child culture. It requires a great deal of effort on the part of parents to keep up such a continuity of discipline, but it is the only way to establish habits in the child's character. No good thing either in this life or the life to come is obtain-

able without effort and oftentimes much sacrifice on our part, and the very high privilege of directing and molding the characters of God's little ones demands of us a special self-sacrifice.

Like all responsible work, child-training in any direction requires a firm purpose, constant application, and the utmost patience and perseverance. Parents need constantly to keep themselves as well as their children in training, and this is oftentimes quite the most difficult part of the task.

Obedience will seldom be refused to reasonable requirements exacted in a proper way by one fitted to demand it. If our children fail to render prompt and willing obedience, let us examine ourselves, our motives for exacting obedience, and the manner in which our requirements are made. Let us bear in mind that obedience is not a forced compliance to our demands ; that is only the outward semblance of obedience. Real obedience, spontaneous from the heart, is a willing, cheerful compliance with that which is rightfully required by authority.

If parents will candidly examine their motives, they will often find that what they require of their children is obedience to their own self-will, a submission of the weaker to the stronger, because they can compel it, or because it suits their selfish convenience. The fact that a child has been entrusted to them does not give parents the right to tyrannize over him, demanding obedience to arbitrary decrees made merely for their own convenience or pleasure. Nothing except what is really needful should be commanded of the child, and such requirements should be in harmony with a consistent and all-pervading desire for the child's best good. Such requirements should be prompted by thoughtfulness, sympathy, and with love for the child, — a love which will beget love, — and then real obedience which springs naturally from love and respect will be willingly and cheerfully rendered.

Children, as well as persons of older growth, have rights which should be respected, and a spirit of insubordination and disobedience is often fostered by parents through constantly prohibiting the child some harmless thing, simply because it interferes with the selfish convenience of its elders, or because the parent fails to give the matter sufficient thought. Parents sometimes fall into such a habit of saying *no* without weighing the matter in careful thought that prohibition meets nearly every request or desire the child expresses. Being thus continually prohibited of harmless pleasures, or told to stop doing something, the child soon comes to feel the injustice of such demands, and is not only likely to seek opportunities for disobeying such repeated injunctions, but is apt to look upon obedience in other directions as a sort of tyrannical restraint placed upon his actions, simply because it suits the mood of those, who, owing to their superior position, are able to enforce it.

We need most carefully to watch ourselves, that the motives which actuate us in making our requirements be unselfish, based upon superior judgment and wisdom, and a reasonable probability of securing the child's best welfare. Such are the principles which form the foundation of the divine commands, and which should serve us as a guide in making requirements of our children.

It is of the utmost importance that parents understand that the golden opportunity to begin their efforts to cultivate a habit of obedience lies at the very outset of life, when the child's powers are in a teachable, plastic state, easily guided and directed into the right path. Let them begin early, when it is easy for the child

to give obedience, and easy for the parent to secure it. At no other period of life are their chances for success so great.

Even before the time for giving verbal commands arrives, much may be done in giving a bent in the right direction by establishing regular habits of eating and sleeping, which shall proceed with such uniformity that the little one becomes a well-governed creature even in babyhood.

From the time the child is old enough to understand words, prompt obedience will depend very much upon the form and manner in which the requirement is made. Positive commands should be avoided as much as possible. It is better, whenever practicable, to use the form of a request. Children ought and can be taught to so respect their parents' wishes that a simple statement of the parent's preference as, "I would rather that you do not do," or "Will you please do," will be all-sufficient. If, however, commands are necessary, as they sometimes are, show by the tone in which the requirement is made that you have faith in the child, and expect he will obey you. A hesitating, doubting tone of voice affords the child an opportunity for disobeying; he naturally infers either that you do not expect he will mind, or that it is immaterial to you whether he does or not. The greatest watchcare needs to be exercised that, while meaning to cultivate obedience, we do not by the tone in which the command is given, suggest and invite disobedience. Quiet, pleasant, even tones are always the most conducive to obedience. Hasty commands, given in a loud, stormy, fretful, or scolding tone are rarely obeyed. Such tones only weaken authority, since they indicate a lack of self-control on the part of the one giving the command. Self-rule is the secret of control over others. Neither elevation of the voice nor strong emphasis are indicative of firmness and decision. Gentle words may be very firm.

Do not give too many commands at once. Children are easily confused by a multiplicity of demands. Let there be only such and so many requirements made as can be faithfully followed up and attended to. It is better not to command at all than to make a requirement and fail to see that it is obeyed.

Again, do not make demands of a child beyond his strength, either physical or moral. Remember that he is immature in character as well as in physical powers, and apportion your requirements according to his ability to do.

With children old enough to understand, much can be done to cultivate obedience by keeping before their minds high ideals of obedience; by telling them of frequent incidents when obedience resulted in great and lasting good to others, by reading to them the Bible stories of Abraham and other similar examples of obedience, dwelling upon the blessedness of obedience and the happiness it brings to us. We all know that the things about which we think most influence us most, and I believe much can be done by keeping true obedience uppermost in a child's thoughts.

We should also show the child that we ourselves are obedient to the dictates of conscience, to the laws of God, to the laws of our being, to the laws of our country, that the child may not feel that the parents' position is one of freedom, while his own is one of restraint, and thus imagine that age and strength mean liberty and privilege. That example is more than precept is a principle which underlies success in everything pertaining to child culture. Whatever a parent desires his child to be, that he must himself be; and what he wishes his child to avoid, that he must himself renounce.

To illustrate: A father said to his little

son who was hesitating about obeying his request, "Whose will must you do — your own, or papa's?" "Papa's will," came the reluctant answer, followed by the question, "But whose will must papa do then?" The father was able at once to answer, "God's will," and to explain how he considered such obedience to a wiser and a better will than his own his greatest privilege. This father placed himself in full sympathy with his child by showing him that he, too, gave up his own will. The example of our daily lives bearing witness that we recognize and obey a higher will than our own, will prove a powerful influence in aiding to establish a habit of obedience in our children.

If a child has a tendency to disobey in any special direction, watch to circumvent it. Instead of watching to correct the evil when he shall have accomplished his purpose, endeavor to change his purpose by giving him something else to think about or to do which will lead him away from temptation. Helping him to avoid temptation will aid him to gain in strength, to overcome temptation. When it is hard for a child to obey, and yet he does so at some times quickly and cheerfully, encourage him and help him to do so again by telling him how pleased you are to see his prompt obedience.

When denials are necessary, soften the pain they cause by loving sympathy. Lead the child to see that it is because it is right and best that you deny him, and that you share the pain the denial brings.

Sometimes when the child is self-willed or obstinate, an alternative given him will help him to a willingness to obey when otherwise he would be stubborn. For instance, if he is engaged in something in which he especially delights, give him permission to resume it at some future time. Obedience should be made as unoppressive as possible; while it ought to be unquestionable, the more easy the compliance is made, the more readily will the habit of obedience be established. It should ever be our endeavor to avoid as far as possible the calling into action of any such undesirable qualities as stubbornness and self-will by making no unnecessary requirements, remembering that all bad qualities as well as good ones are strengthened by exercise. If the child is self-willed, the more that self-will is called into action, the stronger it will become, just as the muscles of the arm are made stronger by constant use.

MAKE THE SUMMER GLAD.

O MAKE the summer glad with a bit of bloom
To cheer the hearts, day by day,
Upon their toilsome way,
With the blessing of its beauty and its sweet perfume.

O make the summer glad with a bit of green,
To make for weary feet
A carpet cool and sweet;
A place to come for heart content when west'ring shadows lean.

O make the home place beautiful with grass and flowers,
For love cords best entwine
With leaf and flow'r and vine,
And home is where the heart dwells in sweetest, gladdest hours.

— *Dart Fairthorne.*

THE SALVATION OF MR. CRANDON.

BY MRS. S. M. I. HENRY.

V.

WHILE Dr. Grant was on his way to the parsonage, and Mrs. Grant was getting ready to follow with the necessary supplies, a scene of terrible pathos was transpiring in the sick-room. Mrs. Crandon had come in with her usual air of business, although she did look white and worn. The strain of mental anxiety and constant watching was beginning to tell on her. She had refused to allow the care of her husband to pass into other hands, but yet it had been clear, from the first, to Dr. Green, as well as to others, that her husband would need a nurse: that she was not "good for him" in his present condition. If the truth were known, she had an inward conviction of this fact herself; but, possessed of a certain pride of management and independence, she was unwilling to drop the reins, even in the sick-room.

Mr. Crandon had seemed all the time strikingly "out of sorts" with her efforts. "Don't, Mary," was his most common recognition of her endeavors to make him comfortable, rather than "Thank you." "Don't move about so much," he had said, just because she was trying to tidy the room. He turned his head with disgust at all the carefully prepared dishes with which she sought to tempt him to eat, and the cup of hot milk which she told him again and again he must take, because Dr. Green had said so; and this morning, as she realized that his case was growing serious, she had begun the exercise of a species of firmness which revealed, or suggested, a fixed intention to carry her point.

She had brought in with her a napkin-covered tray. This she placed on the table, and taking a towel from the rack, dipped the corner in water, and went to the bedside. Mr. Crandon was propped on pillows. His eyes had closed, after the first glance at her as she came in, and he was breathing short and fast. She spread the wet towel on her hand, and brought it down on his face, covering mouth, nose, and eyes, and began to rub vigorously, while with the other she held his head firmly down. For an instant he was perfectly still, then he began to struggle with all the little strength he had left, and finally grasped the floating, flapping end of the towel, and succeeded in dragging it away, and lay blue and panting, with his forehead drawn into knots, his eyes glaring wildly.

"Go away," he gasped. "Don't — touch — me again. Do — you intend — to strangle — me?"

"George, what do you mean?" she retorted hotly. "You have not said anything but 'don't' or 'go away,' to me since you have been sick; after all that I have tried to do for your comfort. I don't understand it; I declare I don't. No one would ever suspect from your actions that I was your wife. Who is going to take care of you if I do go away?"

"O dear!" and a dry sob was the answer.

"Well, I am sure I don't know what to do. You need not have your face washed if you don't want it, but you must have a lunch; you haven't eaten a mouthful today. You must have your medicine, too. Yes—" as she saw the same old look of disgust come to his face, "you must take both this time. You can't go without eating — I can't have it — I do not want to have — you die — ."

"Wish — I — could!"

"George, if you were not sick, I should almost believe that you had really done something wicked. If you are not

willing to try to get well, you are certainly not ready to die. That is one sure thing."

He did not reply by words, but closed his eyes, and turned his head away a little ; while his face took on an expression of despair and hopeless endurance.

She stood and looked at him with tears gathering. But she quickly squeezed them back to their source, and was opening her lips to say something further, when she heard the telephone bell from the study, and went to answer it. This is what we would have heard if we had been at her end of the line : —

"Hello !" — "Yes, Dr. Green."— "No, not very well." — "Yes, I am rather." "Don't feel very hopeful this morning." "How soon will you be up?" — "What's that? Dr. Grant nurse him for you?" — "Well ; that is remarkable kindness." — "Yes — I think I could trust George to him, and rest. I need it too." "You will look after him yourself?" "That will be all right." "It seems very strange for him, with all his own patients, to do such a thing." "It is only another proof of how good our people are ; they are the best in the world." "Thank you, we will try to deserve it ! Good-by." — "*Wait !* I want to say that I feel better already ; this has cheered me up wonderfully.— Good-by."

As she came out of the study, she met Dr. Grant, who had come by a "short cut," and entered quietly. Her heart was full, and she probably never gave him a more cordial reception. Tears rushed to her eyes.

"I have just had a telephone from Dr. Green, and have heard of your generous brotherly kindness. What can I say?"

"You need not say anything : your husband belongs to us also, you know, and we cannot spare him ; that is all. Now I am going to have you show me where a few things are,— sheets, towels, cloths, and supplies, generally,— then you must go and rest. Katherine will be here soon. She will relieve me when I must go out for a while to see my own patients. You are to have no more care if we can prevent it."

"Well, I had lost heart when Dr. Green called me to tell me what you and he were going to do between you. I feel this kindness deeply. How much I need a friend this morning you don't know. George is not like himself at all, — wants to be left alone, won't eat anything, don't seem to want to live. I was just — you understand — didn't know what to do. I thought that I could not have a nurse about, but you and Mrs. Grant are different. Besides, I find that he needs more than I am able to do. I was beginning to despair, I think ; but you give me courage."

"That is right ; you just keep right on feeling that way. Now I will go in and see him. I am quite sure I know just what he needs, but will look at him first. No—only one at a time at present. If you will have a pitcher of boiling water, and one of cold, and a lump of ice as big as your two fists down here just this side of the door for me soon, with the other things, then you will be ready to play with Katherine when she comes," and he laughed merrily, a laugh which called up an answering smile.

He opened the door, entered, and closed it behind him.

"Good morning, Brother Crandon," he said cheerily, but the only response was a slight movement of the white, weak hand, as if reaching out for something, and a dumb, hopeless appeal in the worn face. Dr. Grant grasped the hand, and held it firmly. Where was all that strength and beauty that had distinguished the man before him? Could this pitiful sufferer be the brave servant of God who had so inspired and led his people? What

a work of the enemy was this! A lump gathered in his throat, and a prayer arose from his heart. He made an unobtrusive examination, and laying the cold hand back under the cover, came out to begin his preparations.

Katherine was just coming in through the dining-room with Mrs. Crandon.

They were holding each other's hands.

"Good!" he said with the irresistable cough that was always bubbling up out of the springs of his happy, boyish nature, 'Katherine, you are just in time. Get the spine-bag ready quickly, please. Hot and cold, you know."

"Don't you think he ought to eat something, Doctor Grant?" asked Mrs. Crandon. "He has not had a mouthful this morning. I have a nice bit of steak. He has not had his medicine, either."

"I will give him some treatment first, and then see about his food. He cannot take much as he is now. It is not surprising that he has no appetite. Will you give me a good, heavy flannel blanket, and those sheets and towels, please? Katherine, I'll give him a saline sponge."

"What in the world is that?" asked Mrs. Crandon, as Katherine produced the spine-bag, and started for the kitchen.

"I'll ask Katherine to try it on you as soon as I am through with it; and you will find out what it is. It will do you quite as much good as it will Brother Crandon, I suspect."

"That must be some of your queerness, Doctor Grant. I have heard that you do things to your patients that nobody ever thought of before."

"O, by no means, Mrs. Crandon. I am not original at all; I learned it at the hardest. But if I understood you when I came in, you thought you could trust me? I think you intended me to believe this?"

"Yes, Doctor Grant, I can. I believe in you as a neighbor and a Christian; and since Doctor Green sent you, I must believe in you as a nurse, and perhaps as a physician, even if you have queer practises. But you must not wonder if my curiosity is greatly excited.

"I will see that it is fully satisfied. I will have Katherine give you the very same treatment which I am going to give to your husband; and if you say so, I will put the whole family on much the same diet."

"Diet! there is where we should come to blows."

"Thank you, Kate; that is all, I think, now. Blows? Mrs. Crandon — O no — not that; but we will talk about that later. You'd better put her to bed, Katherine, and give her some treatment. She needs it, and has a curiosity to satisfy" — and he handed his wife the prescription which he had hastily scribbled: it read "h & c. s. sp & mass."

(To be continued.)

EVENTIDE.

WHEN fades the sunlight in the western sky,
When the dim shadows fall on sea and land,
When breezes whisper of the day gone by,
And home the blackbirds fly, a chattering band;
Then, lonely heart, faint not, but be thou strong,
Thy life shall also have its evening song!

Shoreward at dusk the sea gulls take their flight
And slowly all the ebbing tide-waves break;
Homeward the skiffs return again at night,
And fishing dories safest harbor make;
'Tis evening hour that brings the wanderers home;
Take courage, heart! thine eve shall also come!

'Tis then the laborer turns from toil and care,
And as the busy hum of workers cease,
Soft chime the vesper bells for praise and prayer
And all the earth is hushed in rest and peace.
O weary soul, thy rest shall surely come,
Some evening time thy God shall lead thee home.

— *Genie M. Smith.*

THE EVANGELINE GOWN.—(See Publishers' Department, page 518.)

THE ART OF CUTTING GARMENTS.

PARISIAN dressmakers, who lead the world in the art of dressmaking if not in its ethics, pay very little attention to cutting systems. But they do pay a great deal of attention to selecting the material for a dress, so that it shall suit the prospective wearer and the occasion; and they are very particular to have the lining which is best for the outside material and the style of making; and they are extremely cautious in cutting the lining and outside to see that they are on exactly the same grain of the goods, and that each bodice-form and skirt-breadth is so cut that the cross threads are truly horizontal, and the up-and-down threads actually perpendicular.

One of the distinguishing marks of amateur dressmaking is a general wry appearance. It is brought about by a mistaken idea of economy. In order to "save" a few inches of cloth the home dressmaker lays her pattern on the goods, turning the pieces "every which way" to make one curve fit into another, and thus, as she thinks, avoids waste. Thus she cuts her cloth, and after that no one, however much of a genius in dressmaking, can prevent the waist or skirt thus cut from "pulling," "twisting," "sagging," "hooping," and looking like the mischief generally. . . . It is necessary to a perfect fit to have the outside and the lining correspond. . . . The straight thread of the outside must be on a straight thread of the lining at the same point to insure smoothness. . . .

The first-class dressmaker, takes great pains to have not only waist-forms cut on the right grain of the cloth, with lining to match, but she has the skirt-breadths just as carefully lined. And she does not stop there. Each breadth of the haircloth skirt facings and all other interlinings and facings are fitted to the grain of each breadth of the lining proper and the outside. When this is done, there is never any puckering of the outside over the inside of waist or skirt, so common a feature of poorly made dresses.

The home dressmaker, to economize time, often doubles the goods so as to cut two fronts, two backs, etc., at the one time. This is all wrong. Each piece of the dress should be cut by itself. Tailors not infrequently cut out the different portions of dozens of coats at one cutting, but they use firm cloth that does not slip and "slew," and even then they cut thus by the wholesale only their cheap grades of garments. Every part of a fine custom-made garment is treated as if it were the most important portion of the garment, and is always cut a piece at a time. . . .

Do not be afraid of basting. Use soft finished white cotton, and take rather short stitches, and set the needle each time at an angle. This holds the goods firmly. Much amateurish basting is practically valueless. Good dressmakers and tailors do a great deal of basting, and some of it is as fine as coarse sewing.—*Jenness Miller Monthly.*

Summer Petticoats.

The best model which we have seen for skirts of any sort has gored sides and front, and a back with considerable fulness. The skirt ends below the knee, and a full ruffle is set on to give the rest of the needed length. This, lower down, in its turn bears two ruffles. To give the petticoat the proper swing, the edge of the deep ruffle is stiffened with feather-

bone, and for wear's sake is bound with velveteen. Each of the ruffles set upon it is hemmed for a depth of two inches, and shows several rows of machine stitching. The rows may hold in place fine cords, or a bias strip of haircloth or some other stiffening that does not lose its elastic quality, may be laid between the hem and the outside. Sew all seams to the top, face, and run a tape from each side gore to the middle of the back, letting them cross in the middle breadth, and issue through eyelets. This style of petticoat can never yawn.

The material may be taffeta silk, glorie, mohair, or sateen, according to the amount of expense it is desired to put into the garment. Useful silk petticoats for traveling and general wear are made of the shepherd's check silk, trimmed with several narrow ruffles, each one bound with black, and the lower two containing feather-bone.

Washing Silk Underwear.

White silk stockings and underwear are a special delight to the wearer in hot weather, but are frequently the cause of strained relations between the owner and the laundress, whose ideas in regard to the proper cleansing of these garments are vague, to say the least. Stockings should be washed and rinsed in lukewarm water and wrung between towels. Silk underwear should be soaked twenty minutes in warm suds and ammonia water, allowing a tablespoonful of ammonia to a gallon of water. Rub gently with the hands, squeezing, pressing, but never scrubbing. Do not be too lavish in the use of soap, and beware of rubbing soap directly on the garment. Always use it in solution. Rinse through two clear warm waters of the same temperature as the suds, adding to the last water a trifle of ultramarine blue and a teaspoonful of liquid gumarabic. Smooth out and hang as carefully as possible so as to avoid the wrinkles so hard to iron out of silk without injuring the fabric. When nearly dry, press under muslin. — *Brooklyn Standard Union.*

Children or Clothes?

Which is the more important, — the children or the clothes they wear? Of course you do not hesitate to say, "the children," yet many mothers make slaves of themselves, as well as their children, for the sake of their wearing apparel.

"Now, Ella, don't you know you have your new shoes and a clean dress on, and you must not go into the dirt? Be mama's little lady to-day, won't you?" Thus the "little lady," made so conscious of her clothes, is either kept indoors or on the walk in the yard. She sees so many things she wants in the grass, or she never wanted to make mud pies so much in her life; and a rebellious feeling comes over her, making her wish she did not have to wear clothes at all. "Mama never wants me to do anything but look pretty, and I don't care now how I look."

Is there any way out of this difficulty? Yes; the child should have due appreciation of neatness and order, but she must not be deprived of good, wholesome strength-giving play on account of her clothes. If she can have but one or the other, give her play, and let the clothes be secondary.

I once knew a mother, a highly cultured woman and a leader in society, who displayed her culture and common sense by dressing her girls in the morning in dark gingham, her boys in dark waists and strong trousers, and sending them into the yard. They climbed trees, made gardens and mud pies, and played house to their heart's content, never a word being suggested to them about clothes. On the contrary, this fashionable mother

herself often put on a short outing dress, and went out of doors to play with her children; and those were their happiest hours. Often they would settle down in some cozy nook, while she told them stories, and helped them to see the beauties around them. Then they went in and were made fresh and clean and took a nap, after which they were dressed in neat, simple clothes, which showed thought rather than money, and were ready for a walk or a quiet play in the house, being sweet and clean when the father came, without one scolding. This was during vacation. While they were at school, the hours for their play and gingham dresses were fewer, yet the dear old gingham dresses and mud-pies still found companionship several times a week as long as the weather permitted.

Study your children more than their clothes.—*Babyhood.*

WATER marks on silk may be removed by sponging with ether.

GARMENTS made in accordance with art principles are never out of date.—*Emma C. Cushman.*

IN the offices of the Chicago telephone, dress reform comes of necessity, the managers having ordered that no dresses be worn that come within three inches of the floor, as the long skirts stir up a dust that impedes the working of the delicate long-distance telephones.

HOW TO GUARD OUR YOUTH AGAINST BAD LITERATURE.

FIRST, there must be a conviction within the hearts of the parents that wholesome food for the mind is as essential as wholesome food for the body. They should be as careful to quarantine the mind from contagions of immorality as they are to ward off infectious diseases from the body.

Character-building begins in earliest infancy. Progress at first is not rapid, and yet the infantile mind begins to absorb influences — to store up impressions — long before there is outward indication of what is developing within. The smile of a mother's love, doubtless, is the first decoration in the chamber of imagery in the baby's heart. That love-look, accompanied by tender words, comforts, soothes, preserves harmony of feeling, and brings a sense of security. Happy is that mother who, realizing the higher interests of her child, enters this sacred chamber of her child's heart not only with her love, but introduces the love of Christ as something still more beautiful — hanging, as it were, these two pictures as the first decorations upon the walls of memory's storehouse. Happy is the child thus blessed. Happier still in after life if the heart be further filled with beautiful stories; with the divine influences of God's word; with love for flowers, singing birds, and other innocent and lovely things from nature.

Parents are divinely appointed artists to decorate the walls of memory's storehouse, and marvelous resources are at their command. God's word teems with hallowed influences. The fields and woods are filled with sweet perfumes of fruit and flowers. The forests are flecked with many-hued songsters. Babbling brooks offer their song of praise to their Creator. The lowing of the kine, the bleating of the lambs, the deep, ominous growl from the beasts of prey, all possess

attractions which may be borrowed as helps. The lightning and the thunder, the storm-cloud and the cyclone, but tell of the power and majesty of the Ruler of all hearts.

Good books, inspiring poems, sweet music, clean stories,— all are elevating, and within the reach of most parents. All these are helps — colors lent from heaven — to be used in beautifying child life and character. Mingle these, as lines of beauty, tints, and colors are employed in some master work of art, and tastes will be formed and character established upon a lasting foundation.

Alas, how few parents are there who remember that divine and spiritual agencies are ever at hand ; that all nature offers her perfume of sweetness, loveliness, majesty, and power as helps in beautifying child life, building up character, and forming a taste for noble things ! Establishing a habit of right thinking, placing thought upon a high and lofty basis, creating a thirst for the beautiful are some of the best safeguards against low and defiling publications.

Having started right, care should be had that the mother's efforts are not checkmated by some vapid, sentimental, weak-minded servant or nurse girl. Good reading should be furnished servants, and no servant should be allowed to bring into the home matters which are unclean, immoral, or criminal. Servants having the care of children often read or tell them trashy and sensational stories which pique curiosity, arouse a craving for the unreal and exaggerated, and familiarize the youthful mind with details of shocking crimes. These effects are often produced by the nurse's taking children before shop windows, news-stands, and bill boards containing pictures of criminal and sensational matters, and for the sake of keeping them quiet allowing them to gaze upon things which would not for one moment be tolerated in the home by the parent. Native innocence is destroyed, tastes are perverted, and the receptive mind of childhood soon craves these unhealthy excitements.

The first lewd thought is an entering wedge of Satan to corrupt the taste for the divine and beautiful, and checkmate parental training. Evil thoughts, like bees, go in swarms. Given place for a moment, others recruit their leader, each one striving for the mastery over the soul. Imagination and fancy, the reproductive faculties of the mind, are awakened and set in motion.

When these looms are started, fed by evil influences gathered from criminal and vicious books and pictures, then satanic entertainment is furnished the boy and the girl. The devil never loses an opportunity to weaken good intentions, and always assails the human soul at the most vulnerable point. As has already been seen, bill-boards and shop windows bid for the ruin of the young. These degrading things often start the cog-wheels of the reproductive faculties of the mind in motion. Details of crimes in the daily press breed criminals. Many newspapers are, practically speaking, the primary department of crime. They not only give shocking detail of gross crimes, but they minutely discuss the weapon used, and how it can be used to the best advantage. The particular kind of poison employed is named and its particular characteristics described ; even the secret attack of highwaymen and burglars upon helpless men and women in the dark are told with blood-curdling detail.

Coming a step lower in the scale of corrupting influences, we find still more terrible foes to public morality. Unclean publications, like canker-worms, do their work secretly and in the dark. Intemperance is the more chivalrous foe of the two, for it hangs out danger-signals in the

red nose, the blear eye, the bloated countenance, the tainted breath, and the reeling step. But a child whose mind has been affected by obscene books, pictures, and similar vicious influences too often conceals the infection within his heart. Unknown to parent and teacher, the undermining influence goes on, while the child finds excitement and entertainment by imagination's bringing up those deadly and seductive things which have entered his mind through eye or ear. Corrupt thoughts and perverted imagination set the wheel of evil habits in motion. Evil habits are like grooves in the brain, into which the wheels of a perverted nature continue to run, destroying all manly and womanly instincts, discounting future usefulness, and mortgaging the soul to the spirit of evil. These secret evils rob the eye of its youthful luster, the cheek of its healthy flush, and the voice of its ring. They unnerve the arm and steal away the elastic step.

Perhaps no more effectual way of warning parents and teachers concerning the dangers which assail the youth of this nation can be found than by giving a few statistics gathered from the last report of the New York Society for the Suppression of Vice. At the close of the writer's first twenty-five years of active service, a meeting to celebrate that occasion was held in Carnegie Music Hall, New York City, on the evening of March 2, 1897, at which time the following statements, among others, were presented: "There have been 2,164 arrests made, and more than seventy tons' weight of contraband and immoral matters have been seized and destroyed." There is another item in this report that speaks volumes of warning to parents and teachers; namely, "142,392 letters and 1,335,392 names and addresses seized in the possession of persons arrested." To these addresses and those found in the old letters, the venders of criminal matters send advertisements of their nefarious publications and implements of vice. Many children through the medium of the United States mail — the great artery of communication — have thrust upon them deadly influences, unbeknown to their closest friend. These atrocious foes, striking in the dark, are every one of them recruiting agents for the infernal regions. Many and many a lovely boy and girl has received a mortal stab through these intrusive and unsought missives of vice.

When a boy or girl is discovered to have gone wrong in life, seek first to ascertain what influence has been secretly at work in the heart of this afflicted one. For all such tempted and tried ones let the utmost stretch of Christian sympathy and charity be extended. — *Anthony Comstock, in Chautauquan (abridged).*

FORGIVE.

If ever friend have done thee wrong,
And, in its shadow brooding long,
Thy sorrow find thee thus to-day,
With head turned from the light away,
The sun of truth shines for thee yet;
This summer day rise and forget!

Forgive, forget! There is no trace
Of last night's storm upon the face
Of earth to-day. And so in thine
Let charity erase each line,
Put memory of wrongs away;
Forgive, forget! this summer day.

Forgive! for fear another day
Thy lips in death refuse to say
The longed-for word — thy hand be still
Upon thy breast, nor reach at will
To him whose grief is more than thine,
Guilty beneath the eye divine.

— *Alma Pendexter Hayden.*

Story-Telling for Children.

From an article under the above title by Mrs. Stanley in the *Outlook*, we extract the following paragraphs: —

"Story-telling is a gift. . . . To sit among a circle of eager children with shining eyes and expectant faces is an inspiration to any story-teller. You are filled with ambition; to fail would be disastrous; and one feels, as Miss Wiltse has aptly expressed it, that you need to bathe in the Jordan seventy times seven before you are fit to say to any little child, 'Come, let me tell you a story.'

"A little girl, too ill to go to school, was grieving because she must miss the nature-lesson and the morning story; the mother, to comfort the child, said, 'I'll tell you a story.'

"The child listened without enthusiasm, then said: —

"'Mother, you tell me what you have *read* about birds; but Miss Margaret tells me what she has really *seen* and knows about them.'

"The child went to the root of the matter, as children generally do. Want of sympathy or lack of preparation is quickly felt; they know truth from falsehood; they detect weakness in your eye before you open your mouth; you may compel outward attention, but, like the knights of old, they are clad in an invisible armor, which renders them proof against our attacks.

"We hear much about the *kind* of story we are to tell, and here the wise men differ. Let us study the child first — then the story. . . .

"While developing the imagination is desirable, too much of it is also to be avoided.

"Lead the child to see the beauty in commonplace things. A piece of coal, a bean, a drop of water, in the hands of a skilful teacher are as beautiful and mysterious as any myth or fairy tale.

"If our stories of nature do not bring the children close to nature, their object is lost. 'They do not so much need nature as she is taught, but nature as she speaks while we are silent.'

"Let it be to each child as it was to Hiawatha,

> "'He learned of every bird its language,
> Learned their names and all their secrets.'

"Stories are valuable as a means of discipline. There are no wrong inclinations or weak points that may not be reached by the story, if skilfully told.

"A little boy who had been blowing bubbles all the morning, tired of play, and suddenly growing serious, said: 'Read me that story about heaven, it's so gloriouth.'

"'I will,' said the mother; 'but first tell me, did you take the soap out of the water?"

"'O yeth, I 'm pretty thure I did.'

"The mother read the description of the beautiful city, the streets of gold, the gates of pearl; he listened with delight, but when she came to the words, 'No one can enter there who loveth or maketh a lie,' bounding up, he said, 'I gueth I 'll go and *thee* about that thoap.'"

Woman's Progress in Japan.

The emperor of Japan, Mitsu-Hitu, seems to be very much in earnest in doing all he can to place the women of his kingdom on the same level as the educated women of Christian nations. One of his late edicts, according to a recent report, declares that stained teeth and shaven eyebrows are ugly in his eyes, and ordains that Japanese women shall follow the custom of their European sisters in making their toilet.

The emperor was the first to celebrate a silver wedding in Japan, and the women of the island kingdom were delighted at this new honor shown them. He has also

honored his wife by giving her a place at his table, an innovation for which there has been no precedent in that country.

The Value of Factory Inspection.

The value of factory inspection, especially in the clothing trade, was proved most conclusively recently by the discoveries of an inspector in Brooklyn, N. Y. There is a section of the city where the workers in the clothing trade form a community by themselves. The public school teachers have to learn to converse almost in sign language with the children when they first enter the schools in this section; the mothers never learn our language, the fathers just enough to transact business.

The inspector found in this crowded community two cases of scarlet fever in a room with six workers, and containing one hundred and sixty-three pairs of trousers ready for delivery. The children had been ill in this room, their home, for two weeks, during which time doubtless scores of garments had been made and delivered to the contractors.

The health department took every precaution, after the factory inspector made the discovery, to prevent the spread of the disease.

These revelations will hasten the day when it will be a criminal offense to manufacture anything in the home that is to be sold in a general market. — *The Outlook.*

How to Keep the House Cool.

"How best to keep the house cool in summer is a grave problem," writes Mrs. S. T. Rorer in the July *Ladies' Home Journal.* "During the hot months the house is much more livable if artificial heat can be cut down to the minimum. Use the stove early in the morning to prepare certain foods that will keep well, and avoid the necessity of a big fire during the rest of the day. Bare floors are very much more pleasant in summer than straw matting, although the latter is preferable to carpets or rugs. Where one can command a water supply, the house is measurably cooled by reducing the temperature of the pavement and grounds around by copious sprinklings. A goodly stream of fresh air should be allowed to sweep through the entire house morning and evening. The hot air of midday will condense quickly on cold walls and cause mold or dampness; consequently it should not be allowed to enter any portion of the house. All the rooms in the house should be kept scrupulously clean and neat.

"If the outside temperature is not appreciably lower at night than during the day, it is almost impossible to keep sufficiently comfortable to obtain necessary rest. The sleeping-rooms may be cooled by placing in the center of each a tub two-thirds full of cool, or better, ice-water. This will absorb the heat of the room in a few hours, and will be found particularly helpful where there are children. If the heat continues during the night, the changing of the water will preserve an even temperature in the room. Air your cellars at night when it is possible, closing them at nine in the morning, and they will be cool and dry the entire summer. Exceptions to this rule are on windy days, as the rapid motion of the air does not allow condensation. Keep the cellar perfectly clean and fresh. Frequent coats of whitewash with plenty of lime are of the greatest value in summer."

A GLOW in the crimson clover,
A laugh in the bubbling spring;
The flower-decked sod is a gift from God.
There is joy in everything.
— *Grace F. Pennypacker.*

EDITORIAL.

A FRENCH AUTHORITY AGAINST MEAT-EATING.

THE *Literary Digest* recently published a translation from *Cosmos* of an article by Dr. Leon Meunier, which, while not endorsing vegetarianism, presents some of the most forcible arguments in favor of the non-use of flesh in such a straightforward manner that we take pleasure in making the following quotations from the translation, although we must take some exceptions to the positions taken: —

"Man can, like the herbivorous animals, find in the vegetable kingdom the principles necessary to his development. He can also, like the carnivora, obtain them exclusively from the animal kingdom. Claude Bernard . . . has shown that the animal cell makes hydrocarbons by using the albuminoids. The more recent works of physiologists and chemists have proved to us also that fat can have no other origin. The herbivora have a digestive passage adapted to their peculiar mode of nourishment; that of the carnivora is quite different. By his dental system as well as by the arrangement of his digestive apparatus, man holds a middle place between these two classes of animals. But his organization would adapt itself more readily to an exclusive vegetable diet than to exclusively nitrogenous food. He would find in milk alone all the elements necessary for his support. Nevertheless, to do any useful work on this diet alone, he would have to take it in too large quantity and introduce too much liquid into his digestive passages. With bread, milk, and cheese, or bread, milk, and eggs, he could get along, but, among other inconveniences of a uniform diet, he would soon lose appetite. Peas and beans, fruits and condiments, would introduce variety into this diet, and also enable him to render it more acceptable by changes in the mode of preparation. The observation of facts shows, as we have already said, that the vegetarian régime is possible, and compatible with health. Is this the same as saying that it would be the ideal diet? We do not think so.

"To furnish the necessary quantity of nitrogen, this diet obliges us to take very considerable quantities of food, which would uselessly fatigue the digestive passages. . . . Cantani, who practises in Italy in places where the diet is specially vegetarian, attributes chiefly to an alimentary origin the increased number of cases of diabetes that he has observed.

"In warm countries man seems to be able to get along on a diet almost strictly vegetarian; but as the temperature falls, and especially if he must do any considerable amount of work, he has recourse to meat; and if he goes without it, even in France, it is from necessity rather than from taste or for his health. Observation made in workshops on mechanics who eat meat, compared with those who live exclusively on vegetables, has shown that the former do a larger amount of useful work. It would appear, nevertheless, from some observations of Bonnejoy, that the chief effect of meat is to produce a certain stimulation, permitting of a sudden effort, . . . but that better-continued work, with more resisting force, can be obtained with different food. 'This has been remarked,' he says, 'in the case of carnivorous animals, the great cats, etc., being capable of powerful effort, but needing afterward the repose in which they are commonly seen. The sustained strength of the herbivorous animals, like the elephant and the ox, is quite a different thing.' . . .

"The experiment is easily made on the rabbit, for instance, which accepts cooked meat very readily. This animal, having become a carnivora, secretes acids quite rapidly, and will fall sick and die. To support him any length of time on a régime contrary to his nature, it is necessary to give him alkalies, particularly bicarbonate of soda. A

somewhat similar effect is to be noted in man when he is fed exclusively on meat. This régime, imprudently prescribed for diabetics, may occasion serious trouble, which even alkalies will not be sufficient to remedy.

"As soon as death occurs, the tissues begin to decompose, and even before the first signs of putrefaction appear, there are formed, at the expense of the albuminoids, very poisonous organic compounds, analogous to the poisons found in deadly mushrooms. . . .

"Roast of beef kept by the cook two or three days to make it more tender contains some of these dangerous poisons, and the finest fowls and the most delicious fish also are not exempt. But let us take courage. . . . Experience shows that poisoning from this cause is rarely observed; the ptomains, as Gautier and Selmi have named them, are partly destroyed by cooking, partly by digestion, and by the oxidations and various reactions that take place within by the tissues. Those that escape are eliminated with the excretion. . . .

"Here there are two arguments against a flesh diet; it tends to acidify the fluids of the body, and it introduces poisons into the organism.

"The tendency to acidification should be counteracted by adding to the diet a certain proportion of vegetables. . . . As to the poisons, they become dangerous only when the organs are working badly, particularly if the digestion is disturbed. . . .

"But . . . . the man who is in normal health can keep well and do a larger amount of work if he uses a mixed diet of animal and vegetable food.

"The proportion of the different elements will vary with climate, age, sex, and occupation. . . .

"To sum up, from the physiological point of view, man may be omnivorous, vegetarian, or carnivorous, according to climate and the necessities of the case. An exclusively animal diet is injurious; vegetables must form a large part of our food; but there must be some meat also. Exclusive vegetarianism is the regimen of invalids, and is very effective in certain diseases or morbid predispositions. Well persons can get along with it, but without great advantage."

While thanking the writer for the above, and for bringing forward well-known bacteriological facts which speak most emphatically for the injurious effects of flesh-eating, we must take a few exceptions to some of the statements made which do not accord with experimental evidence, and which, if accepted by the public, might detract to some degree from the practical influence of the facts stated. The following points we think particularly worthy of notice by way of protest, as some of the statments of M. Meunier do not agree with patent facts: —

1. The author states that man, "by his dental system, as well as by the arrangement of his digestive apparatus, holds a middle place between" the herbivora and the carnivora. No scientific zoologist will undertake to classify animals in this way. The relation of an animal's structure to his diet is determined, not by a comparison with those of unlike structure, but by a comparison with those of like structure. It is not correct philosophy to undertake to deduce conclusions respecting the proper dietary of man by comparing his digestive apparatus with that of the carnivora, which are evidently unlike him, nor with that of the herbivora, which are also unlike him, nor by a comparison with both of these simultaneously, but rather by a comparison with those animals which are most like him; namely, the gorilla and chimpanzee, the leading representatives of the anthropoid apes.

The dental system and other portions of the digestive apparatus of man are practically identical with that found in these animals. The teeth are the same in kind, number, and arrangement, the only difference being that the cuspids, or the so-called "canine teeth," are, in the apes, longer than the other teeth and separated from them by a little space on either side; while in man they are of the same length, and are placed in the jaw close to the other teeth, with no separating interval. The diet of the anthropoid apes is exclusively vegetable in origin, consisting of fruits and nuts, and soft grains.

If the fact that the length and complexity of the alimentary canal and the digestive apparatus in man are, in a certain sense, intermediate between the herbivora and the carnivora proves him to be semi-carnivorous, it proves the same of the ape. But actual observation shows us that this conclusion is erroneous; that the alimentary canal of the ape, as nature teaches us, is exactly adapted to a non-flesh diet, and not to a mixed diet. The so-called "canine teeth" of man would be entirely worthless in tearing flesh, for which these teeth, as well as the hetchel-like molars in the carnivora, are used. We might add, incidentally, that if the cuspids, or canine teeth, of man prove him to be semi-carnivorous, it would prove the same for the horse, which has canine, or bridle, teeth, and would show the stag and the camel, which also have canine teeth, to be carnivorous, at least in part. Evidently, this method of reasoning is entirely incorrect.

2. The objection is made that a diet of vegetable origin does not furnish a sufficient amount of nitrogen without requiring the use of an excessive quantity of food, so that the digestive organs are likely to be overburdened because of the bulkiness of the diet.

There is not the slightest foundation for this assertion, as the facts will show. One pound of peas or beans contains as much proteid or nitrogenous food-material as does a pound and a quarter to a pound and three quarters of beefsteak; in other words, a pound of peas or beans contains more beefsteak than a pound of beefsteak minus the poisonous ptomains which the beef contains, and, in addition, the other nutritious elements contained in the peas or beans, amounting in all to three times the total nutriment of a pound of beef. Hence, from this standpoint, it is apparent that the bulkiness is on the side of the meat diet rather than on the side of the vegetable diet, provided one should make his diet of such foods as peas, beans, and other legumes.

As regards the grains — wheat, corn, barley, rye, and oats — the proportion of the nitrogenous element is sufficient to satisfy the demands of the body for that element. The most recent observations upon this subject show that the nitrogenous element need not be present in a larger proportion than ten per cent. to amply supply the needs of the body with carbo-hydrates and hydrocarbons; in other words, the starches and sugars and fats are the food elements which chiefly supply the requirements of the body for heat and energy. These elements are taken into the body to be consumed; the proteid elements, however, are chiefly required to make good the wear and tear of the living tissues or the vital machinery; in other words, fats, starches, and sugars correspond to the coal which is consumed in the locomotive for the production of energy with which to pull the train, whereas the proteid substances correspond to the Babbitt metal for the cast-iron fire-grates, and for the bolts, nuts, screws, washers, and other bits of metal required for repairing the locomotive itself. If the vegetarian includes nuts in his regimen, he has an abundant supply of the choicest of all food-stuffs. Nuts, as a class, contain a much larger proportion of nutrient materials than other foods, and are equally digestible, if properly prepared. A pound of almonds, or of almost any other kind of nuts, contains much more nitrogen than a pound of beefsteak or any other meat. It thus appears that the objection offered to a vegetarian diet on the ground of bulkiness is based upon a superficial examination of this question, and has no real foundation in fact.

3. To say that a vegetarian regimen is not an ideal diet, is to say that the Creator did not know what was best for man when he created him, for as we are instructed in Gen. 1 : 29, "God said [unto them], 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 the fruit of a tree yielding seed; to you it shall be for meat."

4. Vegetarians as well as non-vegetarians may commit errors of diet. There are many vegetables entirely unfit for food, and there are comparatively wholesome vegetable substances, such as sugar, which when used in excess may give rise to disease, as in alimentary diabetes. No doubt diabetes is most frequently due to errors in diet, especially through the excessive use of sugar.

5. The amount of heat derived from meat is very considerably less than that derived from an equal quantity of vegetable fats. Nuts furnish all the nutritious, and all the heat-producing, elements to be found in meats, and in a more assimilable and wholesome form. In reading the history of Captain Hall's expedition to the polar regions many years ago, we were interested in noting the fact that while on his great sledge journey, which lead him to a point nearer the North Pole than any man had previously reached, he notes that, in eating his dinner one day, seated upon a block of ice, with a temperature far below zero, and the wind blowing at a hurricane rate, he ate a dinner consisting of graham crackers. Why not dried beef or blubber? Doubtless because his experience, contrary to his theory, had shown him that graham crackers contained more energy and strength to the pound than an equal quantity of meat.

6. We think it entirely a mistake to say that "there must be some meat also," and that "exclusive vegetarianism is the regimen of invalids." The experience of the larger portion of the human race shows most conclusively that meat is not necessary to the maintenance of the highest health. The Belgian peasant tastes meat only once or twice a year. Dr. Letheby tells us that the average Irishman eats less meat in a week than the average Englishman eats in a single day. The Scotch Highlanders rarely taste flesh of any sort. The two hundred million Hindus of India live almost wholly without flesh food. The forty millions of Japan are practical vegetarians. The countless millions of China likewise rarely taste flesh. Yet these nations are, when given an equal chance with those who habitually make use of flesh, found to be by no means inferior. The experience of Daniel and his companions, as recorded in Holy Writ, is an excellent illustration of the wholesome influence of a vegetarian diet. Of course it must be understood that a vegetarian diet does not mean a vegetable diet, but a diet made up of the choicest products of the vegetable kingdom.

WHY EAT THE SCAVENGER?

THE majority of people are aware of the fact that oysters, crabs, lobsters, and other shell-fish are more likely to cause sickness if eaten in the months of May, June, July, and August than at any other season of the year. For this reason many people avoid the use of these various products of the sea during those months in whose names the letter "r" is not found. It is not so generally known, however, why these shell-fish may not during these months be eaten with so great impunity as at other times of the year. An incident which recently occurred in Paris brings out the reason so clearly that we quote the following account sent by special cable dispatch and published in the papers a few days ago: —

"A family by the name of Blaise, consisting of five persons, was brought to death's door by eating a dish of crawfish, which must have been fresh, as they were alive when Mme. Blaise bought them. Dr. Charles Lucas attributed the posioning to animal alkaloids, which, when developed in living organisms, are called leucomains.

"While agreeing with this theory in principle, Dr. Albert Robin, one of the greatest medical authorities in Paris, says it is more than probable that the Blaise family was poisoned by crawfish which had fed on decayed matter.

"He gave to the *Herald* correspondent a terrifying list of the things that commonly make both fish and crustacea deadly to human life, even though cooked as soon as fished out of their native element."

A pertinent question which would naturally suggest itself in this connection to the minds of all intelligent people is this: If the oyster, the crab, and kindred creatures are scavengers, subsisting upon decaying matters of various sorts, are they fit for food at any season of the year? Professor Brieger and other investigators have shown that the liver

of the oyster always contains a poison which in any considerable quantity is very deadly; and recent investigations made in England and elsewhere have shown that this creature is frequently the medium of communicating typhoid fever, the germs of the disease having been found in its stomach and other passages several weeks after it had been inoculated with them. Not infrequently epidemics of typhoid fever have been directly traced to the use of oysters, which proved upon examination to contain these deadly germs.

Probably few persons would be willing to entertain for a moment the idea of eating a hyena or a turkey buzzard. The well-known scavenger habits of these creatures render the very thought of employing them as food loathsome and repulsive, and not a few people look upon the hog, also a natural scavenger, in the same light, and would suffer the pangs of hunger to a very considerable degree before consenting to taste swine's flesh in any form.

But probably the majority of people who swallow the juicy bivalve "alive and kicking," so to speak, are not aware that they are gulping down into their stomachs at one fell swoop millions upon millions of the most disgusting microbes known. The oyster, the crab, and similar creatures subsist exclusively upon the decaying substances found in the bottom of the sea, and the germ-swarming slime which covers the leaves and stems of submarine plants. Any one who has ever observed the oyster in his native haunts will have noticed him here and there with his shell open, and his capacious lips spread out over some slimy stone or embracing the slippery stem of some plant, busily engaged in wiping off the germs and minute organisms which are always to be found covering the sea bottom and the stems of plants growing beneath the surface. A drop of oyster-juice when examined under a microscope is found to contain millions of these squirming, living organisms.

The wonder is, not that people are now and then made sick by eating oysters, clams, lobsters, etc., but that every one who eats them is not thus affected. It is only because the healthy stomach has a wonderful capacity for destroying germs and decomposing food substances that fatal illness does not more frequently occur from the use of these scavengers of the sea.

How strange that intelligent men and women, who are capable of selecting the choicest tid-bits which nature provides, and who have spread out before them a wonderful assortment of the most delicate and toothsome fruits and grains and other pure products of the earth, — how passing strange it is, that man, with all his ability to discern between good and evil, and with instincts which should naturally lead him to live wholly upon the highest plane in dietetic matters, should cultivate a taste which permits him to swallow alive the gruesome and slime-covered creatures whose appointed work in the economy of nature is to clean the ocean floor! Why should man, the masterpiece of creation, condescend to make of himself a scavenger of scavengers?

HOW TO KEEP COOL.

In the first place, don't be in a hurry. On a hot day, be moderate. If you are going on a journey, long or short, be in time to reach the station without running so hard as to get out of breath, or walking so fast as to get into a violent perspiration. It is just as easy to take a hard cold, contract a chronic cough, catarrh, or pneumonia, in midsummer as in the coldest winter weather, and there is a particularly good chance to do so by sitting in the draft created by an open window in a rapidly moving train, after one's clothing has become saturated with perspiration. Violent exercise generates enormous quantities of heat in the human body; even in cold weather a person may raise his temperature three or four degrees by running half a mile; and of course in hot weather, when the surrounding atmosphere is at a temperature near that of the body, a smaller amount of

exercise may produce as great a rise of temperature as would much more vigorous exercise in cold weather.

Indeed, if one would be really cool and comfortable during the heated term, he must learn to be moderate in all things, not only in the exercise of mind and body, but in the matter of diet. It is the oxidation and burning of the food we eat that gives rise to all bodily heat. Thus when we cease to feel a rise of temperature necessary, we should diminish the fuel supply of our bodies.

By taking care to recognize this principle, a great share of the discomfort experienced by most people during hot weather may be avoided. If on rising in the morning it is apparent that the day is to be unusually hot, the breakfast should be exceedingly moderate; it may be sufficient perhaps to eat half the usual amount. We are not in danger of starving nor of becoming weak in consequence of this abstemiousness, for the reason that four fifths of the food we eat is used for fuel; consequently on a very hot day only enough food needs to be taken to maintain the stores of vital energy or to support muscular and mental work. A diet consisting of wheat bread and half a dozen ripe peaches, or a saucer of whortleberries, a dozen plums or a melon, with a few ripe apples, is a most excellent preparation for exposure to a scorching sun. Instead of the heaviness, the lethargy, the ennui, and general prostration which most people experience in intensely hot weather, one may feel almost his ordinary lightness and vigor by the observance of this simple rule in relation to eating. For dinner, a slightly more generous diet may be allowed; but meats of all kinds, fats, greasy dishes, and everything of a heating or indigestible nature should be avoided. Fruits and grains, with a moderate allowance of nuts, constitute the ideal diet for a hot day.

Instead of eating three meals a day, or even four, as is the custom with our English friends, two meals, with nothing between meals, will be found amply sufficient during the heated term. The first day or two one may suffer a little inconvenience from the change, but in a short time the great benefit derived from the adoption of this plan will be found an ample compensation for the little self-denial required.

Of course the great advantage of daily bathing in warm water must not be forgotten. The morning cool bath taken on rising is a first-class tonic to prepare one for the labor and exposure of a midsummer day. The evening bath of tepid or cool water, or even a short hot bath, if one is greatly fatigued, is useful not only as a measure of cleanliness, but as one of the most effective means of inducing restful sleep.

Any one who will try these suggestions will certainly be grateful for them, if he has never before experienced the marvelous benefit to be derived through these simple means.

Practical Results of Hygienic Instruction in Schools.— Professor Moseley, of Sandusky, Ohio, contributed, some time since, a very interesting paper to the *University Herald*, in which he gave the results of an inquiry conducted for the purpose of ascertaining to what extent school children are influenced in their habits by what they learn in the study of physiology.

It was found that a large proportion of the children were very materially influenced for good by the information thus obtained. Many of them had acquired a more erect carriage, and better posture in walking and in sitting. A large proportion had, from the instruction they received, formed the habit of cleansing the teeth. The young ladies had improved in relation to their dress; a majority had observed the rules in relation to ventilation; and nearly all had profited by instruction in relation to taking cold. A large majority had been fortified against the use of tobacco; two thirds had taken a stand against the use of tea and coffee; a considerable number had ceased to eat pork. All were opposed to patent medicines; several had given up the use of spices; and all had learned to exercise care in the selection of drinking-water.

ANSWERS TO CORRESPONDENTS.

DILATATION OF THE STOMACH.— A letter-carrier (F. W. R.) in Canada writes that he has been troubled with dyspepsia, with a dilated stomach, for about three years. He is living almost entirely on bread, meat, and eggs. He drinks nothing but water, and that not at meals. He asks: "1. Do you think it advisable to use a tube in washing out the stomach? Would it not increase the dilatation? 2. Can the stomach be restored to its normal position after having been dilated so long? 3. Will the digestion improve under any regimen while the stomach is dilated? 4. An outline for home treatment would be greatly appreciated, as I am not in a position to visit an institution for treatment."

Ans.— 1. Yes. Washing out the stomach with a stomach-tube does not increase the dilatation.

2. Dilatation of the stomach may be greatly lessened in nearly all cases, and in case of prolapse of the stomach the organ may be restored to nearly the proper position by means of abdominal massage, development of the abdominal muscles, and by wearing a proper abdominal supporter.

3. Yes. A proper regulation of the diet will in the majority of cases give the patient suffering from dilatation of the stomach almost complete relief from the disturbing symptoms.

4. An outline of treatment may be found in our little work, "The Stomach;"[1] it is too lengthy to give in this department further than we have suggested above. A diet of meat and eggs is generally very unwholesome in cases of dilatation of the stomach. The diet should consist of dry foods, and those which do not easily decompose or ferment. Tables of such foods will be found in the work referred to.

HOW TO COOK NUTTOSE.— WHEN TO TAKE HOT MILK.— C. S., of Illinois, writes: "1. How should nuttose be cooked to be most easily digested? 2. How can it be kept in hot weather, after having been opened? 3. If hot milk is taken at meal-time, should it be at the beginning, during, or at the end of the meal?"

Ans. — 1. It should be cut into small squares about half an inch thick and stewed like mutton or meat of any kind. Send for recipes to the Sanitas Food Co., Battle Creek, Mich.

2. It may be cut in thin slices and dried in an oven, when it has much the appearance and flavor of dried beef. It is very tasty and entirely wholesome; it may be kept in a refrigerator.

3. We seldom recommend milk for adults. Boiled milk is preferable to raw milk, but milk of any sort, except buttermilk, kumyss, or cottage cheese, is rather difficult of digestion, especially for adults. Milk, even when sweet, is apt to cause biliousness and various forms of headache.

HOW TO PURIFY WELL-WATER.— A correspondent in Oklahoma (H. L. C.) wishes to know how to purify well-water for the use of a small family.

Ans.—The best method of purification is filtration through a Pasteur filter, subsequent to boiling. Boiling alone will destroy any germs capable of producing deadly disease. If the water is clean and sweet, boiling will probably be sufficient.

DRY, WIRY HAIR — PEYER'S PATCHES IN TYPHOID FEVER — LARYNGEAL PARALYSIS.— E. K. S., of Michigan, asks: "1. What is the cause of the hair's becoming dry, harsh, and wiry? 2. What will cure it? 3. Are Peyer's patches always present in typhoid fever? 4. Is there any cure for laryngeal paralysis? 5. What treatment is indicated?"

Ans.— 1. The dryness is due to the fact that the sebaceous, or oil, glands of the scalp are not sufficiently active.

2. Shampooing the scalp with cold water every morning is an excellent remedy.

3. Peyer's patches are present in the small intestines of all persons. They become inflamed and sometimes ulcerate in cases of typhoid fever.

4. Sometimes, not always.

5. Removal of the cause, if possible, by the application of electricity.

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1 Modern Medicine Publishing Co., Battle Creek, Mich. Price, cloth binding, $1.50.

BLEEDING FROM THE THROAT. — A lady in Louisiana (Mrs. L. J. C.) writes: "I have been troubled for six months with bleeding from the throat. I always raise a small amount of bloody mucus in the morning, and sometimes through the day, when I cough, walk, or work hard. The trouble seems to be just below the larynx. The throat feels sore to the touch, but there is no pain in swallowing. What treatment would you recommend?"

Ans.— Your case is one requiring the attention of a skilled specialist in disorders of the throat. We cannot recommend any mode of treatment which would be certainly effective. A dry climate is preferable. We would recommend a visit to the Colorado Sanitarium, located at Boulder, Colo., where proper treatment can be received. It is more than probable that the climate where you are is unfavorable to recovery, if not the cause of your disease. A change should be made as soon as possible.

PAIN IN THE SIDE — PROFUSE PERSPIRATION — NUMBNESS. — Mrs R., of California, asks for an outline of treatment for the following symptoms: Pain in right side over the hip, caused by a strain about three years ago, pain gradually extending to the back and left side; disturbed sleep; heat and perspiration before rising in the morning; numbness in the ends of the fingers on the right hand in the morning; and profuse perspiration on slight exertion during the day.

Ans.— The case is very likely one of profound neurasthenia, or nervous exhaustion. The patient should visit a good sanitarium. The change of climate which would be afforded by a trip to the Rocky Mountains would doubtless be advantageous. We would suggest a stay of a few weeks at the Colorado Sanitarium, at Boulder, Colo.

IMPLANTING TEETH. — J. W. F., of Wyoming, writes: "Will you kindly tell me something about the operation of implanting teeth? 1. Can artificial teeth — as those made of gold — be successfully implanted? or is it only freshly drawn human teeth that can be used? 2. Are there many dentists who are capable of performing this operation?"

Ans.— 1. We know of no such practise as the implantation of artificial or gold teeth, but freshly drawn teeth are often successfully implanted.

2. There are doubtless many such dentists, but whether in your locality or not we do not know.

POISONOUS ICE-CREAM. — A subscriber in Illinois asks: 1. Why are people occasionally poisoned by eating ice-cream? 2. What precautions should be used in its manufacture? 3. Do you consider it injurious to use ices and cold drinks during warm weather? 4. In the June GOOD HEALTH you say it is not dangerous to swallow the seeds of grapes, but in other places you have advised the removal of the seeds from all small fruits. Please reconcile the statements. I knew a lady who died twenty-four hours after eating grapes, and the post-mortem showed that the seeds caused her death. 5. How near a meal, either before or after, should a sponge bath be taken? 6. Should the bath be taken immediately after a long run on the wheel, when the rider is warm and tired and wet with perspiration?

Ans. — 1. Chiefly on account of the tyrotoxicon often found in ice-cream. Tyrotoxicon is a deadly poison. It is also found in cheese.

2. We would recommend that, at the last stage of the process, the ice-cream be thoroughly boiled. This is the only precaution we know of which will obviate all danger.

3. It is one of the most harmful ways in which the stomach can be abused.

4. Fruits containing small seeds should be avoided in cases in which the stomach is in a state of acute inflammation; also in cases of inflammation of the bowels. The lady who died in twenty-four hours after eating grapes must have eaten a prodigious quantity, whereby an acute inflammation was set up, or else, what is more than probable, the disease from which she died was already at work before the grapes were eaten.

5. A bath at a temperature near that of the body may be taken either before or immediately after a meal without injury. A hot or cold bath should not be taken within an hour of the meal.

6. When exhausted after vigorous exercise, a hot bath should be taken. Cold baths are dangerous under such circumstances, in consequence of the inability of the system to react; but after a hot bath for a few minutes, a cold bath may be taken without injury.

LITERARY NOTICES.

ALMOST A WOMAN.— By Mrs. Mary Wood-Allen, M. D. The Wood-Allen Publishing Co., Ann Arbor, Mich. Price, 25 cents.

"Almost a Woman," a little pamphlet of forty-four pages, is a treasure-house of information for young girls and their mothers. Out of the fulness of her mother-heart Dr. Allen has written those facts which a girl needs to know to enable her to fill her proper place in the world's life, to be what God intended every girl should be — a pure, tender, good woman; and they are written in such a simple, dignified way that no girl, reading, can fail to be moved to higher levels of thought and purpose.

Mothers, too, will here find the material for sacred talks with their growing daughters. Surely the world must be made better when such things are told in the way Dr. Allen has chosen.

Outing for August furnishes its usual pleasing variety of outdoor sketches and beautiful illustrations. "Golfers in Action" and "Polo in Play" are two profusely illustrated articles furnishing careful instruction as to the manner of playing these games. "Unfolding Tents on the Rio Grande Del Norte" and "Coasting the Mediterranean Awheel" furnish most readable descriptions of most charming outing experiences. Address 239–241 Fifth Ave., New York.

THE *Northwestern Monthly* comes out in a new dress, and with a new name (formerly *Northwestern Journal of Education*), and with a most valuable table of contents. The July number is entirely devoted to "The Physical Child," with articles on "Games," "Physical Culture," "School Recess," "Defects in Body, Speech, Sight, and Hearing," articles on "Foods," "Stimulants," "Sleep," "Children's Clothing," "Children's Dress," "School Buildings, School Furniture," etc. The contributions are from about twenty leading physicians and child-study experts in this country. Every teacher and every parent should have this number. Price 25 cents. Regular subscription $1.50 per year. On sale at news-stands. J. H. Miller, publisher, Lincoln, Neb.

A PAPER of unusual strength and significance both on account of the author and the subject, is, "Strivings of the Negro People," by W. E. B. Du Bois, in the August *Atlantic Monthly*. The author, himself a negro and a recent graduate from Harvard University, makes a graphic statement of the disadvantages under which his race is struggling, and describes from his own personal experience "how it feels to be a problem." Houghton, Mifflin & Co., Boston and New York.

THE August number of *Scribner's* is marked by the beginning of what has been called the most original magazine idea for many years — "The Workers — An Experiment in Reality." In these fascinating papers Walter A. Wyckoff, a young university graduate and a student of social problems, will tell his actual experiences while earning his entire living for two years as an unskilled laborer. There is no professional philanthropy in this narrative. Mr. Wyckoff was met and received by the workingmen as one of themselves — for in every sense he was one — and he asked no odds of fate. For the first time the American workingman appears in literature as neither an economic unit nor a sensational problem, but a human being very much like other people. Chas. Scribner's Sons, New York.

PUBLISHERS' DEPARTMENT.

THE Battle Creek Sanitarium is enjoying, the present season, an unprecedented patronage. For the last few weeks patients have been pouring in from all parts of the United States, particularly from the South and West, and at the present time more than twelve hundred people gather daily under its hospitable roof — or rather its several roofs, for more than twenty-five buildings are occupied with the work of this great establishment. Among the guests at the present time in the institution are found lawyers, judges, senators and their friends, besides numerous other persons of distinction, all of whom are here seeking health and information.

DURING the hot spells of the present season, Michigan has been especially favored. While more than a hundred deaths from sunstroke, and ten times as many heat prostrations, have occurred in other portions of the country, scarcely any inconvenience has been experienced by the residents of the Peninsular State. The almost constant cooling breezes from Lake Huron, Lake Superior, and Lake Michigan are a protection for Michigan almost as complete as that enjoyed by an island in the sea. Michigan is getting to be everywhere known as the great Sanitarium State. The shores of its numerous little lakes are dotted with tents in the summer, on which not infrequently summer hotels are to be found, occupied by refugees from the hot regions of the surrounding States. There is probably no one State in the Union to which so large a number of persons resort from a distance for protection from the summer heat as Michigan.

THE great gymnasium of the Sanitarium, capable of seating twelve to fifteen hundred people, is daily filled with patients taking part in various health-giving exercises executed under the care of a skilled director. There is probably no place in the world where exercise scientifically employed is given a more prominent part in the treatment of disease than in the Battle Creek Sanitarium.

THE patients at the Battle Creek Sanitarium are greatly enjoying the immense swimming-bath connected with the bath-rooms of this institution. Competent instructors, both men and women, give daily training in the art of swimming. The methods employed render this art so simple and easy of acquirement that it is not an uncommon thing for a person who has never been accustomed to the water to become able to swim, without other assistance than that of a cork swimming-belt, at the very first lesson. There is no more healthful exercise than swimming to develop all the important groups of muscles in the body, and especially the lungs and muscles of the back. It is also a most excellent means of correcting such serious deformities as round shoulders, hollow chests, and prolapse of the abdominal viscera.

THE Battle Creek Sanitarium is coming to be as widely known as an educational institution along the lines of healthful living and sanitary reform as for its successful management of the sick. Among the thousands of people who visit this institution annually, there are probably few who do not feel upon leaving that they have received as much benefit from the information gained as from the treatments received.

JUST as this number of GOOD HEALTH goes to press, the publishers are sending out quite a large corps of trained men and women whose mission is to organize in the leading cities of Michigan and the surrounding States, Schools of Health in which instruction will be given in the principles of healthful living. These schools will be conducted in the most practical and interesting manner. Any community can have the advantage of this educational enterprise by simply organizing a Good Health Club of one hundred or more members. The purpose of this enterprise is not money-making, but the diffusion of scientific knowledge respecting the care of our bodies. It is a missionary enterprise in the interests of the gospel of health. Those desiring further information should address this office.

MORE than four hundred persons are in attendance at the Summer School of Hygiene now in session at the Battle Creek Sanitarium, and fully half of these have come to Battle Creek from the surrounding States. Quite a number have come a distance of several hundred miles to enjoy the privileges of this school. Four hours are spent in regular class work daily. Supplementary courses in nature study, kindergarten work, hydrotherapy, Christian Help work, missionary teaching, cookery, and other practical lines are just now being organized.

A CORRESPONDENCE SCHOOL OF HEALTH.— The great interest which has been manifested in our School of Health scheme has led us to undertake to organize, in addition to the Schools of Health, a Correspondence School of Health, in which instruction will be given by means of lessons especially

prepared and sent by mail to some proper officer chosen by the club or school which may wish to improve this opportunity for gaining information upon the vital questions of health. Further particulars with reference to this enterprise will be given next month.

THE EVANGELINE GOWN.

THE department of Healthful and Artistic Dress of the Battle Creek Sanitarium is continually devising new and pleasing costumes, one of which we present this month in the photographs opposite page 501. It is a summer gown, made of all-wool challi and trimmed with ribbon. This little gown is very simple and serviceable, yet it conforms enough to the prevailing mode to be worn anywhere. It would never be conspicuous, unless it might be for its easy, graceful fit.

A cloth model of this gown is furnished for $5. Catalogue free. Address the Battle Creek Sanitarium, Dress Department, Battle Creek, Mich.

WE are glad to hear that the Colorado Sanitarium is brimful of patients. Fortunately, there are a few cottages in the immediate neighborhood, the use of which can be obtained, so that there is yet room for a few more. There are thousands of persons whose lives might be saved by visiting the Colorado Sanitarium, which is the only place known to us where it is possible to obtain not only the the great advantages of a high altitude and a dry, sunny climate, but in addition, the care and treatment afforded by a thoroughly equipped sanitarium, with well-trained nurses and physicians. Those who are interested, either for themselves or their friends, should address the superintendent, Dr. W. H. Riley, Boulder, Colo., for further information.

To the cool mountain resorts of Colorado the Northwestern Line (Chicago & Northwestern Ry.) is the direct route, also to the wonderful Black Hills of South Dakota and other Western resorts. Tourist tickets at low rates. Up-to-date trains superbly equipped with through palace sleeping-cars, free reclining-chair cars and dining-cars. Apply to agents of connecting lines or address W. H. Guerin, M. P. A., 67 Woodward Ave., Detroit, Mich.; or W. B. Kniskern, G. P. & T. A., Chicago, Ill.

BETWEEN seed-time and harvest is a good opportunity to inquire about farming lands in South Dakota, only one day's ride from Chicago. Bountiful crops of wheat, corn, barley, and flax reward the tiller of the soil. As a stock and dairy country South Dakota leads all the world. First-class farm lands with near-by markets can now be bought for $10, $12, $15, and upwards, per acre, and this is the time to invest. For further particulars write to Geo. H. Heafford, General Passenger Agent, Chicago, Milwaukee & St. Paul Railway, Old Colony Building, Chicago, Ill.

CONSULT THY PURSE, and buy your tickets from Chicago via the Chicago, Milwaukee & St. Paul Railway to the following-named points on June 29 and 30, and July 1, 2, and 3. Look at the figures.

San Francisco	$25.00
Salt Lake City	20.00
Denver and Pueblo	12.50
Sioux City	9.75
Omaha and Council Bluffs	7.75
Kansas City	7.50

and other points in proportion. These are very cheap rates made for these special dates. Return tickets at approximately the same rates will be sold on various dates in July and August. For further information apply to the nearest coupon ticket agent or call on or address Harry Mercer, M. P. A., C., M. & St. P. Ry., Detroit, Mich.

THE Battle Creek Sanitarium Health Food Company report that in six days in July the orders for health foods received and filled aggregated more than thirty-two tons. The business of this company has developed with unparalleled rapidity during the last two or three years, and the present prospect is that the facilities provided for the manufacture of these foods, which at first seemed to be more than ample, will soon be entirely insufficient to meet the increasing demand for these healthful substitutes for unwholesome and dyspepsia-producing dishes which are everywhere making such havoc with the American stomach. The people are discovering that it does not pay for a man to ruin his digestion before he is thirty years of age, and then have to do penance all the rest of his life; that it is far better to recognize the laws of health relating to the function of digestion, and by so doing keep intact the ability to convert good food into pure blood, brains, bones, and muscles, with which every normal human being is by nature endowed.

A CORONER'S verdict reads thus: —

"The deceased came to his death by excessive drinking, producing apoplexy in the mind of the jury."

MR. H. G. BUTLER, the business manager of the Sanitarium Health Food Company, informs us that in less than a week he has shipped three carloads of Caramel-Cereal to the city of Chicago alone, and that, just as we are going to press, he has received information that the supply of this fragrant substitute for coffee is exhausted, and more is called for.

NOTWITHSTANDING the numerous imitations of Caramel-Cereal, the Battle Creek Sanitarium health substitute for coffee, the sale of the genuine article steadily increases. At the present time the factory devoted to the production of this article is turning out more than two and a half tons daily, and has hard work to keep up with its orders.

MICHIGAN IN SUMMER.— Northern Michigan has increased in popularity as a place for summering, not only on account of the climatic conditions, but because it provides such a variety of pleasures for such a variety of people. With the opportunities so great for the enjoyment of congenial society, the fishing, boating, bathing, the excellence of the hotels and clubs, the comforts of cottage life, there is no chance for monotony. The climate, owing to the proximity of the Great Lakes and the latitude, is nowhere equaled for the invigoration of tired and wornout humanity.

Send for illustrated descriptive matter giving information about the different points, lists of hotels, rates of fare and train service of the Grand Rapids & Indiana R'y, the line reaching all the resorts, the route of Northland Express, the fast vestibuled train, carrying through sleepers from St. Louis, Cincinnati, Louisville, Indianapolis, and Chicago to Petoskey and Mackinaw. Address C. L. Lockwood, G. P. and T. A., Grand Rapids, Mich.

"WELL," said the philanthropic Mrs. Jabus, "I must get to work. I've promised to make a dozen pies for the restaurant at the Hospital Fair."

"What's the object of the Fair?" asked Mr. Jabus, "to furnish patients for the hospital?"— *Harper's Bazar.*

SOUTH DAKOTA PAYS OFF ITS DEBTS.

Farmers Are Paying Off Mortgages at a Rapid Rate, and Times Are Better. — Sioux Falls, S. D., July 13. — [Special.] — "The people of South Dakota have, in the last four years, paid off $50,000,000 of their debts," said Dr. D. L. Mc Kinney, one of the best known loan agents of the State, "and they are now paying off at a very rapid rate. As things are now going, the people of the State, and especially the farmers, will soon be well out of debt. The large crops of the last few years, coupled with the close times, have had the effect of giving the people an appetite for getting out of debt, and fortunately has also given them the ability to do so."

Mark Russell, who represents a loan company which has several million dollars loaned on farm property in South Dakota, adds his testimony to that of Dr. Mc Kinney. Mr. Russell's company stands ready to and is anxious to place from $50,000 to $75,000 yearly on South Dakota farm property, but the agent complains that he cannot find takers for one third of the amount he would like to loan.

"Our company has 1,500 loans in this State on farm lands," said Mr. Russell, "and we have not had over fifty foreclosures in seven years. The company does not own a foot of land in the State, and never lost a cent on a loan." — *Chicago Tribune, July 14, 1897.*

TAKE A LAKE TOUR TO THE ISLAND OF COOL BREEZES.— Go to Mackinac Island, Mich., via the Coast Line. The D. & C. new steel passenger steamers leave Toledo, Mondays and Saturdays, 10 : 30 A. M., and Tuesdays and Thursdays, 4 : 30 P. M. From Detroit, Mondays and Saturdays, 11 : 00 P. M., Wednesdays and Fridays, 9 : 30 A. M. Send two cents for illustrated pamphlet. Address A. A. Shantz, G. P. A., Detroit, Mich.

Judge — "Did you not see the sign, young man, 'No wheeling allowed'?"

Young Man — "Yes, your honor; but our wheels have rubber tires and make no sound."— *Boston Courier.*

THAT portion of South Dakota which is traversed by the lines of the Chicago, Milwaukee & St. Paul Railway is the finest agricultural and stock-growing section of the Western country. For "Letters from Farmers," printed in pamphlet form, finely illustrated, and descriptions of farm lands, address Geo. H. Heafford, General Passenger Agent, Old Colony Building, Chicago, Ill. Now is the time to look for homes in South Dakota, where land is cheap and good.

AN English health officer recently received the following note from one of the residents of his district: —

"Dear Sir: I beg to tell you that my child, aged eight months, is suffering from an attack of measles as required by act of Parliament."

SPECIAL SANITARIUMS FOR THE TREATMENT OF DISORDERS OF THE STOMACH.

THE publication by Hayem and Winter of their classical work, "Du Chimisme Stomacal," in 1891, marked an important era in the progress of gastro-intestinal therapeutics toward a scientific basis. The work which had previously been done by Boaz, Ewald, Richet, Ufflemann, Bidder and Schmidt, Lehmann, and others, had thrown sufficient light upon the digestive processes to make clear to those familiar with the work of these investigators, the fact that a great store of most interesting and important knowledge was close at hand, awaiting only the discovery of a key whereby the doors of nature's storehouse of carefully guarded mysteries might be opened. The amount of information given by the methods developed by the investigators referred to, especially by the colorimetric methods of Ewald and Boaz, was just enough to tantalize the investigator with glimpses of the facts which might be learned, if only methods of sufficient accuracy and precision were at hand.

Hayem and Winter, sagaciously seizing upon a discovery made by Golding Bird, physician to Guy's Hospital, more than fifty years ago, the importance of which Bird himself scarcely appreciated, developed a method whereby the exact chemical technique employed in the assaying of ores and the examination of soils might be applied to the investigation of the processes of digestion. The one weak point in the method of Hayem and Winter is the impossibility of quantitatively estimating the fatty acids present; but this deficiency has been supplied by Toepfer, so that in the combination of the two methods we have a means whereby the digestive processes, so far as they relate to proteids, may be accurately studied.

The more recent recognition of the importance of gastric digestion in relation to the conversion of starch has led to the development of methods of precision for the study of starch digestion in the stomach, and has called attention to the importance of the study of the salivary secretion as regards both its quantity and quality. These studies have shown that the generalization made by Ewald — that the conversion of starch is always deficient in hyperpepsia, and active in hypopepsia and apepsia — is not borne out by laboratory facts. The same must be said, and still more emphatically, with reference to the assertion that the saliva is practically uniform in quality.

In the examination of the saliva in more than 1900 cases in which the salivary coefficient representing both quantity and quality has been determined, I find 915 cases which fall below the standard which I have provisionally established as normal; namely, the secretion of ten cubic centimeters of saliva in five minutes, each cubic centimeter of which is capable of completely converting one-tenth gram of starch in five minutes. In 568 cases the coefficient was found to be above the normal, the average of those above being 2.07, and the average of those below .59. In several cases I have found the salivary coefficient zero, the fluid formed being apparently incapable of converting starch. These observations have convinced me that those conditions of the general system which give rise to an apeptic condition of the stomach through failure of its glandular functions may also affect the salivary glands.

The refutation of Pasteur's surmise that microbes are a necessary agent to the digestive process, which was unfortunately accepted by physiologists as an established fact, and the complete demonstration that animal life is absolutely independent of microbial life by the ingenious experiments of Nuttall and Thierfelder, together with the more recent demonstration that the gastric digestion of a sterile test-meal of bread and water is unaccompanied by the development of bacterial life, or at least that the stomach contents are found sterile at the end of the first hour of digestion in healthy persons, has created a new interest in the study of the bacteriology of the stomach, and has rendered the bacteriological examination of stomach fluids a matter of even greater importance, if possible, than the chemical examination.

By the aid of the various methods of investigation now available for the study of normal and abnormal digestion, it is possible to obtain accurate information upon each of the following particulars in relation to a given stomach fluid: —

1. **The Total Acidity,** in which is represented not only the free hydrochloric acid of the gastric juice, but acidity due to loosely combined chlorin, various organic acids of the fatty series; as lactic, acetic, and butyric acids, and acid salts.

2. **The Total Amount of Chlorin Separated by the Glandular and Catalytic Processes of the Stomach.** This is found by subtraction of the fixed chlorin or chlorin combined with bases from the total chlorin, and furnishes a basis for classification of a given stomach fluid in relation to the quantity of chlorin made ready by the stomach to enter into the digestive process.

3. **The Amount of Free Hydrochloric Acid Present,** — an important determination, since free

hydrochloric acid is sometimes present in excess, even in cases of hypopepsia, through failure in some step of the various chemical processes of digestion.

4. **The Amount of Combined Chlorin;** that is, chlorin which has actually entered into the processes of digestion in the formation of acid albumin, or which has been neutralized by a combination with ammoniacal compounds developed in the stomach by the bacterial fermentation of proteids or by abnormal chemism.

5. **The Amount of Acid Combined Chlorin** which practically represents the useful work done by the stomach in the digestion of proteids.

6. **The Amount of Neutral Combined Chlorin,** representing the difference between acid and the total combined chlorin, and consisting of useless and perhaps poisonous products resulting from the destructive action of bacteria upon proteid foods.

7. **The Amount of Organic or Fatty Acids** — lactic, butyric, formic, and acetic — which result from the action of yeast and other micro-organisms capable of giving rise to acid fermentation in the stomach.

8. **The Percentage Amount of Maltose** or completely digested starch, also the quantity of soluble starch and dextrin representing the partially digested starch.

9. **The Presence in Proper Quantity, or the Absence or Deficiency of Pepsins and Other Ferments or Enzyms.**

10. **The Presence in Normal Quantity, or Absence or Deficiency of Starch-digesting Ferments in the Saliva.**

11. **The Presence or Absence of Bacteria** or micro-organisms in the stomach fluid, and their number per cubic centimeter.

12. **The Physical Characteristics of the Micro-organisms Present,** whether yeast, mold, bacteria, or parasites.

13. **The Character of the Dominant Micro-organisms Present,** whether acid-forming, gas-forming, milk-coagulating, or gelatin-liquefying, and whether pathogenic or nonpathogenic.

14. **The Presence or Absence of Mucus, Pus, Blood,** or other morbid elements in the stomach fluid.

15. **The Exact Capacity of the Stomach.**

16. **The Exact Amount of Residual Fluid** remaining in the stomach at the end of the first hour of digestion, — the best means of determining the condition of the stomach as regards motility.

17. **The Position of the Stomach** and other digestive organs, — whether normal or prolapsed, and to what extent, their size, etc.

Coefficients of Digestive Activity. — The exact mathematical data thus obtained render possible the determination of a series of highly important coefficients whereby the physician is able to judge at a glance of the percentage degree to which any phase of the digestive process may be in divergence from the normal condition. Each of the following coefficients has been worked out by the writer excepting one coefficient, *a*, which has been modified from a similar coefficient first determined by Hayem and Winter.

(1) **Proteid Digestion** (*a*). — This coefficient shows the relation existing between the acid combined chlorin and the total combined chlorin. A low percentage indicates a small amount of normal digestive activity, with the formation of a large amount of non-usable and toxic chloro-organic compounds, the result of morbid chemism and the bacterial fermentation of proteids, a condition found present in the majority of cases of nervous dyspepsia, migraine, and other forms of chronic toxemia.

(2) **Starch** (*b*). — (1) The relation of the amount of perfectly digested starch or maltose to the dextrin and soluble starch, or imperfectly digested starch; (2) the relation of the amount of maltose or completely digested starch to the normal amount.

(3) **Salivary Activity** (*c*). — The degree of salivary activity, as shown by a single expression representing both the quantity of the saliva formed in a given time, and the digestive activity of the same.

(4) **The relation of the amount of HCl separated to the total cholorin** (fixed, free, and combined) found in the stomach fluid (*m*).

(5) **The relation of HCl separated to the amount normally separated** (*n*).

(6) **Fermentation** (*x*), as shown by the number of bacteria and the quantity of fatty acids and other products of fermentation present.

(7) **Solution** (*y*), as shown by comparison of the undigested residue with the total amount of stomach fluid.

(8) **Motility** (*z*), based upon the careful measurement of the residual fluid contained in the stomach at the end of the first hour of digestion. This is measured by an exact method described in another paper by the writer, published some months ago.

(9) **Capacity** (*k*), determined by the comparison of the height of the individual in millimeters with the capacity of the stomach in cubic centimeters. The normal stomach is one cubic centimeter of capacity for each millimeter of the individual height.

By means of such an examination as this it is possible to make a complete and exact classification

of stomach fluids or cases. The study of the results of more than eight thousand examinations, relating to over six thousand individual cases, has resulted in the reference of all cases of functional derangement of the chemical processes of the stomach to one of four general classes, as follows : —

Hyperpepsia, in which there is an excessive separation of HCl.

Hypopepsia, in which there is a deficient separation of HCl.

Apepsia, in which there is a total absence of digestive work.

Simple Dyspepsia, in which the quantity of work done is normal, the failure being in quality only.

In hyperpepsia there are three subclasses ; in hypopepsia, two subclasses. These subclasses are again divided into secondary subdivisions and types, making, with their several subdivisions and types, and with apepsia and the subclasses of simple dyspepsia, twenty-five distinct classes of disordered stomach chemism.

The following table shows, in addition to the normal quantities, the quantities found in a typical case of hyperpepsia and one of hypopepsia : —

	Hypopepsia. Case No....		Hyperpepsia. Case No....		Normal quantities.	
Total acidity (A)	.060	grms.	.408	grms.	.180 –.200	grms.
Calculated acidity (A')	.094	"	.400	"	.180 –.200	"
Total chlorin (T)	.224	"	.472	"	.300 –.330	"
Free HCl (H)	.000	"	.136	"	.025 –.050	"
Total combined chlorin (C)	.094	"	.264	"	.155 –.180	"
Acid combined chlorin	.018	"	.188	"	.0155–.1080	"
Neutral combined chlorin	.076	"	.076	"	.1395–.180	"
Fixed chlorids (F)	.130	"	.072	"	.100 –.110	"
Maltose	7.296	"	1.488	"	2.500	
Dextrin and soluble starch	3.984	"	.952	"	.500	
Fatty acids (from fermentation)	.042	"	0		0	
Number of germs per cubic centimeter	30.000		0		0	
COEFFICIENTS.						
Gastric proteids (*a*)	.19		.71		1.00	
Digestion, starch (*b* [1])	.80		.68		1.00	
(*b* [2])	3.64		.74			
Salivary activity (*c*)	1.00		1.40		1.00	
Fermentation (*x*)	8		0		0	
Solution (*y*)	1.12		1.27		1.00	
(*z*)	.42		.29		1.00	
Relation of HCl set free to total chlorin (*m*)	.63		1.27		1.00	
Relation of HCl set free (H–C) to normal (*n*)	.50		2.10		1.00	

for a person of the same height. The patient is carefully weighed, and his strength-weight, height-weight, and respiratory-weight coefficients are determined, as these all have an important bearing upon his dietary.

The above data afford accurate information upon which to base a prescription for diet, regimen, and treatment. Instead of being obliged to guess as to whether his patient requires acids or alkalies, pepsin or diastase, some special form of proteids or predigested starch, and whether he needs lavage, stomach massage, a dry diet, a liquid diet, a fruit diet, a kumyss diet, or some other special dietary, the physician is able, by the accurate methods above described, immediately to determine exactly what his patient needs, and to prescribe for him such diet and treatment as will enable him to say to the patient with assurance that his morbid symptoms will speedily disappear, and that not merely temporarily, as the result of the use of palliatives, but permanently, through the employment of measures which will remove the cause of his disorder.

This method of dealing with the function al disorders of digestion presents advantages which must be instantly recognized. It is exact ; it is thoroughgoing ; it renders curable all cases of functional disorders of digestion, no matter how chronic, provided the patient will submit himself to the proper conditions for the required length of time.

This new rational method, however, has the disadvantage of being expensive, in that it requires the patient to give himself wholly up to the treat-

In addition to the above examinations relating to the stomach itself, careful examination must be made as regards the condition of the blood, the amount of hemoglobin present, the number of corpuscles per cubic millimeter, and the color index or coefficient. Each group of muscles must be tested by the aid of a suitable dynamometer, and the strength of each group compared with the normal standard

ment of his disorder, complying strictly with the rules laid down for him ; and in that it demands elaborate laboratory facilities and the co-operation of thoroughly trained experts in chemical and bacteriological research, as well as skilled assistants to administer the necessary treatment.

The following facilities are especially required for the successful treatment of digestive disorders by the method briefly outlined above : —

A Well-equipped Chemical Laboratory.— The laboratory must not only be supplied with the apparatus required for elaborate and accurate work, but also with chemists trained in the nicest details of quantitative chemical manipulations.

A few test-tubes and color reagents will not suffice for the sort of investigation contemplated above. No methods except the most precise and accurate known to chemical science are of any considerable value in this kind of investigation.

A Complete Bacteriological Laboratory.— A few flasks, test-tubes, and culture media are not sufficient. The bacteriologist and his assistants must be thoroughly trained in their work, and must be supplied with every facility needed for most elaborate research. The mere counting of the aerobic or anaerobic germs found in a given stomach fluid is a very simple process, but the investigation of the character of these germs when grown in different media is a much more subtle and difficult process; yet this very study is one of great importance, for it furnishes an explanation of many of the so-called idiosyncrasies of patients in relation to particular articles of food, it being found that certain patients are incapable of taking particular foods for the reason that their stomachs are infected with microbes of a particular class, which find in the objectionable article of food a special medium for development.

A Diet Kitchen under competent scientific direction must be prepared to furnish everything and anything required by every possible phase of indigestion. After a test-meal and an investigation of the same by the method outlined in this article, it is a simple matter to determine what articles of food should be avoided in a given case, and what foods will be best adapted to the conditions present ; but without special assistance the patient will, in a majority of cases, find himself wholly incapable of carrying out the prescription made. A well-trained cook is quite as necessary as a scientific physician in the treatment of stomach disorders.

Well-trained Nurses of both sexes, who are capable of deftly replacing the prolapsed stomach, bowels, and other abdominal viscera, and who know how, by manipulation, to empty a dilated stomach of its stagnating contents and to administer lavage or a test-meal successfully to a nervous and timid patient. Bouchard's investigations agree with my own statistics in showing that in by far the great majority of cases of persons suffering from indigestion the motility of the stomach is diminished. I have found many a chronic sufferer from indigestion able to begin digesting wholesome food without difficulty almost at once by the aid of massage of the stomach applied in such a manner as to re-enforce the action of the weakened muscular structures.

Electrical Appliances for external and internal use, both galvanic and sinusoidal, whereby the abdominal muscles may be strengthened to support the prolapsed viscera, and the inactive glands and weakened muscles of the stomach stimulated to their normal activity. I have not infrequently seen a dilated stomach markedly diminish in size under the influence of the application of the sinusoidal current through a stomach electrode. Static electricity is also valuable as a means of relieving the paresthesias of various sorts which frequently afflict gastric neurasthenics to such a degree as to render their lives miserable, and keep them in constant dread of impending paralysis or some other grave disorder.

Scientific Appliances for Hydrotherapy — not simply old-fashioned water-cure methods, but facilities whereby thermic applications by the aid of water, the Turkish and the electric-light baths, and other means may be employed with the same scientific precision with which powerful drugs are used. The empirical application of water in the treatment of gastric disorders has not infrequently done a vast deal of harm. The use of exhausting hot baths, deluging the stomach with hot water, excessive cold bathing in depressed rheumatic or hyperesthetic cases, and similar errors have done much to bring hydrotherapy into disrepute in this country. Nevertheless, there is no single measure in rational therapeutics of greater value than thermic applications by water and other means, when intelligently directed. The writer knows of no means by which the chronic dyspeptic whose system is flooded with toxic substances generated in the alimentary canal can be so quickly relieved as by a moderate use of the electric-light bath followed by the carefully graduated cool shower, or rain douche ; and certainly there is no tonic in the whole materia medica which can compare with the judicious application of cold water by the Scotch douche, either general or local.

A Well-equipped Gymnasium, with thoroughly trained directors, in which patients may take exercise as called for by prescriptions based upon exact knowledge of vital conditions and of the strength of

individual groups of muscles, Exercise, like water, is an agent which is potent for both good and evil. To be of value in connection with the treatment of the disorders of digestion, it is necessary that the physician should know whether his patient is suffering from hyperpepsia or from hypopepsia, since in the first case exercise must be suspended for a certain length of time after eating, so that the secretion of the hydrochloric acid shall not be stimulated ; while in hypopepsia gentle and appropriate exercise immediately following the meal is in the highest degree conducive to improvement, through the stimulation of the gastric glands to increased activity, and through the increased motility of the stomach from the augmented action of the diaphragm and the abdominal muscles in breathing.

Manual and Mechanical Swedish Movements. —These important measures, long so highly valued in Europe, but comparatively little known in this country, must be employed by the aid of skilled attendants who have been specially trained, and who well understand the potency of the measures which they administer. The Ling system of medical gymnastics has borne the test of experience for more than three quarters of a century, and is unquestionably the most scientific system yet devised. When I visited Stockholm, about fourteen years ago, for the purpose of becoming familiar with this system, I found many large institutions devoted exclusively to it, some of them being under government patronage and management. This system adapts itself to the most varied conditions, from the feeblest bedridden patient to the most robust man. It is well adapted to the treatment of chronic indigestion, since it affords perhaps the most effective of all known means of combating intestinal inactivity and encouraging both glandular and motor activity of the stomach.

Cheerful Surroundings and Other Conditions. —It is scarcely necessary to mention that this class of invalids, above all others, require cheerful surroundings and mental and moral conditions calculated to dispel the depression which is a characteristic feature of this class of disorders.

The above advantages, although not easily accessible, necessarily somewhat expensive, and not often obtainable at home, nevertheless offer the advantage of being almost absolutely certain to effect a cure, at least if the full co-operation of the patient can be secured for the necessary length of time.

The writer's practical experience during more than twenty years in the treatment of digestive disorders by the aid of the methods outlined, which have been gradually developed to their present state of completeness, has convinced him that there are indeed very few cases of functional disorder of the stomach which cannot be practically cured. It is not an uncommon thing to see a poor, emaciated dyspeptic, who has not enjoyed a moment's peace for years, made comfortable and happy in less than a week. Improved nutrition secured by proper adaptation of food to the condition of the stomach not infrequently results in a gain of flesh at the rate of half a pound a day for several weeks, and a gain of one pound per diem for a week or two has several times been observed.

A very great advantage which has been noted is the fact that patients under this exact and rational method are rarely discontented. The treatment employed deeply impresses them as being rational and thoroughgoing, and hence commands their confidence and respect. The patient feels assured that an accurate diagnosis of his case has been made, and that his prescription is based upon facts, not surmises, and accordingly he willingly adopts whatever bill of fare is arranged for him, and follows it with implicit confidence, believing that good results will be attained ; and rarely is he disappointed in his hopes. The rapid disappearance of troublesome symptoms, the gradual increase in flesh and energy, show him that he is on the right track, and his entire co-operation is secured ; his mind is at rest ; he ceases to worry about his case ; and thus a rational mind-cure is found in the assurance which the patient feels that his feet are placed upon solid ground, and that he is marching steadily toward the goal of health.

Within the last five years, between six and seven thousand cases of disorders of digestion have been successfully treated at the Battle Creek Sanitarium alone, and several thousand more by the same method at its various branch institutions. The special feature claimed for this method is that it undertakes to employ systematically all the measures for the diagnosis and treatment of disorders of digestion which modern science has made known to the profession.

These branch institutions are located as follows : Chicago Sanitarium for the treatment of disorders of the stomach, 28 College Place ; Colorado Sanitarium, Boulder, Colo.; St. Helena Sanitarium, St. Helena, Cal. ; Nebraska Sanitarium, Lincoln, Neb.; Guadalajara Sanitarium, Guadalajara, Mexico ; Institut Sanitaire, Basel, Switzerland; Claremont Sanitarium, Cape Town, South Africa ; Honolulu Sanitarium, Hawaiian Islands ; Portland Sanitarium, Portland, Ore.

It is proper to add that neither the writer nor any other person has any pecuniary interest whatever in either the Battle Creek Sanitarium or any of its

MAORI MAIDENS OF THE PRESENT DAY DRESSED IN THE OLD-TIME ROYAL ROBES OF SACRED FEATHERS.

branches. All these institutions are incorporated upon a charitable basis, and are held and conducted by boards of trustees in the interest of public charity and rational medicine.

Special Hospitals and Sanitariums for the Treatment of Disorders of the Stomach are Demanded. — It is evident that the large expense required for facilities and assistants in the treatment of disorders of digestion by modern rational methods necessitates the equipment of special institutions for the management of this class of disorders.

It is not, of course, to be supposed that every person suffering from some slight digestive disturbance requires the aid of the elaborate methods and facilities for investigation and treatment which have been outlined in this paper. All that the majority of such patients require is a little greater moderation in quantity, more time devoted to mastication, the avoidance of rich, indigestible, and unwholesome articles of food,— in short, the exercise of a little of the same sort of good sense used in feeding himself which a man employs in treating his horse or his dog, or which a lady uses in supplying the dietetic wants of a pet canary.

But there is a vast multitude of chronic dyspeptics whose stomachs are the "hold of every unclean and hateful" germ, and who are going about with dilated stomachs and prolapsed stomach and bowels in which the food substances taken for the purpose of nourishing the body are undergoing fermentation and putrefaction, deluging the body with ptomains which give rise to nervous exhaustion, neuralgia, mental depression, and other disorders, disturbing every function and contaminating every tissue, and thus giving rise to degenerations, such as Bright's disease and other allied maladies ; depreciating the vital resistance of the body, and thereby preparing the way for pulmonary tuberculosis and other infectious diseases ; and establishing various cachexias and diatheses, the origin of which is generally attributed to almost every cause but the right one. These chronic dyspeptics — often business or professional men — find themselves hampered in their work, and able to continue their business or calling only by the constant goading of an indomitable will, — a state of things wholly the result of the disordered condition of a single organ which, in most cases, may in a few weeks, or months at most, by rational treatment be restored to such a degree of soundness as will enable the individual, by the pursuit of a proper regimen, to enjoy excellent health and engage actively in the duties of life.

These persons require treatment in a well-equipped sanitarium in which they can find relief from ordinary cares and duties, and where they can have the benefit of every facility and appliance and all the skill and knowledge afforded by modern scientific medicine. It is only by the aid of such an opportunity that the majority of chronic dyspeptics can hope for recovery. In the opinion of the writer, the time will certainly come when every leading city, and, in time, doubtless, even small towns and cities, will be provided with one or more physiological laboratories for the investigation of the disorders of digestion and other maladies requiring similar methods of research, and also with well-equipped institutions for the application of physiological methods of treatment which effect a cure, not simply of the man's malady, but of the man himself ; which relieve the patient of his disturbing symptoms, not by palliating or neutralizing them, but by placing the man himself upon a higher vital level by reconstructing his diseased tissues and reorganizing his disordered functions through the augmentation of his energies by the aid of natural and physiological methods.

The Battle Creek (Mich.) Sanitarium has been the first to recognize this fact, having maintained a special department for the investigation and treatment of digestive disorders for many years. The management of this institution have organized branch institutions in various parts of this country, in Europe, South Africa, and Australia, especially designed for the treatment of that large class of patients suffering from functional disorders of digestion, who, having worn out the whole category of stomach tonics and artificial digestive agents, until, to use the phrase of an eminent English physician, "their stomachs have become pauperized," require the benefit of just such radical and thoroughgoing measures as are possible only by the aid of the methods here outlined.

During the twenty-one years of my Sanitarium experience I have devoted myself assiduously to the development of this idea; and after a score of years spent in pioneer work along this line, I am encouraged to see the great interest which is being taken by the profession everywhere in physiological measures of treatment, or what are now sometimes termed "sanitarium methods." The employment of these methods need not, it is true, be confined exclusively to sanitariums, but it must be apparent that it is only by the aggregation of the numerous appliances required under one management that they can be properly unified so as to secure the best results ; and it must be also manifest that it is only in such an institution that attendants and assistants can receive the training requisite for expert work. The matter of economy is also a conspicuous factor, since it is evidently im-

possible for every physician to maintain at his own cost, for the benefit of a comparatively limited number of patients, the expensive plant required for the carrying out of a thoroughgoing system of rational treatment.

The sanitarium idea is abroad in the land, and is bound to grow apace. Intelligent physicians who appreciate the advantage of complete control of the patient's conditions and the application of thoroughgoing methods will associate themselves together for the accomplishment of ends which a community of interests demands; and as the result of such associations and the local institutions which will develop from them, it is safe to predict that a multitude of sufferers will receive an infinite amount of benefit. By the aid of such means, it is certainly to be hoped that our grand republic may sometime be rescued from the unenviable reputation of having for its citizens a nation of dyspeptics.

J. H. K.