GOOD HEALTH

A Journal of Hygiene.

VOL. XXXIII. JULY, 1898. NO. 7.

HOW TO GET WELL QUICKLY.

BY J. H. KELLOGG, M. D.

THOROUGH resolve is the first requisite to speedy recovery from illness. A great many sick people and invalids are not seriously in earnest about getting well. Some are not very sick — just comfortably so. Altogether too many have "enjoyed poor health for years." It is very difficult to cure an individual who "enjoys" poor health; there is no strong incentive to which the physician can appeal. An illustration in point which came under the writer's personal observation is the story of a man who came into the physician's office and said, "Doctor, I wish you would examine me and tell me just what is the matter. Don't be afraid to tell me just how bad off I am, for I can stand it. I am prepared for anything, and I want you to tell me all about it."

After a thorough examination the physician said, "You have nervous dyspepsia, gastric neurasthenia, and paresthesia of the lumbar ganglia of the sympathetic nerves."

"Is that all?" the man exclaimed.

"Oh, no," was the answer, "of course you have other troubles, — your skin is inactive, and your nutrition is bad; you are not in as good flesh as you ought to be."

"Is that all?" he said again.

"No. You have a very inactive liver, your pulse is slow, and your heart is weak. You are evidently growing old faster than you ought to."

"Is that all?"

"Well," said the physician, "there are other things that might be mentioned, but these are the principal features of your case."

"Doctor," said the man excitedly, "I don't think you understand my case."

"Why not?"

"Because I have every reason to believe my condition is hopeless, but you don't make it out to be very bad. Do you think you can cure me?"

"Yes, I think we can cure you; in fact, I have no doubt about it."

"What! do you think you can cure *me?*"

"Certainly I do."

His countenance fell more than ever.

"Doctor," said he, "you don't understand my case, or you would never have said that. I am satisfied that my condition is hopeless, and I have been thinking that it would be a good thing to invest my property in a Home for Incurables — a home where I can live, and have several other incurables like myself to live with me; but you say I am curable, and that upsets my plans. I thought it would be rather a nice thing to have a home for incurables and to gather in other hopeless cases so that we could all be as happy as possible together while we did live."

The man was so discouraged over his prospect for recovery that the physician began to think he had made a wrong diagnosis. He asked his patient to come in

again in a day or two. The latter went away with a very long face and an air of great dejection. A few days later he returned. This time the physician told him his case was very dubious. His eyes began to sparkle, and he asked anxiously, "And do you think now that you can cure me?" The physician considered it very unlikely. His face grew brighter yet, and a smile appeared. When the doctor acknowledged that his case was probably hopeless, he was actually joyous, and laughed outright.

"Doctor," said he, "did you ever see a case as bad as mine before?" The doctor admitted that he never saw just such a case before.

"Well," he added, "I thought you didn't understand my condition the other day, but you didn't take time enough to look into it; I am glad that you have at last considered it thoroughly, and I think that you understand it now."

This man was truly incurable, because he made a hobby of being a hard case; he wished to be considered the hardest case in the world. There are a great many people like him, people who are delighted to be considered peculiar cases, who take pleasure in attracting attention, and who have a morbid desire for sympathy.

The writer had under his care one of these "interesting" patients, a woman who intended to get worse instead of better; one of those people who are determined to have a visit from the physician every day. This woman considered it her duty to have a fresh nosegay of symptoms every morning. She was finally persuaded to get out of bed, and she soon began to walk three or four miles a day. One day I remarked to her that I was glad that she was able to walk so far, and that she certainly was getting well. Said she, "Is that so! I am sure I am feeling bad." The next morning she was completely paralyzed; she couldn't turn over in bed. After that time, for thirty days, she made one revolution a day, like the earth; the nurse rolled her over on one side in the morning and on the other side at night. She also stopped eating; she would not eat unless she was fed by the nurse. She did not intend to get well.

Another very interesting lady patient came to me looking rather thin and pale, and having great black circles under her eyes, that made them look sunken and miserable. She soon began to gain in flesh, and it was not long before she was the picture of health, with the exception of her eyes, which still wore the black rings. She complained of sleeplessness and its effect upon her appearance. One day as she came into the office, a suspicion flashed into my mind, and I asked her to permit me to examine her eyes. While pretending to do so, I dropped something into one of them that made it smart. "Oh!" said she, "what did you do to my eye?" I then dipped a cloth into water and scoured the eye until the black circle disappeared. I was cruel enough, however, to let her leave the office with the other circle untouched. After that, it was interesting to note how gradually that circle faded out,—like a gradual recovery. It was found out afterward that this lady had produced these circles by painting her eyes every morning with indigo. I have met several such cases, in which persons have purposely made themselves look haggard and sick.

In order to get well quickly, it is absolutely necessary that one should wish to get well, should wish it with all his heart, more than anything else in life. He must go to work in the same way, and with the same earnest ambition, as if he desired to become rich. There are really very few people who can not get well. The majority of those who are pro-

DAVOS-PLATZ, SWITZERLAND. See page 457.

nounced incurable could become perfectly well if they would keep at their task in a genuine businesslike manner.

But sick people do not usually undertake the work of getting well in that way; they go about it in a desultory, half-hearted fashion. They are not willing to persevere until they are entirely cured. It is a common experience to hear a man say, "Doctor, I have come here to get well I want you to examine me and see what is the matter, and then I want you to tell me just what to do, and I will do it,—if it is to eat sawdust pills; I don't care how long it takes, I will stay here till I get well, if it means six months or a year." Perhaps two weeks later one is met by the following: "Doctor, I am getting well so fast that I think I can go home now. My business is so urgent that I feel as if I ought to be there attending to it. If you will kindly give me a few directions, I will buy a book, a battery, and some health foods, and continue the treatment at home." Two weeks before he was willing to sacrifice six months or a year of time and to eat sawdust pills; now he must go home at once to attend to his business. When a man sees the open grave yawning before him, and feels that he is about to step off into the abyss, he is ready to do and to sacrifice anything to be snatched back from the contemplation of that awful picture. But the moment he has been started in the right direction, and before he has traveled ten steps, no longer having the dreadful sight before him, he is like the ostrich that hides its head in the sand and does not appreciate the fact that its enemies are close behind it. Now, because he is not looking into the grave, though he is still but a few steps from it, he is satisfied, and forgets entirely that he is still dangerously near the black precipice.

Getting well is something like mountain climbing. Very few can make their way alone. Some have to be pushed, others have to be pulled, while no small number have to be carried in chairs. Suppose a man who was being carried up in a chair should say to himself, "I am getting along so nicely that I think I can go the rest of the way alone," and should then jump out of the chair. He would almost inevitably go to the bottom. Suppose the man who was being pushed and pulled up the mountain should think he could climb the rest of the way alone and should dispense with his guide; he would soon find himself short of breath and helpless. That is just the situation of the sick man who is going up the mountain of health. After he has climbed a short distance, he thinks he is making such good progress that he can lay aside all his helps and go on to the top alone. He is the most mistaken man in the world.

Getting well is also like getting out of a well that is a hundred feet deep. You hear a man calling for help, and you send a bucket down after him. He climbs into the bucket, and you turn the windlass round and round. You hear it creaking, you look down into the well and call to the man, and you hear his voice in the darkness; you know that he is nearing the top because his voice sounds a little louder each time he calls. By and by you see his form in the bucket. Now suppose that man, when he looked up and saw the light shining at the top and heard you talking to him and cheering him, should say: "Now I am coming up so fast, I will climb out of this bucket and get up the rest of the way without help. I can do it just as well as not." He would simply go to the bottom of the well again.

One who has been sick for a long time and expects to get well must do works of supererogation, so to speak; he must do some things that an ordinary man does

not have to do ; he must be extraordinarily good, and it is only by continuing in this course that he can ever hope to atone for his evil deeds. Whether the doctrine of supererogation is good theology or not, it certainly applies to physiology ; the man who has been neglectful and careless in his habits of life, and, as the result, has fallen into a sick and infirm condition, can get well only by doing works of supererogation healthward.

A certain woman who kept a restaurant once met a physician who had a large practise in the same town.

"Good afternoon, partner," she said.

"Partner ! how is that ? " he exclaimed.

"Why," she rejoined, "did n't you know that you and I play right into each other's hands ? You take people that have worn out their stomachs eating doughnuts, oyster stews, deviled crabs, etc., until they can not eat such things any more, and you fix up their stomachs ; and just so soon as they get them fixed up enough so that they can eat some of these things once more, they come to my place and I give them a good square meal, and that cripples their stomachs again ; then they go back to you, and you doctor them up again ; and then they come down to me, and I upset them again ; and so we are playing into each other's hands all the time."

Now that was a very sagacious woman ; she had learned that this physician was useful to her ; she saw that persons could not eat her foods very long without having recourse to him. Restaurants and hotels could do but a sorry business if it were not for the doctors who patch up their patrons.

The man who has been sick and wishes to get well fast must not yield to the appetites that have laid him low,— appetites for things that are unnatural,— cigars, mince pies, mustard, pepper, tea, coffee. People become addicted to unwholesome foods and drinks to such a degree that they are actually in distress without them. But who ever heard of a man's becoming such a slave to an appetite for some natural food — bread, for instance — that he could not possibly make a meal without it ?

Injurious habits of other kinds often stand in the way of quick recovery. Here is a lady who has been conforming to fashion by wearing improper dress, until her stomach, liver, and kidneys are out of place ; her side aches, her back aches, and she has pains and neuralgias of all sorts. This poor woman is told that she must conform to the rules of health in relation to dress.

"O ! " she exclaims, "how can I ? The doctors say that I must do this, but what will society say ? I must conform to the usages of society."

In this way health is sacrificed for the cigar, for the cup of tea, for what the world will say. One young lady, on being expostulated with in regard to wearing a dress which did not admit of proper breathing, and being shown at the same time how to take a good deep breath, asked, "Is that the way I should breathe if I wore a healthful dress ? " She was told it was. "O ! then I 'll never breathe in that way in the world." "Why not ? " "Because," said she, "all the girls would laugh at me, and say, 'She breathes just like a man.'" She was bound to breathe in the old way if it killed her ; she was going to be fashionable, she said, and she would breathe in that way if she died doing it. Thousands of women have died just because they had no chance to breathe.

If you desire to get well, you must resolve that you will do everything necessary to that end ; that there is no sacrifice of your accustomed ways or appetites too great to be made for the sake of health. In getting well quickly, there is nothing like determination and will.

One must not yield to disease. There are many people who lie down and allow the demon of disease to come and plant his foot upon their necks and trample them into the dust; they seem to make no resistance. But there is tremendous power in resistance. Almost the only people who are practically incurable are those who do not care to get well; who do not care enough for health to set their eyes toward it with the conviction that it is a necessity and that they must have it. Many a woman whose case seemed utterly hopeless has recovered just because she was determined that nothing should stand in her way.

It is not time alone, but perseverance in treatment, that works the rapid recovery. Suppose a man who has gone to a mining region, struck a rich vein of gold, and is digging out his thousands of dollars in gold-bearing dust every day, begins to think of his wife and children at home, and becomes homesick. Does he stop work and go home?—No; he perseveres, comforting himself with the idea that he is going to be rich, and that he can then furnish his family with every comfort, send his boys to college, and take a trip to Europe. He fixes his mind upon the good time coming. Now, the man who is working in the mine of health, and has struck the right vein, finds health pouring into his body every day; every morning, when he wakes up, he feels a little richer. Does he say, "Doctor, I want to give up working in this lode; I am getting well so fast that I can take a book and a battery and go home, and get well just as quickly as if I stayed here"?—No; if he is a sensible man, he will stay in his mine of health until his fortune is really established, until he can carry away with him his wealth of health.

When a physician tells you that it will take six months to cure you, he does not mean that the six months' time will cure you—it might bury you or make you incurable; he means that it will take all the forces and scientific efforts that can be brought to bear upon your case during six months of treatment, so that at the end of that time you may be, not merely recovered from certain symptoms, but really well.

The chronic invalid is like a man who has fallen into the water; you throw out a grappling-iron and get hold of him and begin to pull him up. You pull and pull until his head is within six inches of the surface. He feels no better and is just as helpless as before, because the water is still above his head. When he has come up so that the water is only half an inch above his head, he still feels just as bad as ever; he can not get any more air than he could while he was at the bottom. You pull again, and the next moment out comes his head. But he is not yet safe. Perhaps he exclaims: "Oh! isn't this glorious; to breathe the air once more and to see the sun shine! I am not struggling now, and I feel as well as I ever did, so I guess I will let go of the rope and go alone." He lets go of the rope, and sinks down into the water again.

A great many invalids conduct themselves in this way. But the man with his head just out of the water is in the most imminent danger,—it requires only a little ruffling of the surface, a sudden wave, to submerge him once more. Every time he has an extra task, a family jar, a little disappointment, a complication in his business, he is likely to go under again.

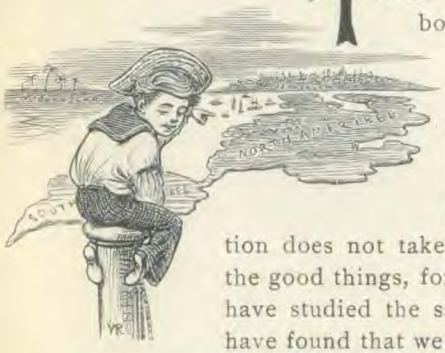
It is necessary to have more than the head out of water; the drowning man must be carried to the shore; and if he is addicted in any way to falling into rivers, he must get away from the water,—miles away if possible. Help him to reach some hill or mountain-top where he can

look out over a beautiful landscape and have plenty of fresh air, where he can receive encouragement and attention, and be kept away from his besetting temptation.

To get well quickly the sick man, the convalescent, the chronic invalid, must make a business of getting well. Think health, work for health, do everything you do for health's sake, and health will come.

THE CHILD.—PART I.

BY COLONEL FRANCIS W. PARKER



THE child is a born savage. Do not be startled at this statement. Civilization does not take along all the good things, for since we have studied the savage, we have found that we can learn much from him. The child is like the savage because he loves what the savage loves. There never was a boy on earth but either wanted to, or did, dig a cave in the earth, and from that vantage-ground defy the whole world. Boys love bows and arrows and tents; they love to roam the woods and the fields. The charm of centuries, in the way of a book, has been a description of savage life—"Robinson Crusoe."

The boy is like a savage in another sense, and a higher one. Just as soon as the sun's light paints its colors in the child's soul, and sound and touch begin to create ideas, with them the little child creates a world, in which it lives, and moves, and has its being. God has given the child the power to project itself beyond the material life into the spiritual, through the power of fancy. If the little child were limited to the meager stock of material ideas, it would be in a dark prison-house, but it bursts these bonds, and reaches out into a life

beyond. This is the myth period to the child.

What was the myth to the savage when the early man opened his eyes to this beautiful world? He had fears and wants. He needed protection. He looked around him, and all the objects in this world were, to him, alive; they had souls like himself. The stone said to him: "What am I?" and the savage bowed in adoration and said: "Thou art god," and he worshiped the stone. And then the tree said: "What am I?" and the savage bowed again in worship, and said: "Thou art god," and he adored the tree. And then from Mother Earth,— mother! that word is a reminiscence of that time,— from Mother Earth to Father Sky the soul of the savage climbed, to the stars, the twinkling stars, the delight of the child. The stars asked him the same question, and he answered, "Ye are gods," and he worshiped the stars. And then the moon, the ever-changing moon, asked the same question, and received the same answer; and at last the sun, the great god of day, made its demand upon the savage, and the answer came, "Thou art god," and the pagans worshiped the sun for ages. Still there was something beyond. The Aztecs, when Cortez Christianized Mexico with the sword, were asking: "Is there not something beyond the sun? The sun rises and sets; is there not a power invisible, that causes the sun to rise and set?" Thus man has been led up by feeling, not by precept, not by preaching, but by a deep instinct, the deepest in man, to find God; step by step he has taken his way onward, and still on, and that path we call the myth — suspicions of the truth, shadows of reality. And so it is with the child.

I know the objections you make: "Tell the child the truth," you say, "nothing but the truth." My dear friends, who knows the truth? Very often we give children things that we call the truth, which are false. When I was a boy, I studied the geography of Peter Parley. Perhaps some of you older ones have seen that geography. Peter did not believe in myths; in common with the Puritan Fathers, he believed that fairy tales should be abolished, so he made a geography. On the first page was the sentence, "The world is round and like a ball." That was about the only true thing in the book, and that is not absolutely true, for the world is not quite round. He made maps,— blue, red, yellow, green maps. I remember Africa: it was divided up into political divisions. Ethiopia was in the center; — it was red. It had a capital; I learned to bound Ethiopia, and to name its capital. For this probably I got a hundred per cent. I thought that it was the truth. Peter, Peter, let me tell thee, Peter, that thou didst try in thy heart to give the children the truth, but the fact is, Peter, there is probably no such country on earth as Ethiopia, and never was; but if there was, it was not in Africa — that is the country of tropical forests and pigmies. And besides, Peter, there is probably not a mile of political boundary known inside of the coast line of Africa to-day. Thou didst try to give the children the truth, and thou didst give them a lie. I say this to thee, Peter, because the good people of this country are now spending millions for just such work, and thousands are teaching that which is utterly false, thinking it is truth.

The myth is the truth to the child. It is the way the child understands the truth. Take, for instance, the myth of Santa Claus. I can imagine a mother telling her child there is no such being as Santa Claus, that the story is false; and I can see the sadness in the child's face. There is such a being as Santa Claus.

We can not make the tiny child understand how there is an All-giver, by whom this whole universe vibrates, quivers, throbs with love, One all-loving, who gives his universe and all that is in it to his children. Few of us who are older can comprehend that, but the child can understand how on the day when God gave his greatest gift to man, there comes a being who loves the child, and who is to give him some present to delight his soul. That is a step.

Those who would banish myths are to my mind materialists. They do not believe anything unless they see it, touch it, and taste it. Real truth is invisible. Man is a truth-seeker. The truth is there, not here. It is something ahead of us, something to find. The presumption of truth stops a man's thinking.

The myth is a movement toward the truth. I sometimes think that the uselessness of American life is owing to the lack of myths. Our young people are eager for sensations, for balls and parties and festivals of all kinds. They have not a deep well spring of life within themselves, a love of the beautiful, of goodness, of meditation. Give the children the myth.

The child is a born naturalist. There never was a child on earth who did not worship flowers. You may take a bunch of flowers in your hand into the darkest corners of the city, and the little street boys will follow you eagerly, saying, "Mister, mister, give me a flower, give me a flower," and they mean it; they love flowers. One day while attending to my duties as superintendent of schools of Boston, I was passing through the slums of Boston (for they have a little slum there), and happening to look up a dark alley, I saw a little child seated upon a doorstep, her face begrimed with dirt, her little form clad in scanty, ragged clothing; but the child smiled, and the smile affected me. It was a smile different from all others,—what I call a divine smile, like a bit of heaven shining through the body. I have seen it on the faces of many little children, and I have seen it on the faces of some men and women who have given their lives to humanity. So I trudged up the alley to see why that child could smile. When I got close to her, I saw that she held in her hand a clover blossom.

Do not tell me that the child is born in sin, that it is totally depraved. It is born in neglect, not depravity. Total depravity is man's mean, sneaking excuse for not helping his brother. That child had the love of the beautiful in its soul, awaiting development.

Let me tell you about a boy whom I once knew, whom I know now very well. He was just a common sort of boy; you meet him every day on the street. When he was eight years old, he was bound out on a farm in New Hampshire, a rough, stony, New England farm. The moment he arrived upon the farm he began to study,—study; I mean the word. I have been a teacher for many years, and if I could get the children to study in school as that boy studied on the farm, I would thank God and take courage. What did he study? Everything upon the farm. He studied geography; he knew all the hills, the valleys, the swamps, the brooks, the woods, and fields. He studied geography, but he did not know it until he had taught school for twenty years. He learned, also, the Peter Parley geography, and taught it; but all at once it dawned upon him, through the study of Karl Ritter, that he had begun the study of geography when he was on the farm. He studied geology and mineralogy. You could tell it by the calluses on his hands, acquired in the practical study of mineralogy, in building stone walls.

He studied botany: all the grasses upon

the farm,— clover, witch grass, red top, all the kinds of grasses. He knew how they grew, how they ripened, how they were cut and cured in the barn, and fed to the cattle. He knew the weeds,— ragweed, pigweed, smartweed, all the kinds of weeds, and these he learned by practical application,— by pulling them. He studied and knew the flowers, from the hollyhock in the yard to the lilacs by the fence; the golden-rod in the fields, and

the sweetest flower that ever bloomed on earth, close by the snow drifts in the spring, opening its sweet eyes as a harbinger of the resurrection,— the trailing arbutus, the Mayflower. He studied the trees: he knew the maple, with its sweet burden of spring, the hemlock, the pine, up which he used to climb for fifty or sixty feet, hunting for crows' nests, and then wonder how he should ever get down. Yes, he studied botany. There was no time to study botany in school; there were spelling and grammar and arithmetic — all those spiritual studies that arouse the imagination, that inspire energy and the desire for a better life, so that there was no time to study God manifest in the universe. He never studied botany in school, but the botany he learned upon the farm went with him, and has gone with him all through his life.

The boy studied zoology: the grasshoppers, locusts, butterflies; he knew the bugs that scurried away when he lifted a stone. The birds he knew: the robins, the wrens, the blue jays, the wise crow, the brave and timid partridge that defended her young,— all the birds he knew and loved. In fact, he studied all animal life, wild and tame, upon the farm.

Then he studied meteorology. He did not know the term, but he studied the subject. He could tell you when it was noon by two monitors, the position of the sun, and the feeling in his stomach. He could tell when a shower was coming by the way the wind blew; and when the great clouds piled up in haying time,

there was the hurry-scurry of getting in the dry grass. Storms come from the east in New England. The wind blew from the ocean for days, and was welcomed by the little boy. He loved the rain, and in the morning when the drops beat in rhythm upon the roof just above his head, he could touch the rafters and feel the music. He thanked God for the rain. Why, do you suppose, did he love the rain? What did it mean to the boy? Fishing! Fishing! He took a lesson in botany by cutting an alder pole, and another in zoology digging worms, and then away he went to the river, the beautiful, quiet river, and all day long he spent in solitude, splashing over fords, fishing by quiet pools, sitting upon the pebbly bank in the woods. The boy thought he loved fishing, but it was not fishing that he loved, it was the quiet solitude of the river. The lessons of wood and stream penetrated that boy's soul. In after years, when he doubted his early faith, when the very existence of God seemed to be in question, there came a vision of a river with its flood, its quiet pools, the beautiful woods beside it, and the river shouted and sang in his soul, "There is a God, and he loves thee" Nature teaches the quiet lessons that reach the soul. The deepest lessons come not from preaching, nor from the study of books, but straight from the throne of God. These touch the child's soul. Nature is a great teacher.

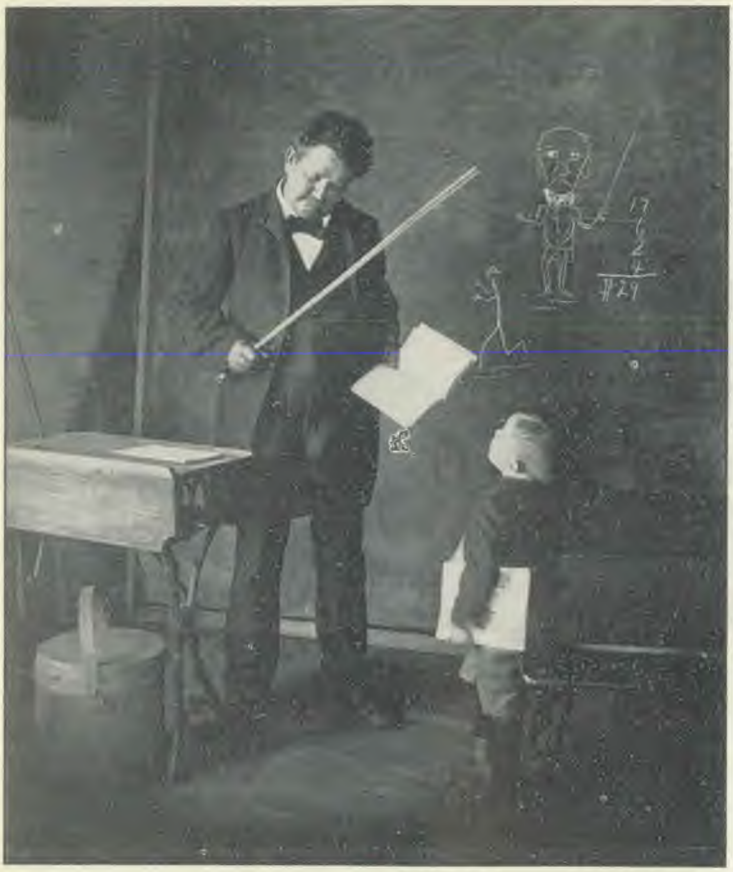
The boy upon the farm studied everything in science that is studied in any university. He studied the elements of subjects, and studied them in unity. There was no separation of one subject from another. But the boy had a great desire to go to school. In the souls of New England children of that day there rang, deep and strong, "Get knowledge; knowledge is power: get knowledge." The boy could not go to school in the summer: his services in riding the horse to plow and in other directions were too valuable; but in winter, with his tin pail half filled with frozen dinner, he plowed through the deep snow to the old schoolhouse at the cross roads.

Old schoolhouse! There never was such a well-ventilated house on earth. The wind and the rain came through the roof, the air came through the clapboards, the floor, and the great, high fireplace, which reached almost to the ceiling. The boys cut the green wood in the yard, brought in the logs, put them on the fire-dogs, spread out their hands, and fancied they were warm. Great, long benches, cut and carved by the boys, were the forerunners of manual training. Old schoolhouse! There never was palace or castle that could beat it; none in all this world so grand as this, where were planted the seeds of a great nation.

The boy went to school; what met him there? Oh, if some one *had* met him! If some one had met him at the door of that schoolhouse and said, "How dost thou do, my dear boy? I am glad to see thee: thou bringest to me riches from the old farm. Thou hast learned much of nature; thou hast acquired much by work. Come in, my boy, and I will help thee. We will use all thou hast learned. We will go back to the old farm and study it, and find more treasures. Then we will go to other farms and study them, the geography, and botany, and zoology; and then, after a while, on the wings of imagination, we will fly to the utmost parts of the earth, and study the whole world. Come in, my boy, I am glad to see thee: we will work together." Oh, if such a being had met him!

There *was* a Being at the door of that schoolhouse,— I say, a Being,— and what he thought of that boy was the embodiment, the incarnation, of the old idea of children. He did not say these words,

but this is what he thought: "Come in, come in, you little villain, you miserable boy! Your animal spirits show that you are wicked. Come in: I will train you; I know how to teach you. You see this stick? If you don't mind me, I shall use that on you. Come in, and sit down, and study." And the boy crept into the schoolhouse, and sat down on one of the hard benches, and tried to do the work of the school.



The boy was a born artist. Every child is. He wanted to do something. He felt the need of doing something that called for his best and highest effort. That Being knew nothing about him or his nature. He never asked a question about children. He simply followed tradition and precedent. So the boy worked out his sums in arithmetic, and filled his slate full; but he wanted to do something more. He wanted to draw, and he did draw. He turned over his slate and drew the most prominent object in the schoolroom — that Being. That Being wore a blue swallow-tailed coat with brass buttons. The boy spent a delightful half-hour in his work. Did you ever see children all attention? There is a false kind of attention, forced and hypocritical, which means conformity to the desire of the teacher,— an outward conformity, with no inward impulse. The boy wanted to draw, and he observed his teacher with great closeness; then he drew again, and observed, and drew and observed, until the picture was nearly finished,—he was just drawing the last button upon the coat tails, when that Being drew near, and he drew something, and the boy drew no more.

I believe, with all my heart, that the best things, the purest things, the sweetest things in children are crushed out by the ignorance of parents and teachers. Let me tell you one more story about this boy. He went upon the farm in the winter, when the snow covered the ground. The snow seemed to him glorious. Just

out of the attic window where he slept was an apple orchard. The snow covered the ground, the trees were dead — no, not dead, but sleeping. He used to gaze out of his window, when chance brought him to his sleeping-room, and he wondered, as boys wonder. As he watched the snow, the sun came forth. It melted and ran away in rivulets. Then, later, came the shining bark on the trees. That is life, he thought: there is no death, all is resurrection and life. Then came the tiny green buds, and then the pink and white buds, and then, and then the great ocean of apple blossoms, beautiful! The boy wondered, and began to prophesy. Truth had touched his soul, and looking forward to the by and by, he thought: "These apple blossoms will change to fruit." It seemed so grand and beautiful to him that he must write it out, he must tell his story. So he got some paper and an old lead-pencil, and sat down and spent a delightful hour in writing out what he felt. He told the story of the snow and the sleeping trees, the shining bark, the green buds, the pink and white buds, then the ocean of blossoms; then he told of the fruit, and concluded how good God is to give his children such gifts. All aglow with his work, he felt that somebody must read it, must feel what he felt. And down-stairs he went with his first composition. The lady with whom he lived was a good woman, but she had taught school six weeks. The boy handed her the paper, then looked up into her eyes for a smile. You know how children long for the smile of sympathy. But the smile did not come; it was a frown, and she handed the paper back to the boy and said: "If I could n't write better than that, I would n't write at all." The boy crept up-stairs again and threw himself, weeping, upon his bed. His first attempt had failed. The boy went through school, academy, college, and never wrote but one composition, he dreaded it so — and that, another boy wrote for him. I repeat, the best things in childhood are crushed out by the ignorance of teachers and parents.

MAN'S NATURAL DIET.

BY J. H. KELLOGG, M. D.

(Concluded.)

Energy Stored by Plants and Used by Animals. — The fundamental difference between a plant and an animal is that the former has the ability, under the influence of light and the vital principle of organization, to store up energy by bringing together the inorganic elements of water, earth, and air into new combinations known as organized substances, such as starch, fat, sugar, albumen, and cellulose, or wood; these substances — the product of vegetable growth — are magazines of energy. Under proper conditions, they may be made to combine with oxygen in producing heat, which may, in turn, by the production of steam or otherwise, be converted into mechanical energy, and utilized to perform work, as in the pulling of a train, the running of a factory, the propelling of a steamship.

Animals differ from vegetables in that they are unable to store energy by combining the original elements into organic forms. They must take the stores of energy which have been collected by plants, and through the aid of digestion and assimilation transform them into similar substances, which are in turn converted into heat and energy in the human body. It is interesting to note that

nearly all the energy utilized in the world in human industries, in the heating of homes, hotels, hospitals, is derived from the vegetable kingdom. This is the original source of our enormous coal beds and deposits of coal oil, as well as of other fuel of various kinds. The sunlight which shone ages ago, storing up energy in trees and other plants, to be preserved in coal deposits, we now see shining forth again in our oil and gas lamps and electric lights.

Food substances sustain the very same relation to the human body that fuel does to the locomotive. They are the source of all the heat and energy manifested by it. In this respect the animal body differs from other machines only in the delicacy of its mechanism and in the more intricate series of processes by which the store of energy is utilized. The human body is the most economical of all known means of utilizing stored energy. The best engine is able to make use of only one sixth of the energy stored in coal, the remainder being lost as heat; whereas the human body uses one fifth of the energy found in food substances, consuming but four fifths as heat.

When fuel is consumed in a locomotive as the result of combustion, there are produced two classes of wastes; viz., gas products, which escape through the smoke-stack in the form of smoke, and solid wastes, which fall through the grate in the shape of ashes. So, likewise, in the human body, as the result of the combustion or oxidation of food which is constantly taking place, there are produced gaseous poisons which escape through the lungs and skin, corresponding to the smoke of the locomotive, and solid poisons, which, dissolved in water, escape through the excretory organs.

From the foregoing considerations, it must be apparent that animal substances are not properly foods, but mechanisms for consuming foods; for one animal to eat another animal in order to maintain life is exactly analogous to the consuming of one engine or force-utilizing machine by another. An engine might be constructed partly of combustible material, so that when burned, energy would be derived from it as well as from the fuel contained in it; but such fuel would evidently be of the most expensive kind, and at the same time of the very poorest quality, since it would contain more or less incombustible and other material which had already been burned. When an animal makes use of another animal as food, it subjects itself to all these inconveniences. Flesh food contains, in common with vegetable foods, some non-usable material, but it especially contains quantities of poisonous substances resulting from force-expending processes, such as brain and nerve activity, muscle activity, heart and glandular activity. In fact, every vital process results in the production of poisonous or excretory substances.

In vegetable food products we have a pure source of stored energies. In animal bodies we have only vegetables at second hand in process of oxidation or deterioration, going down the scale of organization, combined with poisonous substances which have resulted from the various forms of vital animal activity.

Plants build up; animals tear down. In the flesh of even a healthy animal is always present a large or small amount of broken-down products which are on their way out of the body as excretions naturally removed by the kidneys, the liver, the skin, and other organs. It is impossible, under the most favorable conditions, to eat flesh without taking these poisons along with it, unless, indeed, the flesh is first carefully washed.

Beef Tea a Solution of Poisons.— By long washing, the waste matter which the flesh contains may be removed, leaving

behind a tough, elastic substance, consisting of the tissue which was really alive before the death of the animal. Live tissue is not soluble in water. It is the waste matter resulting from tissue work that is soluble. The food material which is introduced into the body is stored up in the muscles, the liver, and other parts, in insoluble forms. If it were not for this, it would be unsafe for an animal to enter the water, as it would dissolve like a lump of sugar. Beef tea is simply a solution of the wastes and poisons left in the flesh after the death of an animal.

Cell Life after Death.— When an animal is killed by cutting its throat or sending a bullet through its brain, it does not instantly entirely die. It loses consciousness, its heart ceases to beat, its individual or somatic life ends, but its tissues still continue to live — for several hours in the case of warm-blooded animals, for even days in the case of cold-blooded animals like the snake and the turtle. During the time which elapses between death, so called, and the actual death of the cells and tissues of the body, the activity of the living animal consumes the soluble food material which is in contact with these cells and tissues, at the same time continuing to produce the waste substances which during life are rapidly removed from the body through the kidneys, lungs, and other excretory organs. The rate at which these substances are produced during life is so great that death ensues within a few minutes when the avenues through which they escape are closed, as when respiration is interrupted by submergence in water or constriction of the throat, death in these cases occurring not by the simple absence of air, but by the accumulation of poisonous matter within the body, which destroys the activity of the living cells. It is by the accumulation of these poisons after death that the tissues are finally killed. During life the tissues are continually washed by a stream of pure blood, which not only bathes them, but distributes nutriment, and at the same time gathers up the waste substances and carries them to the liver for distribution to the kidneys, lungs, and skin for elimination. When the heart ceases to beat, this cleansing process ceases, and the poisons which are ever forming at a rapid rate accumulate until the vital fluids are so saturated that every living structure is killed. The arteries continue to contract after death until all the blood which they contain is forced on into the tissues and still farther on into the veins, so that the flesh of a dead animal contains nothing but venous blood and poisonous juices, in addition to the organized juices which have not yet been broken down.

Beef tea has long been recognized as a stimulant. As such, it has been introduced into the British army as a substitute for whisky and other stimulating liquors. Its stimulative properties, however, are wholly due to the tissue poisons, or excretory substances, contained in it.

We have in this fact an explanation of the stimulating properties of meat, to which the great popularity of flesh food must be attributed, since, as is well known, the human appetite readily acquires a taste for stimulants of any sort. But this very property is a most important argument against its use, for the reason that stimulants do not impart force or energy, but only compel the nerve-centers to discharge to an abnormal and unsafe extent the energy which they hold in store. Pavey, the distinguished English physiologist, in his work on food and dietetics, quotes the following paragraph from Johnson's "Travels in Southern Abyssinia," as evidence of the stimulating and even intoxicating effects of the flesh of animals, which by these people is often eaten raw: —

"Travelers who have witnessed their '*brunde*' feasts can attest the intoxicating effects of this kind of food, and they must have been astonished at the immense quantity that can be eaten in the raw state compared to that when the meat is cooked, and at the insensibility which it sometimes produces."

From these facts it is clearly evident that beef tea can in no sense be regarded as a food. It is simply a decoction of flesh, and contains the poisons and excretory products which are always present in raw meat.

Liebig's extract of beef and all similar preparations are pure stimulants. This fact was pointed out by Professor Liebig himself, who particularly stated that the preparation which has so long been known by his name must be regarded, not as a food, but as a stimulant, allied to tea and coffee

A PHYSIOLOGICAL REASON WHY WE SHOULD NOT EAT IRREGULARLY OR BETWEEN MEALS.

BY W. H. RILEY, M. D.,

Superintendent of the Colorado Sanitarium, Boulder, Colo.

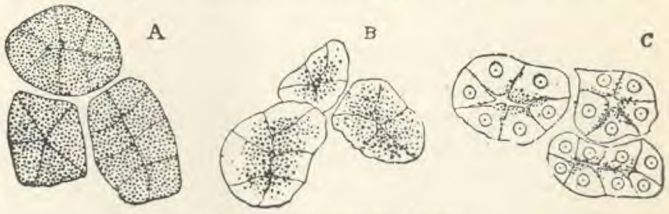
MANY individuals are addicted to the habit of eating their meals irregularly, while a still larger number eat between meals. These evil habits are perhaps more common among children and the younger members of society than among persons of more mature years.

There are many reasons that might be given to show that such practises are harmful to the body. In this brief note, however, I wish simply to call attention to one physiological principle that argues against them.

The purpose of digestion is to change food substances from an insoluble to a soluble condition, and thus render them ready for absorption. Substances which are insoluble in water can not be absorbed into the blood, and consequently are valueless as food until they are in some way changed and made soluble. Digestion may be described as a series of physical and chemical changes in food to render it soluble and prepare it for absorption from the stomach and intestines into the blood. The chemical changes in the food are brought about by the action of certain digestive fluids or juices, which are poured out into the mouth, stomach, and intestines from the glands that are imbedded in the mucous membrane of these organs, or are closely adjacent and communicate with them by means of ducts.

These secretory glands are made up of a large number of cells, and their healthy and normal action, together with the proper and complete digestion of the food, depends upon the healthy and normal action of the cells that compose the glands. These cells during their life have certain periods for work and activity, and other periods for rest and recuperation. To illustrate: When food is in the stomach, the glands of that organ are active, and secrete a large amount of gastric juice, which is poured out into the stomach and digests the albuminous elements of the food. This process of secretion on the part of the gland and the cells composing it being a real and active process, it sooner or later leads to exhaustion of the cells of the gland, and a depletion of those substances out of which the cells manufacture gastric juice. There will therefore come a time when the cells of the glands and the glands themselves will be completely exhausted, and will not have the ability to secrete until they are

allowed a period of rest, and an opportunity to rebuild themselves with new material, and to recharge themselves with new energy. After a period of rest, during which time these cells forming the gland take in new material from the blood and store it up in their own bodies, they are again prepared to unload this material in the form of a secretion which is again capable of digesting food. In the working, therefore, of the secretory glands of the stomach and other parts of the alimentary canal, there is a period of activity during which the cells secrete, and a period of rest during which the glands are being re-stored with new matter and recharged with new energy, preparatory to further action. These periods of rest and activity naturally and normally follow each other at regular intervals; consequently, food should be taken at regular intervals, in order to be in harmony with this natural law on the part of the glands.



CELLS OF THE SALIVARY GLAND.
A, after rest; B, after a short period of activity; C, after a prolonged period of activity.

In the illustration shown herewith, A represents the condition of the salivary glands of the mouth after a period of rest. The little dots inside of the cells indicate new material that has been absorbed from the blood by the gland, and is being stored up until food shall be taken into the mouth, when this material will be broken down and discharged in the form of a secretion for digesting the food. B represents the condition of the cells after a short period of activity. It can be seen, by comparing A and B, that there are fewer granules in B than in A, and the cell is, consequently, partly discharged as the result of its secretion. C represents the cells after a prolonged period of activity. In this instance, the cells are almost completely discharged of all the granular matter which is so abundantly present in A. The secretion, coming from a cell in the condition of A, is healthy, abundant, and efficient in its ability to change the food from an insoluble to a soluble condition; while the secretion coming from a cell in the condition of C is scanty, and contains little or none of the active principle of the secretion which is concerned in changing the food. It is therefore very inefficient in its ability to aid digestion.

Now, if one eats his meals at regular intervals, and not too near together, the cells of the different digestive glands have an opportunity of rebuilding and recharging themselves with new material and new energy, and are in the condition represented by A. On the other hand, if the meals come too close together, or if the individual eats between his regular meals, the cells do not have an opportunity of recharging themselves with this new material and new energy, and the food that is taken into the stomach finds the glands either in the condition represented by B, in which the cells are partially discharged, or else in the condition represented by C, in which they are entirely discharged, the condition depending, of course, upon the time they have had for rest. If one, for instance, eats a luncheon two or three hours after a heavy meal, the glands of his stomach are in very much the condition represented by B. The secretion poured into the stomach under these conditions is scanty and inefficient, and, consequently, the food is only partially or imperfectly digested. If food is taken more frequently, and the stomach given no time

at all to rest, the glands are in the condition represented by C, and the food is scarcely digested at all, but undergoes fermentation, and many other disorders follow, besides those referring to the stomach.

It can be clearly seen from this physiological principle that it is important that meals be taken not too close together, and that nothing be eaten between the meals, so that the glands of the stomach may have regular periods for activity, followed by regular periods for rest, during which time they can recuperate, build themselves up, and be ready for the digestion of the next meal.

Errors of this kind in eating first lead to functional disturbance of the stomach, but if the habit of eating too frequently be continued for a long time, the glands of the stomach become completely exhausted, and refuse to do their work at all; they will then become atrophied, and decay, and the final result will be the total inability of the stomach to digest food.

A BUSINESS DRESS FOR BUSINESS WOMEN.[1]

BY MARY HENRY ROSSITER.

THE business woman may very properly declare with the little boy who was asked how old he was, "I am not old at all, I am almost new." Fifty years ago the business woman as such was practically unknown. It is true that women have done business from the earliest times, as long as men have; they have managed shops, bought and sold goods, kept accounts, manufactured food and clothing, written and sold books. But formerly, like Madame Defarge, they were ostensibly knitting, attending strictly to domestic affairs. It is only very recently that they have ventured to come out boldly from behind the men, and acknowledge their real position as business women.

This fact has decided advantages in considering the business woman's dress. We are not hindered by the opinions and prejudices of those very ancient and respectable spinsters, Custom and Tradition. We are not obliged to go back to the past, to study the evolution and the adaptation of fashions, to reject this feature as absurd, to accept that as indispensable, to scrutinize many in the light of conventionality.

The inevitable buttons on a man's coat sleeve, we are told, have descended from the time when the sleeve was made long enough to come down over the hand and protect it. The buttons were placed there so that the sleeve could be fastened back when the wearer wished to drive or to ride horseback. The buttons on the back of the coat are supposed to have served a similar convenience for the skirts of the garment, which were turned back and buttoned during the horseback ride. These buttons are of no use whatever to-day. The tailor puts them on the coat because — why, because all coats have them. They are put on as a matter of course. No one ever thinks of them at all, to question either their usefulness or their history. Yet if a coat should be made without them, a commotion would instantly arise. These buttons are a forcible illustration of the persistence, whether in affairs ecclesiastical, fashionable, or social, of a form which has outlived the circumstances that gave it birth and vitality.

[1] Read before the annual meeting of the Michigan Woman's Press Association, May 26, 1898.

The coat of the business woman has no past. Both the business dress and the business woman are the product of present conditions. The business woman, having been courageous enough to assume her title, is prepared to go a step further and to adopt the dress, and that dress only, which will best serve her need.

The very first requirement is self-evident — a healthful dress. The business woman has troubles enough, and wear and tear enough upon her muscles and nerves, without the additional burden of uncomfortable clothes. It is hardly business-like for business women, who concede the superior physical strength of men, their competitors, to continue to allow them the further advantage of a much more sensible and healthful dress. This does not by any means imply the adoption of mannish attire by business women. Mrs. Frances Stuart Parker, the wife of Colonel Parker, who is so well known as the advocate of advanced methods in the education of children, and who is herself an able writer upon reform in dress, calls attention to the fact that by comparing the waist of the Dancing Faun with that of the Venus Genetrix, it will be seen that it is the fashionable, and not the healthful, dress of to-day that is in reality an imitation of the masculine, that man's waist is triangular, sloping from the shoulder to a point above the hips, while a woman's form, on the contrary, should be ovoid, or egg-shaped — not mathematically ovoid or mathematically triangular, but sufficiently so for truthful comparison. It is the tailor-made girl instead of the business woman who is stiff and mannish and lacking in womanliness, and the reason is that she, and not the advocate of rational dress, "apes the masculine."

Healthful dress is based upon the principle that clothes were made for the body, and not the body for clothes. It does not concern itself with the outside gown or frock alone, but begins with the garments next the skin, and insists that every article worn should serve a practical end, and contribute to the

comfort as well as the grace and beauty of the wearer. How much strength and how many moments are wasted by women every day in putting on and taking off unnecessary clothes. Not that any garment is unnecessary which adds to a woman's personal beauty; but it certainly does not increase the delicate grace of any figure to put several thicknesses of underwear, woolen and muslin, around the largest portion of the body, to crowd over these a stiff corset, and then to

place four or five layers of bands of various widths and degrees of clumsiness around that part of the waist which is supposed to be curved and flexible.

It is not very long since women habitually wore from twelve to fifteen separate pieces of clothing. Healthful dress prescribes a union suit of seasonable fabric next the body. Over this may be worn a combination linen or cotton suit, and a skirt suspended from a healthful waist. Numerous skirts should always be avoided. In the winter, equestrian tights are far superior to additional skirts, for warmth. All clothing should be light in weight. With the short business dress, one may wear either a short, dark-colored petticoat or bloomers. Bloomers made of the same material as the dress are sometimes convenient; made of black China silk, they are cool and serviceable.

The business woman's dress should be simple, so that it can be quickly put on and arranged. The skirt should be buttoned to the waist, and the whole should be so carefully adjusted that the weight shall be evenly distributed. There should be no superfluous adjuncts that require attention and time; no trimmings that will fray and become shabby; for the business woman must not be obliged to examine her dress every evening to see what damage the day's work has wrought. Her business dress should be her true and tried friend, and must be so constituted that it can meet all emergencies, and will never give out without ample warning.

A short dress is much more convenient and suitable for all kinds of work and all kinds of weather. It is much easier to walk in a short dress, and the business woman who rides a wheel would not think for a moment of anything else. A skirt that is six inches from the floor is short enough for the wheel, and long enough to be modest and graceful.

Most people have discovered by this time that women are not solid from the waist down, and the sight of an entire shoe, with the real ankle inside, is no longer shocking to any but the ultra-conservative. It must be admitted that, other things being equal, the long skirt is more becoming and attractive. But the business woman is prepared to sacrifice something for the sake of comfort and convenience. Besides, other things are not equal. When a woman stands in a parlor, or upon a beautiful lawn, or a freshly scrubbed pavement, if she has

nothing to do but hold her fan and smile sweetly, or saunter slowly among the flower beds, she undoubtedly looks better in a long skirt; but if she has papers or books to carry, an umbrella to hold, stairs to climb, muddy streets to cross, pools of filth to dodge, is she not really more attractive and charming in a skirt that clears the mire, that she does not have to grasp convulsively in the back every few seconds to keep it out of tobacco juice or dirty water, than in one that is constantly becoming unsightly and bedraggled, in spite of the most frantic and wearisome exertion?

It is an untold comfort, also, to know that one's skirt band, or facing, will be intact and clean after a hard day's jaunt in the city. For this reason alone, if there were no other, the ideal dress for the business woman is short. She has no time to spend in sewing on strips of velveteen or braid that have caught on a nail and tripped her.

The short skirt is less expensive than the long one. It is not the saving in a yard or two of material, but in the better and longer wear of the business dress. It is really a serious annoyance, and no small expense, to have a new skirt become grimy and frayed around the bottom before it has been worn half a dozen times. This is the chronic condition of the long skirt that is habitually worn on the street.

The short skirt being the most conspicuous feature of the business woman's dress, and being regarded with disfavor or amusement by many men, needs courageous and persistent defense. The women who believe in it should wear it, and when the men see that their friends of this persuasion cease to poke umbrellas in their ribs and to knock off their hats in their vain efforts to make two hands and arms do the work of six; and when they learn that women can be amiable and carry their own bundles and still retain that subtle femininity to the importance of which men tenaciously and justly cling, they will give up their frowning or laughing, and, as some have already

done, take off their hats and pay a salute to the business woman's sensible dress.

This is a kind of reform work especially adapted to young women and girls. In the very nature of things, they can do more to popularize such a fashion than can older women. It is hardly to be expected that those who have worn the conventional dress for twenty or thirty years, and who have passed the age of greatest physical activity, who have also long since become accustomed to the restrictions and inconveniences of fashionable clothes, can do much more than give their encouragement and support to the coming generation of business women. By the time the latter have worn the sensible dress for thirty years, it will be so firmly established in the good graces of the public that it will seem the natural and appropriate costume for all classes and ages of women.

Plenty of pockets is an absolute necessity for the business woman's dress. The ordinary dress has no pockets, and women are obliged to resort to all sorts of devices to supply their place. One pocket in the skirt, if it is put where one is not obliged to sit on it, and four or five in the coat, give a woman a feeling of relief and independence in delightful contrast with the helplessness induced by the knowledge that she has no natural place to put her handkerchief, her purse, her watch, her knife, or any other accompaniment of a busy woman's outfit. One has to be careful, however, that these pockets are made to suit the articles she wishes to carry, and that they are not overloaded so as to bulge out or sag down with their burdens.

The dress, of course, must be unobtrusive in color. This does not mean that it should be somber and dingy and ugly. A quiet dark shade of green or blue, brown or black, or in the summer of the lighter browns and grays, makes a very pretty and suitable costume. Most women may be trusted to choose something that is becoming and harmonious. But one must beware of fashionable colors, the season's passing fancies, for these are seldom desirable in a business dress.

Serges and cheviots are perhaps the most suitable fabrics for business women's dresses. Waterproof serge or cravenette is a very good material, and gives excellent wear.

The business woman, and especially the press woman, does not need to be urged to adopt a healthful dress. She is already convinced of its importance, and is eager to give her hearty support to that costume which appeals to her judgment and common sense. Probably most women have to experiment a little before they can fix upon the details of a garment that will suit both their business and their personality. The business dress is not a uniform; while at the same time maintaining a principle, it must be adapted to individual taste and requirements.

THE CIGARETTE AGAIN.

THE examining surgeons of the United States army, with a powerful sledge hammer, have come to the aid of physicians, women, and philanthropists in general, who have long been hammering as vigorously as they could at the cigarette habit. The surgeons find that ninety per cent. of the volunteers rejected are habitual cigarette smokers and have weak hearts. Many physicians were quite unprepared for the sweeping claim that the cigarette is responsible for so much damage to the health of young men. The Chicago *Tribune* recently published a symposium of prominent physicians of that city on this subject, coupled with that of the evils resulting from bicycling. In the latter case the troubles are said to be confined almost entirely to riders who use low handle bars and lean forward in the saddle. This position not only induces curvature of the spine and other diseases in that part of the anatomy, but causes the other organs to crowd the heart out of its place, and produces irritation which ultimately becomes chronic.

The sentiment is almost unanimous that bicycle riding in moderation is beneficial, if the rider sits in the right position and has a proper saddle. But there are no redeeming "ifs" for the cigarette habit.

Dr. William E. Quine, professor of the principles and practise of medicine and clinical medicine at the College of Physicians and Surgeons, says: "Whether the cigarette causes imbecility or whether a congenital condition of imbecility leads the individual to the use of the cigarette, I do not know. So far as I am willing to express myself on this subject I say sincerely that the cigarette and imbecility are related in some way."

Dr. Arthur Dean Bevan, professor of anatomy at Rush Medical College, says: "I should say that the American army ought to beat the army of Spain to a standstill just on the basis of cigarette smoking. The Spaniards are a nation of cigarette smokers, and we are not."

Dr. E. Fletcher Ingalls, professor of laryngology and diseases of the chest, says: "I have no doubt that the use of tobacco seriously affects the heart, weakening the muscle and causing irregular action. I do not think that these results are any more frequent among the users of cigarettes than among those who use a pipe or cigar, excepting as a consequence of excessive use and the inhalation of the smoke, which permits the absorption of a larger amount of nicotine. The cigarette is no more deleterious than the cigar or the pipe. The use of tobacco by growing boys is specially objectionable, and is undoubtedly the cause of palpitation of the heart, shortness of breath, and physical and sometimes mental weakness that may not be discovered until after maturity."

Dr. I. N. Danforth, professor of practise and clinical professor of medicine at Northwestern University Woman's Medical College, gives this personal testimony: "I have seen many cases of heart weakness — runaway heart, as we sometimes call it — which I thought were directly due to cigarette smoking. I believe that cigarette smoking is doing our young men a vast deal of injury. It seems to be a form of dissipation akin to opium taking; it apparently makes slaves of its devotees, and undermines their will-power."

Dr. John H. Chew, professor of medicine at the Chicago Polyclinic, says: "I can not be credited with saying anything too strong in condemnation of cigarette smoking, and if the majority of rejections for enlistment is due to this

cause, I am not surprised. To my mind nothing will make a weakling out of a man so quickly as the cigarette. It is without question the most deleterious manner in which tobacco can be used. Aside from the paper, the smoke of which is injurious, I am told that many brands are fixed up with different drugs, opium among others, although I am inclined to doubt this, because opium is much too expensive to be used for any such purpose. The danger from cigarette smoking is in the inhalation of the smoke, because of the enormously increased absorbing surface with which the smoke comes in contact, and from the direct irritating effect upon the bronchial tubes."

Dr. E. M. Hale, emeritus professor of materia medica and therapeutics at the Chicago Homeopathic Medical College and a specialist in diseases of the heart, gives the following strong statement: "It is a lamentable discovery that just now, when the country needs the military services of her young men, the examining surgeons find that ninety per cent. of those rejected are habitual cigarette smokers and have weak hearts. The loss of the services of so many men may be a great calamity should this war continue many years. I have often been asked by my patients why the smoking of cigarettes is so much worse than smoking cigars or the pipe. The answer is, Because the smoke is inhaled while the smoke of a cigar or pipe is not. Watch a cigarette smoker. He first draws in all he can of the smoke, then in exhaling he forces it through the nose. How much mucous surface is bathed by the smoke?—Over one thousand square feet! It first passes through the larynx into the bronchial tubes, then into the bronchioles, or small bronchi, into the air-cells — about 725,000,000 of them. All this surface, especially the air-cells, absorbs the nicotine from the smoke, and it is carried into the blood, where it is distributed to the brain and the heart. Now, nicotine paralyzes muscular fiber, and the heart is especially affected, because it receives and distributes all the blood in the body. The smoker of the pipe or cigar, or one who chews, has this advantage, that the nicotine is only absorbed by the surface of the mouth and tongue, which exposes only a few square feet. If something is not done to prevent children and young men from smoking the cigarette, we shall have to depend on a weak-hearted army, with disastrous results. It is not the paper of the cigarette nor any ingredient supposed to be mixed with the tobacco that is harmful. In fact, the better the tobacco, the more nicotine it contains, and the greater the poisoning effects."

THE LIVER.

BY J. H. KELLOGG, M. D.

FROM a physiological standpoint, perhaps, the most conspicuous difference between a man and a vegetable is the fact that a man has a liver while a vegetable has not. Every animal of any importance has a liver of some kind, although it may not be on the right side of its body. If the liver is not located on the right side, it is spread out over the alimentary canal. Some animals of the lower orders have livers consisting of a few cells scattered through the intestinal tract, but the majority have a mass of cells, gathered in one place, and forming a brownish body.

Animals and vegetables have many similar, though clearly distinguishable, characteristics. But when we examine

primitive organisms, we find that it is practically impossible to tell the difference between an animal and a vegetable cell. A cell is a very curious study. It has power to feel, to move, to act, to eat, and to digest. If you watch it through the microscope, you will see it, every now and then, take up a little fragment and swallow it. It has no mouth, but it makes one on the spot. It has no stomach, or rather, it is all stomach, and it can eat without teeth. It has power of locomotion without the organs of locomotion. It can stretch itself out like a worm, or huddle itself in a pile, or spread itself out like water. This is the condition of the little protoplasmic being which forms the basis of life, whether animal or plant life.

While animal and vegetable cells look alike, they differ in a vital particular. The vegetable cells store up energy, building it out of original elements, while the animal cells have not this power. The vegetable takes in the elements of earth, and air, and water, and unites them in the solid materials with which it builds roots, stems, branches, leaves, flowers, fruits, all the different formations that are found in the plant world. Animals, on the other hand, have only the power of assimilation or transformation. The animal is all the while disorganizing, while the vegetable is constantly building up.

The body decays faster while it is living than after it is dead. If a dog dies in a forest, it may be a year before its body entirely disappears, but while it is alive, it is disintegrating so rapidly that it is obliged to eat several times its own weight during the year, to replace itself. About twelve solid ounces of carbon pass off from the human lungs every day, in the form of invisible gas. Several ounces more are thrown off through the kidneys and the skin, so that a man is obliged to eat three or four pounds a day of solid and liquid material, in order to replace that which is carried away as the result of work.

The energy of the body is derived from the consumption of food, but it is only by combustion that we are able to manifest energy. The body is like a furnace; it consumes fuel. This fuel is stored up in the muscles, and other parts of the system, and is continually replenished by the food we eat.

The function of the liver is to take care of the waste substances that result from the work done in the body. It is the most important means by which the destructive and dangerous refuse is removed and the blood purified. The liver is a large gland, the largest in the body, and weighs about three and one-half pounds. All the blood in the body passes through it once in every three or four minutes, and as it passes, it is purified. The liver takes out the alkaline poisons,—the residue, which corresponds to the ashes in the stove, and is the result of the process of combustion, —and oxidizes, or decomposes and destroys some portions, rendering other portions more soluble, so that they can be carried through the kidneys.

The liver is an exceedingly important organ. Were it not for the liver, the body would rapidly fill up with débris. The man who feels bilious is not suffering because his liver is inactive, but because it is overtaxed. The bile-duct has become obstructed with waste products, and these poisons, not being able to make their way through, are reabsorbed, in consequence of which the skin is stained yellow, and the man becomes bilious or jaundiced. Stop the work of the liver, and gall-stones, formed in the gall-bladder, find their way into the gall-duct, obstructing it, and preventing the bile from doing its work. As a result, poisons are disseminated throughout the body.

The liver is like a furnace with a self-dumping grate; when there is too great an accumulation of ashes, it dumps itself, automatically. The person who complains of a torpid liver might better complain of his stomach, or rather attend to it, for the trouble is there. The foods taken into the stomach have doubtless decomposed, and produced poisons that the liver is unable to dispose of. If proper care be taken of the stomach, there will be no difficulty with the liver, except in case of persons who have livers that are indurated or permanently and organically crippled. The liver is so vigorous that it keeps on working after the man or the animal dies. It does not stop until decay actually steps in, and robs it of the power to work. It is the last organ in the body to cease operations.

Biliousness and torpidity of the liver are conditions in which the organ is overworked. People think that their livers need to be "stirred up," and made more active. They go to the doctor and ask for something to stir up and tone up the liver. Perhaps the doctor gives them podophyllin, or blue pills or some other mercurial drug. But there is no need of this. The liver is always at work, doing its duty. Even when the gall-duct is obstructed, the liver continues to make bile, and the bile is forced back into the blood, and must find its way out through some other channel.

The body contains about ten pounds of blood. The blood cells are constantly dying and being regenerated, and the entire blood is said to be renewed every six weeks. It is the duty of the liver to dispose of the dead corpuscles. Every drop of blood contains about five million corpuscles, so that the task of the liver in carrying off these millions and millions of dead corpuscles is no sinecure.

The liver is a kind of rendering establishment. It utilizes the dead red blood-corpuscles by making pigments from them. If one is troubled with too much bile, and takes a dose of mercury to carry it off, he thinks the medicine benefits him because the bile is discharged. But the mercury merely neutralizes it and makes it useless, so that it must be thrown away, whereas it was not intended to be thrown away. Part of the bile should be discharged, but part of it is needed in digestion.

The liver extracts coloring matter from the tissues, and saves it for tinting the hair and the skin. It colors some of the fluids of the body, and the dark chamber of the eye. It not only consumes the wastes of the body, dissolves them, and makes them ready for elimination, but it captures the poisons produced by the work of the brain and the muscles, and destroys them or changes them so that they can easily be removed through the other excretory organs.

A man could not smoke were it not for the liver. This organ takes up the nicotine as it comes into the body, and destroys it. Poisons are constantly entering the system through the food and drink, sometimes by accident, sometimes as the result of ignorance. The water drunk may have passed through a lead pipe; the food eaten may have contained a foreign substance. This poison the liver stores up within itself. If one drinks alcohol, the liver endeavors to oxidize it and get rid of it, so that the body may not suffer harm and injury from it. The liver sacrifices itself for the benefit of the body in general. Twice as large a dose of poison is required to kill an animal that has a liver as to kill one that has been deprived of this organ. This has been shown by experiments upon a frog. The frog will live a day or two after its liver has been removed. One half the quantity of poison required to kill it before its liver is taken out, will kill it after that operation. Similarly, it requires twice as

much poison to kill a man when it is administered through the stomach as when it is injected through the skin.

Sometimes substances that are taken into the stomach decompose there and produce so many different kinds of poisons that degeneration takes place in the body itself. Some of these substances are taken as foods. Cheese, for instance, before it is eaten, is already decomposing and producing poisons, and this decomposition continues afterward, overtaxing and burdening the liver in its work of elimination. Flesh foods which decay rapidly outside the body, decompose with the same readiness inside of it, and if the gastric juices are not able to disinfect it entirely, the consequence is that still more poison is loaded into the liver.

Were it not for the liver, life would necessarily be very short. Why? — Because death comes when the balance which naturally exists between the reception of foods and the elimination of poisons has been destroyed. If man took into his body only proper food, and if there were no poisons produced by this food, there would be no reason why he should not continue to live indefinitely. Isaiah prophesies that the human race will eventually become so strong and so perfect again that the life of man shall be "as the life of a tree." A tree sometimes lives for a thousand years. Go to Palestine, and you will see thirty or forty of the cedars of Lebanon still standing, the same trees that Solomon looked upon. A man could live as long as a tree were he not all the time producing poisons in his body by work. In the young child, as it is growing and developing, the skin is so active, the kidneys are so healthy, and the liver is so vigorous, that it can remove the poisons and make the blood absolutely pure. That is why a healthy child has so sweet a breath and so fair a skin. When he becomes old, it is different. The same is true of the dog; the puppy's breath is sweet, its whole body is sweet, so that it may lie in a lady's lap or on the sofa without leaving any unpleasant odor. But after ten or twelve years of meat eating, that dog becomes so offensive that he has to be driven out of the house. The strong odor is due to the accumulation of waste substances in the body.

The man who eats flesh, by so doing adds to the poisons of his own body those of another animal, hence for him the time when the kidneys, liver, and other eliminative organs begin to wear out, and when the fires of life burn feebly, comes sooner than it does to the man who lives on a natural, pure diet. Carnivorous animals are necessarily much shorter lived than herbivorous. There comes a time in the physical history of every man and every animal, when the poisons in his system begin to accumulate, when the liver loses its power to destroy them and to carry them away. Then he begins to feel old, and he is old. But that evil day may be postponed by co-operation with the liver, by giving it shorter hours of labor and winning its friendship and support.

GROW old along with me!
The best is yet to be,
The last of life, for which the first was made:
Our times are in His hand
Who saith, "A whole I planned,
Youth shows but half; trust God: see all,
nor be afraid!"

— *Browning.*

SOME EFFECTS OF INTOXICANTS.

"SOME CLINICAL ASPECTS OF INEBRIETY" is the subject of a valuable article by H. S. Drayton, M. D., of New York City, in the *Quarterly Journal of Inebriety* for April, 1898. The writer says: —

"An all diffusive element, alcohol, in time depraves nearly every tissue of the body, and induces morbid conditions that are for the most part characteristic. At once narcotic, corrosive, absorbent, and irritant, whatever of vital structure it comes in contact with is affected disastrously. In the stomach the membrane becomes inflamed, and a catarrhal exudate impairs the quantity and value of the secretions; the liver becomes congested, and later hardens and contracts; the lungs suffer loss of elasticity, and a bronchial and vesicular catarrh may lead to tubercular infiltration; the heart muscle undergoes fatty degeneration; the arteries likewise are changed in consistency and resilience; the kidneys sustain grave alterations, with tendency to forms of Bright's disease; the vascular tissues lose their normal elements and function; fat may accumulate in the cellular spaces, in the abdominal wall, the mesentery, while the extremities become lean and attenuated; the nerve-centers especially suffer injury; brain and spinal cord degenerate, with corresponding loss of function. These perversions and deteriorations are well known to the laity, so to speak, of our community, for their symptoms and phenomena are too common and expressive to be misunderstood."

Dr. Drayton then speaks of the opportunity afforded the clinician to see and hear things quite excluded from the observation of the average missionary and reformer. He says: —

"Through the signs created by a course of vicious living, that build themselves in the features and influence attitude and speech, he reads the life of the patient at the first interview, and is enabled to sketch out the necessary plan of advice and treatment. The catarrhs, the coughs, the hoarseness, the sore throats, the rheumatism, the skin eruptions, the lameness, aches, pains, and the hundred other ills that are complained of, are but the outer limning of the mental malady, that through its insidious agent, alcohol, is destroying the physical organism."

The writer mentions the common plea, "I drink only a glass or two a day; that is n't enough to hurt me;" or, "I work hard and need something to keep me up," and gives the following instance as merely illustrative: —

"A bright, energetic young man of about forty years of age applied to me for advice. He had a chronic gastric catarrh; no appetite; inability to sleep; was restless, nervous; his tongue so very tremulous and excited that he could not keep it out for inspection. He was a plasterer and very skilful. I inquired how many glasses of liquor he drank a day. Protesting that he had always been a temperate man, he said that he found it absolutely necessary to take two or three glasses of whisky and water to keep up his strength. The weather was warm, and his work being so much indoors, he became very warm and thirsty. So he took about four 'beers' to keep cool and moisten his throat. That became so dry and harsh that he must have something to make it comfortable. He did not understand how the alcoholic mixture operated to render his mouth and throat inflamed and harsh, and why his repeated imbibitions but added fuel to the flame of his discomfort, while the poor stomach, persecuted by the same treatment to the extreme of endurance,

was breaking down. This man was anxious to be well, and, accepting my assurance that his drinking habits lay at the root of his weakness, promised to follow my directions, although fearful that he would suffer while doing so. He had the courage to carry out the advice, and after a few months had so improved that he could do his work in comfort and without sending to the corner saloon for a kettle of beer."

Speaking of the functional loss and the general breakdown of the tissue caused by the constant poisoning of the entire system by alcohol, Dr. Drayton instanced the case of a man of about fifty who came to the New York hospital with symptoms of rheumatism and semi-paralysis of the limbs. His case did not appear to be very serious. A few days' rest with simple applications would be likely to set him on his feet. But in spite of all that was done for him, his paralysis increased, and he died suddenly. He had been a drinking man for years, not what is termed excessive, but by habit. "I remember," says the writer, "how we put our heads together, pathologists, neurologists, dermatologists, heart-and-lung men, etc., and came to the conclusion that the brain must be the seat of the disease, the lesion. An autopsy (we call it necropsy now) was made, the brain carefully examined, and nothing of marked character denoting disease was found in it. So with the other organs, all seemed in fair condition, only a generally depressed atonic, poorly-nourished state of the different parts of the body declared itself. The blood seemed thin and watery, the stomach and intestines were anemic, and their interior coats had a patchy, washed-out appearance, with here and there reddened spots of inflammation. The man was a beer drinker mainly, and the effect of the beer ingredients had thinned the membranes of the organs and vessels, and given them a somewhat pallid color. Loss of function, loss of energy, loss of volume, attended the habit of drinking, until the organs became exhausted."

The writer says further: "The effect of alcohol on the brain and correspondingly on the mind is in its grosser aspects pretty well known. The grades of disturbance are many, from slight obscuration to maniacal frenzy, according to the temperament and organic constitution of the drinker, according to the sort of stuff he drinks, the way in which he drinks, etc. I need not go into particulars here. The journalism of the day furnishes abundant details for the information, if not the edification, of the public. The saddest as well as the most destructive work of alcohol is that produced in the brain, accompanied as it is by the dethronement of man's intelligence and the wreck of his moral integrity. Some natures appear to experience a kind of temporary mental improvement through their potations, but it is improvement of a coarse kind, a low wit that amuses, but on analysis is found to have little real point."

A popular theory is discussed as follows: "I am of opinion that a good proportion of the so-called cases of hydrophobia are more probably cases of meningitis due to cerebral conditions induced by alcoholic drinking. In the country it used to be the custom, when a man had been bitten by a dog assumed to be rabid or by a venomous reptile or insect, to give him whisky until he was thoroughly drunk. It was the impression that the whisky would counteract the poison of the bite. It was claimed to be poison antidoting poison. But it did not always work. In one of the Southern medical journals lately a physician gives an account of a man he was called to treat. The whisky act had been played on him until he was more dead from the

liquor than the poison. Alcohol is antiseptic to a degree, we know, and necrotic, *i. e.*, destructive of living tissue. I have tried it on false membrane in the throat, injurious growths, small tumors, ulcers, etc., and found it of value in destroying them, just as I might use carbolic acid, caustic potash, nitrate of silver, etc., to cut down and remove offensive growths. So alcohol might, in default of better things, be of service in treating poisoned wounds, dog bites, etc."

THROUGH THE GOOD HEALTH SPY-GLASS.

NATURALISTS state that if the pupa of the ordinary bee is fed on queen bread, it develops into a queen bee, and not into an ordinary bee.

The editor of *Pediatrics* says, that in France there is a law forbidding any one to give solid food of any kind to infants under a year old, without the written authority of a qualified medical man.

The native population of Cuba lives principally on animal food, and consumes large quantities of fat. Plantains, bananas, sweet potatoes, corn, beans, and rice, form the principal articles of vegetable diet. There is little beef used by the people of the country, but large quantities of pork are consumed. The custom throughout the island is to have breakfast about ten or eleven o'clock, and dinner from four or five to six in the afternoon; two meals a day.

Discussing the injurious effects of bicycling, Dr. Clifford Mitchell, professor of renal diseases, chemistry, and toxicology at the Chicago Homeopathic Medical College states that an indirect way in which bicycle riding does great harm is that it leads to excess in meat eating and beer drinking at a time when the individual has exercised hard and perspired freely. He quotes Dr. E. L. Keyes, of New York, as having shown that when a person of gouty tendencies exercises hard, perspires freely, and then immediately eats freely of meat and drinks beer or malt liquors, there is a tendency to the formation of stones in the kidneys.

A writer in the *Harbinger*, published at Lahore, Punjab, India, tells the story of Kasper Hanser, a wild boy of the woods, who lived on nuts, roots, and fruits. He was as nimble and strong as a monkey. His hearing, sight, and smell were as acute as those of a wild animal. When first captured, he refused all foods but those to which he had been accustomed. Before he ate anything he smelled it; if it did not please his sense of smell, he refused it. When he was first induced to eat meat, it threw him into a fever and made him ill. He was very intelligent and learned quickly. As he became more civilized, ate ordinary foods, and lived in a house, he became dull, lost the acuteness of his senses, and died in a few years a victim to civilization and wrong living.

Lieutenant Robert C. Peary, the arctic explorer, has just published the history of his adventures and researches in a fascinating book entitled, "Northward over the Great Ice." Lieutenant Peary thinks that wherever the white man has gone among the Eskimos he has degraded them. He exclaims, "God grant no civilization to curse them!" and says: —

"They have no unnatural or depraved appetites or habits, no stimulants or intoxicants, no narcotics, no slow poison-

ing. Nor do they in any way mutilate or disfigure the form the Creator gave them, or modify or pervert the natural functions. Neither have they any medicines. Their diseases are principally rheumatism and lung and bronchial troubles. The causes of death among the men come largely under the terse Western expression, 'with their boots on.'"

In many German cities, we are told by Frank S. Hoffman in the *Outlook*, it is required that one third of every building lot shall be left unbuilt as space for air and light; also that no apartment shall be used for human occupancy containing less than a prescribed minimum of cubic space for each individual or lacking the required provision for light, heat, and ventilation. It is also the policy of German cities to bring under strict governmental supervision all articles of ordinary diet. This is especially true of the meat supply. Almost everywhere the meat must be slaughtered under municipal auspices, and public inspectors are constantly going from shop to shop where it is being offered to the public. It may fairly be said that adulterated foods do not exist in Germany. The law provides that even shop keepers who are ignorant of their nature shall be liable to fine and imprisonment if they attempt to expose them for sale.

Edouard Remenyi, the celebrated violinist, who died recently, was strongly opposed to flesh eating. H. L. Cleveland in the Chicago *Times-Herald* tells the following story about him: —

"Remenyi believed he might live to be a century old if he avoided the use of meat. His favorite dishes were Limburger cheese, pumpernickel, and hard crackers. Apollinaris was his only drink for years. Many a time, after concert hours, have I ordered this bill of fare for him, and listened to him say, for the thousandth time: —

"'My dear, man is bloody by nature, refined by education. Meat debases. Could I fiddle as I do if I devoured beef like a beast? — Impossible. My body needs little to keep it strong, but my mind must have every attention. Listen.'

"Then he would catch up his fiddle case, bring forth the instrument, flourish the bow over his head, fix his twinkling eyes on me, and play. What? I rarely knew. Usually something of his own — a fantasy of rage, the earthquake, the surf in a storm, the plaint of a woman's voice, the calling of mocking-birds — all ending in a sigh.

"'See!' he would exclaim, 'one keeps away from meat when he can do that.'"

The "Solace," the first ambulance ship ever commissioned by any government, is described by E. S. Bogert, Jr., M. D., Passed Assistant Surgeon, U. S. Navy, in the *Medical Record*. The main ward of the "Solace" contains bunks for ninety-two patients. It is connected directly with the operating room above by an elevator capable of carrying a cot or a wheeled stretcher. The operating room is large, light, well ventilated, and fitted with all modern appliances for aseptic surgery. On the forward upper cargo deck are a large steam sterilizer and storerooms for medical and surgical supplies. Besides four surgeons of the navy, three apothecaries, four mess attendants, and one cook for the sick, the "Solace" carries eight men nurses, all graduates of the Bellevue Hospital Training-School. The "Solace" is expected to remain near the fleet while in action, and at the close of the engagement to take the wounded on board and steam away for a naval hospital. The wounded requiring immediate operation will be placed on the tables at once. The "Solace" is painted white

with a broad green stripe, and flies the Geneva cross at the fore. The United States is the first nation to adopt this humane adjunct to naval warfare. The vessel is the product of the brains and energy of American surgeons.

The importance of having plenty of fresh air and sunlight in every house, particularly in those where disease may lurk, is emphasized by the report to the Royal Society by Arthur Ransome, of the results of his investigations into the influence of products of respiration on the growth of germs of tuberculosis. This report is summarized in the *British Medical Journal.* It shows that daylight and free currents of air rapidly deprive finely divided tuberculous matter of its virulence; that even in the dark, though its action is retarded, fresh air still has some disinfecting influence. The investigator has condensed moisture from the breath of both healthy and consumptive persons, together with that from the air of a wine cellar, of cellars under insanitary cottages, and of a weaving shed, and used this moisture as a culture medium for the tubercle germ.

His researches prove that any one of the various organically charged vapors, whether coming from healthy or diseased lungs, from the air of cellars, or from comparatively pure ground, forms an excellent culture medium for the tubercle bacillus, when kept away from the disinfecting influence of air and light. This power of promoting its growth is particularly manifest when the supporting substance is common wall-paper, though it is quite apparent when very pure filter paper is used. It is further proved that on these substances the growth of the bacillus may take place at the ordinary temperature of dwelling rooms; hence, there is no safety against an increase of the organisms in living rooms, in which ordinary tuberculous dust is present, and in which the natural disinfectants of the bacillus, fresh air and light, are not present in sufficient amount to destroy its virulence.

THE BRAVEST BATTLE.

THE bravest battle that ever was fought,
Shall I tell you where and when?
On the map of the world you will find it not—
It was fought by the mothers of men.

Not with cannon or battle shot,
With sword or mightier pen;
Not with wonderful word or thought
From the lips of eloquent men.

But deep in some patient mother's heart,
A woman who could not yield,
But silently, cheerfully bore her part,
Aye, there is the battle-field.

No marshaling troop, no bivouac song,
No banners to flaunt and wave,
But, oh, their battles, they last so long—
From the cradle e'en to the grave.

—*Selected.*

THE WINE MADE BY CHRIST.

GEORGE ELIOT somewhere speaks with pleasure of the "new things" one may begin with "new people." Teachers, preachers, lecturers, writers, are constantly harassed by the old things that must be said to new people,—or rather, by the old things that must constantly be repeated to all people. The lecturer's secure defense for the constant repetition of the same old story that points a moral, is the constant recurrence of the same fresh burst of approval from each new audience.

Arguments about the wine made by Christ at the marriage in Cana are perennially appearing. Probably no more satisfactory presentation of the subject has ever been given than is contained in "The Life and Teachings of Our Lord," a book by Abraham Coles, M. D., Ph. D., LL. D., which has become a standard authority in this country and in Europe. He says in substance:—

Mahomet forbade wine, and Christ made it. The difference between Christ and Mahomet was that of divine knowledge and human ignorance. Mahomet mistook a part for the whole, and with his ax of prohibition struck at a branch, supposing it to be the trunk. The omniscient Christ was guilty of no such error; he knew that the bane was manifold, and that to single out wine for special prohibition was folly.

The truth is, Christ forbade nothing. Not but ten thousand things are forbidden — everything hurtful is. Nature forbids, and nature is final. Why re-enact nature? reaffirm creation? deal in dittoes and deuteronomies? repeal laws established? settle what was never unsettled? Christ left nature as he found it — inviolate, unrepealed. His walking on the water did not abolish gravitation. Fact was fact the same as before; arsenic was arsenic; alcohol was alcohol. So far as nature forbade these, they were forbidden; so far as nature permitted them, they were permitted. Christ could go no further than nature, and be the Lord of nature. Consequently Christ could not have forbidden wine absolutely, and been God.

Wine is many and different. There is a kind of wine which is not, and another which is, intoxicating; that is, has a toxic or poisoning power, for that is the meaning of the term. Was the wine Christ made the latter? Christ's character is the answer. If that says No, it is no; for the wine is to be judged by Christ, not Christ by the wine. Christ we know, the wine we do not know. That which best befitted him to make, he undoubtedly made.

Taking our stand, therefore, on the immovable rock of Christ's character, we risk nothing in saying that the wine of miracle answered to the wine of nature, and was not intoxicating. No counter proof can equal the force of that drawn from his attributes. It is an indecency and a calumny to impute to Christ conduct which requires apology. One thing is certain: he did not make fermented wine, for there was no time for fermentation.

In opposition to those who deny (for what is not denied by somebody?) that unfermented grape-juice is wine at all, we maintain that not only is it wine, but wine pre-eminently,—the original, the true, as being nearest to the parent vine, and overflowing with the abundance of its life. Every step of that process called fermentation, whereby innocent sugar is converted into alcohol, is of the nature of a removal and eloignment. Wine and vine are etymologically the same. The Greeks called the vine "the mother of wine." Properly *oinos* is only then the

child of the vine when vinous, and vital when it represents "the wine of the cluster," "the pure blood of the grape." Death follows life, and corruption death, and there results a deadly something which men call wine, but wrongly, for it is no longer vinous. The vine disowns it. It is a corpse, not a living thing. Alcohol is not wine, but an atrocious usurper of its name and rights.

Christ made wine. He was maker, not manufacturer. The key-note to the miracle is creation. This alone renders it worthy and intelligible. Christ was no demiurge, but God; not inferior or different. "The Word was with God, and the Word was God." "All things were made by him." It was fitting that he should, in the outset, make this appear; and so he did. In a miraculous moment he did what, in his ordinary working in nature, he takes four months to do. Such was his début — an epiphany of Godhead; a demonstration to the whole universe that he was "over all, God-blessed forever." "This beginning of miracles did Jesus in Cana of Galilee, and manifested forth his glory," giving, in his own divine person, by a new genesis, as "in the beginning" of the world, needed practical proof and illustration that God is; and that he is one, not two nor many; that he created matter; that nature is from him; that though he exists and operates in nature, he is not nature, but a power apart from it and above it, acting upon it from without in omnipotent freedom of will, and directing it to beneficent ends; that the God who feeds us is identical with the God who saves us, thus sweeping away all the hoary diabolisms of disbelief, bearing the names of atheism, dualism, polytheism, materialism, pantheism, and fatalism.

It is assumed, for this view necessitates it, that the wine of miracle was the same as the wine of nature, the wine of the cluster, holy and life-giving, the type of all nourishment, and the type of salvation. The wine of art is not this. It represents evil rather than good. It is better fitted to typify destruction than creation. It is less a making than an unmaking. Alcohol is unmade sugar. Men brand it poison. The Bible furnishes many examples of the evil following its use.

Thus far we have limited ourselves to asserting that Christ did not make intoxicating wine; whether he ever drank it is another question. Here, too, his character is everything — far more than doubtful philology. Anything he drank must, we know, have been a safe and unhurtful beverage, wherein there was no "excess." We are not permitted to suppose that the Saviour from sin was an example of sin; that he who taught self-denial practised self-indulgence. Rather must we believe that every meal he ate was a lesson of temperance. He, knowing what is in man, the liability of the best to fall, ceased not to warn against a vain self-confidence and a false security. "Simon, Simon, behold, Satan hath desired to have you that he may sift you as wheat; but I have prayed for thee that thy faith fail not." "Pray that ye enter not into temptation." That the wine of communion was azymous wine, new wine, sweet and sacred, made the festal token of a heavenly renewal of divine fellowship, is proved by his own words: "I will nor drink henceforth of this fruit of the vine until that day when I drink it new [*kainon*] with you in my Father's kingdom."

It has been affirmed that all points in dispute have their final answers in the settlement of the one question: "Does 'wine,' standing alone, mean, as is claimed, only and always the juice of the grape fermented, and never the juice of the grape unfermented? and was the same made and drunk by Christ and used by

him as one of the elements of the last supper?" The pivot evidently on which everything turns are the words, "only and always," so that if it can be shown in a single instance that the word "wine" uncoupled with "new" is clearly used anywhere in the Bible in the sense of "new wine" or "must," the learning which denies it goes for nothing, and the whole argument based on that erroneous assumption falls to the ground.

Must, as defined in all the dictionaries, is "new wine." Beyond all question *oinos neos*, in Greek, answers to *vinum mustum* in Latin, and *new wine* in English, and all refer to the unfermented juice of the grape. In Luther's translation, wherever *oinos neos* occurs in the New Testament, it is invariably rendered must. Must is from the Latin *mustus*, new, fresh, with *vinum* understood, and the Imperial Dictionary defines it to be "new wine, wine pressed from the grape, but not fermented." In similar terms it is defined in all the languages of Europe. To say that new wine is not wine is as absurd as to say that a new bottle is not a bottle. A thing is known by what it is called. It is mere trifling to say that what has the perpetual sanction of the highest literary and scientific authorities is unwarranted and incorrect. It is true that it is not wine in the sense of fermented wine, but it is called wine nevertheless; and my purpose is to produce undoubted examples from the New Testament where *oinos* is used in the place and in the sense of *oinos neos*, *i. e.*, must.

In Matt. 9:17, we read: "Neither do men put new wine [*oinon neon*] into old bottles, else the bottles ["old" omitted] break, and the wine [*oinos*, alone, with *neos* omitted] runneth out." In the parallel passage in Mark 2:22, there are the same omissions in the second clause of the verse. In Luke it is "new wine" in both places, thus confirming the identity of the two. If *oinos neos* here means, as is admitted it does, must, then *oinos* inevitably means must likewise, seeing the two indisputably refer to one and the same thing. When *neos* (new) was no longer needed for definition, it was dropped, and only the general or generic term "wine" was retained. It was in obedience to the same law of language that the defining adjectives "old" and "new," applied to bottles, were dropped after they had served their purpose.

What now is wanted to the completeness and absoluteness of the proof? Here we have the Holy Ghost for a witness, and a divine example of *usus loquendi*, clearly showing that *oinos* is properly used to denote the unfermented grape juice, without the qualifying epithet *neos*, as well as with it. The proof is certain, contemporaneous, positive, inspired, and infallible; not to be gainsaid or questioned; repeated by two evangelists and fortified by a third — proof drawn directly from the holy Gospels themselves, and Christ's own words.

We may properly stop here without adding a single word. The proof adduced is of the simplest kind, needing for its full appreciation no learning beyond the ability to spell, yet so conclusive that I can not doubt that it would be accepted as such by any court in Christendom. I, for my part, would not ask to have the title to my own house and grounds supported by stronger proof of ownership.

"FOREIGN BODIES" IN THE ALIMENTARY CANAL OF INFANTS.

BY KATE LINDSAY, M. D.

At birth the digestive organs of the infant are only partially completed as to functional capabilities, and consequently are unable to digest any food except that which has been specially prepared, either in nature's own laboratory,— the mother's breast — or by an artificial process. The first is by far the best, for it was provided by an all-wise Creator; but the latter sometimes becomes a necessity, for various reasons.

In considering the diet of the infant, there are many things to be taken into account. One of the first things to receive attention when the mother is nursing her own child, is the quality of her milk. It is a well-established fact that the mother's diet, dress, exercise, mental and moral sentiments and conditions, and her outward surroundings all have a decided influence on the milk secretion. Under unfavorable conditions the milk may become a virulent poison to the child. When it is lacking in either quantity or quality, it can be raised to the normal standard by correcting the habits of the mother, regulating her diet, changing her sanitary environments, and impressing upon her the necessity of controlling her temper and emotions.

But these dangers are not the only ones that threaten the peace of the baby's digestive organs. Through ignorance many substances are introduced into the stomach which are really foreign bodies, in the sense that they are not appropriate to it. Cane-sugar, cracker pap, castor-oil, fennel-seed tea, catnip tea, goose-oil, honey, sirup, with all the various preparations called "infants' food" and the many dilutions of cow's milk,— when one sums up all the things fed to the baby within the first three days of its life, he wonders that the little one has any digestive ability at all. This is no fancy picture: the writer has seen all these vile concoctions given, and that in cases where the mother had plenty of milk, and never expected to do otherwise than nurse the little one naturally.

Do you ask why such unsuitable things were fed to the infant of only a few hours? — Because it was feared it would starve before the mother's milk came, and would be sick if it did not have some physic to carry off the meconium from the bowels,— as if the Creator had made a mistake, and failed to provide for the young human animal, as well as for others lower in the scale of being, and so of less importance. But no such error was made. Nature has provided in the colostrum just the food needed during the first few days of life, before the digestive organs have developed sufficiently to be able to take care of even the mother's milk. This substance is secreted during the period immediately preceding childbirth. It is both a food and a laxative, and is perfectly adapted to the infantile organs for which it was designed. So if the baby is put to the breast as soon as the mother is sufficiently rested after its birth, and fed nothing else but pure boiled water, there will be no danger of its digestive organs being ruined.

While mother's milk is the true and only natural food for infants, it sometimes becomes necessary, for one cause or another, to resort to other methods of feeding. In this case the wet-nurse is the best substitute, if one can be found

whose milk agrees with the baby ; but, unfortunately, the services of a healthy wet-nurse are not easily obtained. This being the case, the only thing that can be done is to take mother's milk as a model, and compound an artificial substitute as nearly like it as possible.

The first thing to be sought for in manufacturing an artificial infant food is to secure the proper proportion of food elements. According to the most recent analysis, there should be 12.65 parts of solids to 87.35 parts of water. Cow's milk contains rather more solids than this,— about thirteen and a small fraction parts in one hundred parts of milk. It also differs very much in the proportions of the food elements, human milk averaging four parts fat, seven parts sugar, and one and five-tenths parts curds or albuminoids ; while cow's milk averages four parts fat, four and three-tenths parts sugar, and four parts albuminoids. Of mineral salts, human milk contains, on an average, fifteen-hundredths parts to one hundred ; while cow's milk averages seventy-six-hundredths parts. From this it will be observed that cow's milk contains an excess of curd and salts, and is deficient in sugar. The curd-forming element found in cow's milk is suited to the young bovine, but not to the delicate organs of the human infant. Dilution with water will reduce the proportion of albuminoids, but it will at the same time reduce all the other elements ; and as the proportion of sugar is already too small and of fats not in excess, some measures must be taken to supply the lack in these two elements.

The first food given to a child whose mother is unable to nurse it, even for the first three days, should contain only a very small amount of solids, and those in an easily soluble form. In the first secretion of the breast, the colostrum, there seems to be much less fat and more sugar of milk, also more tissue forming elements, or albumen, than when the secretion has become fully established. Then there is more casein present. The food for the first three days, therefore, should be only some simple sterilized preparation of cow's milk, sweetened with milk sugar; or if any farinaceous food is given, it should have the starchy elements made soluble by predigestion, which is accomplished by long-continued boiling, and still more fully by malting. Until the bowels are free from the dark-colored discharges, or at least for the first three days, the infant will need drink much oftener than food, so but little of the solid elements need to enter into the composition of the artificial substitute. But even after the little one is ready for the mother's milk, in cases where she nurses it, there is no provision in the stomach for digesting starch, all the foods known as carbohydrates being represented by the sugar of milk, which is very soluble. The hard curds of cow's milk are also wanting in the solubility found in the light, flakey curds of human milk.

It is not enough to see that the little one is given food at regular intervals, and that which contains just the right proportion of each food element; but the food must also be in a form in which the delicate digestive organs can take care of it and assimilate it properly. In other words, the one preparing the artificial food must do the work of nature in making the food suitable to the age and capacity of the child. This means that not only must the compound contain the proper proportion of solids to water, but the solids must be in such a form that the digestive organs can prepare them for absorption and tissue building.

Dr. Rotch gives several tables for the forming of substitutes for human milk from ordinary cow's milk, with directions for filtering, sterilizing, selecting, and

keeping the milk for infant food. His directions are as follows: Take the milk from a herd of cows in preference to one animal. Be sure that the hands of the milker, the udder, the milk vessels, the stable, and the cow are all clean. Healthy milk, whether human or from the lower animals, is an aseptic fluid, and becomes contaminated with disease germs only when it is brought in contact with them externally. The doctor further directs that a quart of this mixed milk be taken and strained, or, if it be filled with dust and other foreign matters, filtered through cotton-wool, and set away in ice-water and salt to cool for six hours, being covered for the first fifteen minutes with a freshly boiled clean cloth, to allow the escape of the animal heat and odors. It is then sealed up, like a can of fruit. By the end of the six hours the cream will have risen to the top of the jar, and the milk will be at the bottom. To separate the two, siphon the milk out with a bent glass tube one-half inch in diameter, as follows: —

Fill the tube with hot water, and holding the thumb tightly over one end, insert the other in the jar, letting it reach almost to the bottom. The outer end of the tube should hang over the edge, and reach a little below the bottom of the jar. Under this a clean sterile vessel should be placed to receive the milk. Remove the thumb from the tube, and the water will run out, followed by the milk. As soon as all the milk has been withdrawn from the jar, remove the tube, but leave the cream.

To make the artificial compound, there will be needed, besides this milk and cream, clean, sterilized water, sugar of milk, and lime-water. Having all the elements at hand, the next step is to mix them so that they will form a food having the proper proportion of each food element in a digestible form. To make a food corresponding with average human milk, take eight ounces of cream from the jar, one ounce of lime-water, six drams of sugar of milk, and eleven ounces of water, making a twenty-ounce mixture. If more casein is needed, an ounce or two of milk may take the place of as much cream. Common sense must be used in deciding the amount of each element required to suit individual cases. In many cases experiments must be made, as some children require more casein in the food, and others more fat, in proportion to the other food constituents.

The next procedure is to sterilize this food. To do this, place it in aseptic glass tubes or bottles, putting in each bottle as much as will be used for one feeding. It is well to provide at one time enough to supply the feedings for twenty-four hours. Stopper the bottles with cotton-wool, and set in a sterilizer. Heat to 170° F., then let it drop to 168°, and keep at that temperature for thirty minutes. Then set away in the ice-chest till wanted for use. The ice-chest is almost a necessity to keep the food cool and free from fermentation.

It must be remembered that the one who compounds an infant's food must, to be successful, heed certain principles: First, the food must be clean and aseptic; second, a sterile fluid is not necessarily a clean fluid. No amount of boiling will ever purify water or milk that is full of barnyard or other dirt. It may destroy all the bacteria and germs, but that will not make it clean. If no way can be devised whereby cleanliness can be preserved in the milking, the best way to cleanse the milk is to filter it through cotton-wool. To do this, take a large glass funnel, pack the tube for two or three inches with absorbent cotton, being sure the cotton is packed evenly around the sides, place in a glass milk jar, and pour in the milk to be filtered while it is

yet warm. This will strain out not only dirt, but a great many germs as well. One bacteriologist claims that at least one half the germs may be thus gotten rid of. A small portion of the fat may be strained out by this process, but the deficiency can easily be supplied from the sterilized cream on hand. The sterilizing can be done in any double boiler, or in a vessel set inside another filled with water. This food is but an approximation of the ideal food for an infant.

When it is time to feed the baby, take one tube or bottle from the ice-chest, and heat it to 96° or 98° F. Then turn the compound into a clean nursing bottle with a clean, sterilized nipple, without a rubber tube; or the nipple may be put on the same bottle in which the food was kept. The same nipple should not be used more than a few days; then it is best to destroy it. A stock should always be kept on hand where there is a bottle-fed baby to be cared for.

The quantity of food to be given at each meal is the next point to be considered. This should be regulated to correspond with the age, size, and digestive capacity of the little one. For the first week, the quantity should not exceed six to eight teaspoonfuls; after that the quantity may be increased daily until at the end of one month it is twice as much as at first.

The great prevalence of dilatation of the stomach makes it very important that the cause of the weakened condition of the muscles be ascertained. The distention is sometimes so great that pockets are formed in the mucous membrane, which retain the food until it ferments, generating poisons and occasioning a great deal of trouble. The writer believes that the beginnings of this trouble lie far back in the days of infancy, when the little stomach was overburdened with foreign substances, or forced to take too much of even its legitimate food. It is proverbial that a hand-fed baby always has a large abdomen, which means that some organ is overstretched, either by too large meals or by foul gases generated from spoiled food in the alimentary canal.

This leads us to consider how large a baby's stomach is. By actual measurement it has been found that at birth the human stomach will hold from six to eight teaspoonfuls. The capacity depends somewhat on the size of the child, small, premature children needing less than six teaspoonfuls at a meal. If only the exact amount is put in the bottle for each feeding, there can be no danger of overfeeding; for when the food is all gone, the bottle can be removed. The baby should never be allowed to suck the empty bottle or anything else after a meal is finished. If drowsy, it should be gently laid down to sleep; or if wakeful and inclined to play, it may be amused, so that the habit of putting things in its mouth except at the regular meal-time will never be formed.

As the infant grows older, its stomach will hold more food without distention. At the end of the fourth week, an average-sized stomach will hold two ounces, or sixteen teaspoonfuls; at two months, it can take three ounces; from three months to twelve months the capacity of the stomach will increase from one third to one half an ounce for each month of life, so that when it is ten months or a year old, it can take half a pint at each meal. This increase should not be made all at once, but gradually. The way the stomach itself treats the food is a fair indication of its ability to digest more or less. If it rejects a portion as soon as it is swallowed, or if it passes on a portion through the alimentary canal in the form of hard, undigested curds, the nurse may be sure there is something wrong. Any

excess of food or drink at a meal is treated as a foreign body, and is promptly rejected by the overloaded stomach. Consult the scales, and see if they record the normal gain of an ounce a day. Notice how the baby sleeps, if it is happy and playful when made comfortable. If the little one cries and frets all the time, as if it wanted something it could not get, there is something wrong, which should be looked into immediately.

During the first month the baby should be fed every two hours; at the end of the second month, every two and one-half hours; from three to six months, every three hours. From this time the number of feedings should be decreased until at the end of the year only four meals a day are allowed. Up to two months the baby may need to be fed once at night, any time between nine and four or five o'clock in the morning; after that time it should be taught to sleep uninterruptedly, until four or five in the morning. If it should waken and call for something, give it a drink of water.

EDUCATED HOUSEKEEPERS NEEDED.

BY MRS. E. E. KELLOGG.

MUCH has been said and written in condemnation of the too common system of education which deals with the head only, leaving the hand untrained, and results in graduating young ladies "too highly accomplished" to be capable of engaging in the practical duties of life; yet too much can hardly be said in disapproval of the contracted views and apparent lack of right ideas respecting individual responsibilities which lead so many women to look with contempt and dislike upon that department of labor on which, more than any other, depend the health and happiness of the family,—that of housework. "Home making," which in its highest sense is one of the most truly elevated and noble of all human pursuits, necessarily involves a proficiency in the art of housekeeping. By "housekeeping," we mean not simply a knowledge of the various routine duties usually devolving upon the housewife, the making of beds, sweeping of floors, and cooking of dinners; but a knowledge and practise of household labor in accordance with scientific principles, which makes every department of housework a philosophic study, and every household operation replete with interest.

Doubtless much of the aversion to housework arises from a feeling that it is mere drudgery, needing only physical exertion, and associated with weariness and pain; but if we consider that the health and character of the inmates of every home are dependent in the greatest degree upon the cleanliness of their surroundings, the wholesomeness of their food, together with many other conditions belonging to the province of the housewife, housework will lose its aspect of drudgery, and become at once one of the most noble and responsible duties in life's great field of action. The very knowledge of this responsibility should suggest the need of a special qualification, a careful and thorough preparation for the work.

It takes years of hard study to acquire sufficient perfection to succeed in any other department of life, but housekeeping is too generally looked upon as something that needs no special fitness, and can be acquired without much effort at any time; yet for no other pursuit is a preparation so greatly needed, nor are the

requirements so varied and important. The person should be ridiculed who professes to be able to read a case in court without a knowledge of law; but we heard an intelligent and talented lady, not long ago, boast that she knew nothing at all about housework, but thought if she ever had any need to learn, a little common sense and a cook-book would be all that would be necessary. If a knowledge of Blackstone is required to dispense justice, why should not a special qualification be deemed necessary for administering the equally important service of selecting and preparing the very elements on which we depend for soundness of body and mind?

Proper food is the largest component in the health and good temper of childhood, the correct habits of youth, and the strength and endurance of later years; and there is abundant evidence that the great prevalence of intemperance, with its accompanying evils, is very largely due to the baneful effects of the indigestible, innutritious viands which serve as food for a large majority of the people. How, then, can we underrate the importance of the work of housekeeping, or the need of a particular preparation for its duties?

It is often said of a person who finishes a college course, only to take up the rôle of housekeeping, that "she has just thrown away her education." This is indeed a mistake; for in no other pursuit ought an education to be brought into more constant requisition, than in housekeeping. A knowledge of scientific principles and physiological laws is eminently essential. Indeed, there is scarcely any branch of knowledge which may not be made to contribute valuable aid in the care of a home and the comfort and health of its inmates.

Household labor, done with thought and conscience, is a grand and noble calling. Abraham's wife prepared with her own hands the meal for the strangers, not knowing that she was entertaining angels, and Solomon praises above all others the woman who "worketh willingly with her hands." Homer sang of princesses busy in domestic service, and since that time the daughters of royal blood and ladies of rank have often deemed it their highest prerogative to engage in this art of arts. No sphere of usefulness is broader or more productive of glorious results than that of the true home worker.

BATTLE CREEK SANITARIUM QUESTION BOX.

BY J. H. KELLOGG, M. D.

1. WHY should one be hungry after getting very wet?

Ans.— Because making the body wet stimulates the skin, and thereby increases the appetite. This is the effect of hydrotherapy. The shower-bath in the morning before breakfast acts as a tonic to the skin, and creates a demand for food. It also increases the production of gastric juice, and hence is especially adapted to persons who have slow digestion.

2. What is the cause of asthma? and can it be cured if taken in its first stages?

Ans.— There are two kinds of asthma. One is caused by disease of the lungs and catarrh of the bronchial tubes; the other arises from disease of the abdominal sympathetic nerve-centers. Both are incurable.

3. Does a fruit diet make the blood acid, and a vegetarian diet make it alkaline?

Ans.— No, the acids of fruits become alkaline before entering the blood. The idea is current that acids have a tendency to produce rheumatism, and that persons suffering from rheumatism or a predisposition to it, must avoid them. This is a great mistake.

4. Are fruit and eggs a good combination?

Ans.— Not always. Raw eggs beaten up with fruit juice make a fair combination, but boiled eggs, which require several hours for digestion, are a bad combination for a weak stomach. If eggs are properly cooked, they may be used with vegetables.

5. What treatment would you recommend for neuralgia of the teeth when they are all sound?

Ans.— The trouble is not neuralgia of the teeth, but of the fifth nerve. The disease is in the nerve, and it is this that must be treated. Sometimes the difficulty originates in the abdominal sympathetic nerve. The majority of cases may be relieved by applications of heat, proper diet, improvement of the general health, massage, cold and warm baths, out-of-door exercise. Anything that will build up the general health is valuable.

6. Is fruit a suitable food for a person afflicted with rheumatism?

Ans.— Yes, it is excellent, because it stimulates the kidneys to activity in the elimination of poisons.

7. Is there anything which can be done to prevent one from taking tuberculosis or consumption from the person with whom he rooms and associates continually?

Ans.— Yes. The preventive means is to watch over the consumptive, and collect on a paper or cloth every particle of sputum that he raises and expectorates, and burn it. If there is not a particle of it left, there will be no contagion. There will be no trouble from this source so long as there is no conversion of the sputum into dust.

8. To what extent are blackberry seeds and other berry seeds injurious?

Ans.— These seeds are simply wood, and are not in any way nutritious. They are dangerous only when there is ulceration of the stomach or an inflamed condition of that organ, as in cases of gastric or intestinal catarrh. Then they have an irritating effect, and should not be swallowed.

9. How long does it take to get rid of the poisons which have accumulated in the body as the result of meat-eating?

Ans.— That depends upon the amount of meat that has been eaten. If an individual has eaten meat all his life, or for a great many years, until the whole system is saturated with poison, it requires considerable time for the tissues to be purified. Purification must take place from within. Meat-eating produces a kind of poison that must be washed out of the system by a process of elimination that is necessarily slow. When the whole system has become saturated with these poisons, so that the skin is sallow, and the liver completely swamped with the effete matters brought to it to be destroyed and thrown off, it requires from six months to a year of constant effort to cleanse the system.

10. Do you recommend out-of-door exercise before breakfast?

Ans.— Yes, if one is strong enough. But the man who is so unfortunate as to be a dyspeptic must be careful not to exercise too vigorously before he has had his breakfast. He must conserve his energy for the purpose of digesting his food. Very weak and feeble people should not try the early exercise at all. But if one is too weak to walk, he can lie on a cot or sit in a chair where he can take

deep breaths of fresh air, and thus give his lungs and liver exercise.

11. Does the normal stomach contain germs?

Ans. — Yes, most of the time, but during a meal and the digestion of it, these germs are destroyed. The stomach is able to exterminate germs and to keep itself clean. Every part of the body has the power to cleanse and purify itself. In healthy persons germs do not grow on the skin, in the nose and throat, or in the lungs. They do not grow on a flower when it is alive, or on living foliage. It is in the deteriorated and diseased body that has lost its power to defend itself, that germs take root and multiply.

12. What is the cause of a pain on the right side of the abdomen when the stomach is empty, and on the left side just after a meal?

Ans. — Suppose we begin the answer of this question with the pain in the left side after a meal. It was probably a heavy meal, and now drags upon the stomach, weighing it down; when the meal is just eaten, it lies on the left side. Very likely the stomach is prolapsed, and there is a strain upon the sympathetic nerves. When the food is turned out of the stomach into the small intestines, it is sometimes very strongly acid, and causes an irritation of the tissues below the cardiac orifice, thus giving rise to discomfort or pain on the right side.

13. Is it right to murder a fly, a mosquito, or a flea?

Ans. — Here is some one who wishes to hold me up to ridicule because I do not believe in taking life. I agree with Pythagoras, that —

> "To kill man-killers man hath lawful power,
> But not the extended license to devour."

Now while I would kill a fly as a dangerous creature, I would not eat him. Flies are noxious insects. They carry contagion. The flyblow of the fly often contains infectious germs. Germs of consumption are sometimes found in the stomach of the fly. It has been discovered in hospitals that flies carry erysipelas from one ward to another. Mosquitoes have long been suspected of carrying yellow fever, and it is positively known that they have been the means of introducing parasites into the blood. Fleas are also dangerous; they may inflict fatal wounds. These insects are carnivorous, and on that account it is proper to exterminate them. We kill creatures that kill other creatures; that is a law of nature. If a lion should come rushing into my house, I would kill him if I could before he destroyed my little children. That would be a perfectly right thing to do. The lion is a rapacious beast; he has the same spirit that actuates the civilized man — he is eager to catch some animal and eat it. But what shall we say of murdering an animal like the calf, the cow, or the sheep? These timid, gentle, humble creatures are the animals that we kill without questioning, ruthlessly and cruelly, and then we eat them.

HYGIENE THROUGH THE EYES OF LITTLE FOLKS.

BY MARY HENRY ROSSITER.

THE simplicity, yet the shrewdness, the ignorance, yet the wisdom, the pathos and the wit, of little children give a never-failing charm to their doings and sayings. The truest answer to the question, "Who can tell what a baby thinks?" is usually "the baby;" for very little children are constantly telling what they think, and revealing the most unexpected lines of reasoning. The dear old grandmother who

was trying to persuade her wee grandson to have his face washed, and finally urged, "Why, Harry, grandma has washed her face three times a day ever since she was a little girl," was hardly prepared for his prompt conclusion, "Yes, grandma, and just see how it's shrunk."

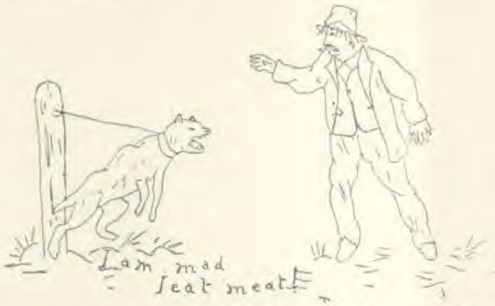
A little vegetarian girl, six years old, was taken to the city with her father one day. She had never seen any meat, raw or cooked, but was familiar with all kinds of fruit. As they passed a meat market where some strings of sausages were hanging out in front, she stopped, and after looking at them in a puzzled way a moment, started on with the question, "Papa, those bananas are n't good, are they?"

This same little girl, when about ten years old, surprised her parents one morning by submitting for their inspection the accompanying original sketch, which shows her ability to draw inferences as well as dogs.

A famous educator who thinks it is the ignorance or neglect of parents and teachers that causes most of the so-called dulness in children, tells of two little brothers who were sent to school. The older one could not or would not learn. Day after day he sat at his desk perfectly obedient, perfectly stupid — so they said. The school children laughed at him, the teacher rebuked him, his mother scolded him, for letting his brother, two years younger, pass far ahead of him. What that little fellow suffered was pitiful — for even dull children have feelings. Finally it occurred to some one that perhaps that boy ought to have a physical examination. It was found that his eyes were defective, that he had a serious stigmatism and other troubles. After his eyes were fitted with glasses, and he took up his book again, — that book that had caused him so much sorrow, — as he looked at the page, he seemed bewildered. "Oh, oh," he said, "is that the way the letters always look to Willie?"

A little girl who had evidently had home training of the ancient order, complained to her teacher, "I don't want you to tell me any more about my inside. I don't like it, and mama says it 's rude."

It hardly seems credible, but the following is a perfectly true story of a little girl in Pennsylvania: She attended Sunday-school in a small town, but the other members of her class complained to the teacher that she was disagreeably lacking in cleanliness. The teacher, after a gentle and interested talk with her, told her that if she would take a whole bath



once a week until Christmas, she would give her a new hat. The little girl said doubtfully, "I will if ma 'll let me. But I took a bath once, and I caught such an awful cold that she would n't never let me take another."

Jimmie had learned at school how alcohol retards digestion, and that raw meat in alcohol is changed until it becomes pickled. Soon afterward he was sick from overeating, and his mother wished him to take some brandy and water. "Why, mama," he exclaimed reproachfully, "don't you know, if I took that, it would make a *pickle* of me. It 's got alcohol in it."

A lady who had been at a sanitarium where health foods are used, took some of the foods home with her. She tried to persuade her little grandson, four years old, to eat granola, telling him it would

make him strong. For some time he could not be induced to eat it. But one day he came to the table demanding "grow," as he called granola, and almost made a meal of it. After that he would call for "grow," and insist on eating it regularly.

His grandmother asked him why he liked granola, but for a while she could not get the reason. Finally, he came up to her one day in a confidential manner, and said: "Grandma, I 'll tell you why I eat 'grow,' if you won't tell anybody. There was a boy sassed me on the street one day, and I 'm going to get strong enough to lick him."

.... Seasonable Bills of Fare

BREAKFAST NO. 1

Granose Flakes with Fresh Strawberries
Macaroni with Egg Sauce
Currant Puffs
Dried Apple Toast

BREAKFAST NO. 2

Fresh Fruit
Crystal Wheat with Strawberries
Asparagus Toast
Breakfast Rolls

DINNER NO. 1

Asparagus Soup
Nuttose Hash Spinach
Rice
Savory Lentils
Brown Bread
Strawberry Manioca Mold
Sliced Pineapple

DINNER NO. 2

Green Pea Soup
New Potatoes
Stewed Cabbage
Pease Cakes with Tomato Sauce
Toasted Granose Biscuit with Nuttolene
Cream Crisps with Fresh Strawberries

RECIPES.

Raspberry Manioca Mold.— Heat a pint of water, and when boiling, sprinkle into it four scant tablespoonfuls of manioca and cook for ten minutes, or until transparent, stirring continually. When transparent and thickened, remove from the fire, and add a tablespoonful of lemon-juice and one cup of sugar. Place a layer of the cooked manioca in the bottom of a pudding-dish, add a layer of freshly picked red raspberries, then another of the manioca, filling the dish in alternate layers, with one of manioca for the top. Set away in some cool place until well molded. Serve in slices with cream flavored with rose. Other fresh berries may be used instead of raspberries.

Asparagus Soup.— Wash two bundles of fresh asparagus carefully, and cut into small pieces. Put to cook in a quart of boiling water, and simmer gently till perfectly tender, when there should remain about a pint of the liquor. Turn into a colander, and rub all through except the hard portion. To a pint of asparagus mixture add salt and one cup of thin cream and a pint of milk; boil up for a few minutes, and serve.

Green Pea Soup.— Gently simmer two

quarts of shelled peas in sufficient water to cook, but leaving almost no juice when tender. Rub through a colander, moistening, if necessary, with a little cold milk. Add to the sifted peas an equal quantity of rich milk and a small onion cut in halves. Boil all together five or ten minutes until the soup is delicately flavored, then skim out the onion; add salt if desired, and serve. If preferred, a half cup of thin cream may be added just before serving. Celery may be used in place of the onion, or both may be omitted.

Apple Toast.— Fresh, fine-flavored apples stewed in a small quantity of water, rubbed through a colander, sweetened, then cooked in a granite-ware dish in a slow oven until quite dry, make a nice dressing for toast. Baked sweet or sour apples, rubbed through a colander to remove cores and skins, are excellent. Dried apples, thoroughly cooked, sweetened, and rubbed through a colander, are also excellent for this purpose. Soften the slices of zwieback with hot liquid, and serve with a spoonful or two on each slice. If desired, the apple may be flavored with a little pineapple, lemon, or mixed with grape, cranberry, or apricot, thus making a number of different toasts.

New Potatoes.— When potatoes are young and freshly gathered, the skins are easily removed by taking each one at a time in a coarse cloth and rubbing it; a little coarse salt used in the cloth will be found serviceable. If nearly ripe, scrape with a blunt knife, wash very clean, and rinse in cold water. Boiling is the best method of cooking new potatoes. Use only sufficient water to cover, and boil till tender. Drain thoroughly, cover closely with a clean cloth, and dry before serving.

Savory Lentils.—Take equal quantities of cooked brown lentils that have been rubbed through a colander to remove the skins, and the crumbs of unfermented bread. Moisten with a little rich milk or cream, season with salt and a very little powdered sage, pour into a baking-dish and bake until well browned in a moderate oven. A tomato sauce makes a nice accompaniment. A meal prepared by rubbing chopped English-walnut meats through a colander, added to the savory lentils, in the proportion of one cup of nut meal to the pint of lentils, just before being put in the oven to brown, makes a very palatable dish. When the nut meal is used, water may be used to moisten the lentils, if preferred.

PATRIOTISM AND — PATRIOTISM.

"In times of war prepare for peace." Tennyson long ago made a scathing arraignment of a Peace that can sit under her olive —

"When the poor are hoveled and hustled together, each sex, like swine,

* * * * * * *

While chalk and alum and plaster are sold to the poor for bread,
And the spirit of murder works in the very means of life."

In the same poem he says again,—

"And lust of gain, in the spirit of Cain, is it better or worse
Than the heart of the citizen, hissing in war on his own hearthstone?"

This might well have been the supplementary text of a recent sermon on patriotism by Rev. Frank Crane, of Chicago, in which he said: —

"Those who are now burning to give their services to the nation, to raise regiments and lead battalions, should be given due credit. Any act that shows a

love of our country should not be evil spoken of. But I merely wish to call the attention of some of these noble men to a little work they could have been doing all along for their native land had they been so disposed. The dictionary defines patriotism as being 'zealous and unselfish devotion to the service of one's country.' Here, for instance, are public officials, who shall be nameless, who have volunteered the services of themselves and their State to eat up Spaniards, yet who recently have been in the thick of the most disgraceful attempts to debauch and plunder the people who elected them to office. They might have intervened to stop the most colossal bribery and corruption of politics had they so desired; they did not; they were poor; they are rich.

"While glorious statesmen were champing the bit to get into the fore of battle, a little company of men and women were opening a social settlement over in the Gad's hill district of Chicago; going to live and teach and practise unselfishness among the poor. What about them? They wave no flags, shoot no bullets. They are patriots, however.

"The other day I read this statement from J. D. Roth, an ex-chaplain of the penitentiary: —

"'Experts say there are at large in our land scores of thousands — some put the figures at 200,000 — of professional criminals who live at the expense of the public. There are also multitudes of vagrant and vicious ones who gain a livelihood by theft or beggary. Few of them are wage-earners, and all are a menace to the public only in a less degree than the professionals. Their abodes, if they have any, swarm with children who begin life with inherited moral and physical taint. They imbibe impurity with their mother's milk. The foul air they breathe deforms their bodies, and the companionship of thieves and drunkards and the obscene and blasphemous conversation which is ever dropping into their ears leave them without any correct ideas on questions of morality. The evil that is born in them is developed with their eyes, and they show themselves apt pupils in every species of wickedness.'

"Here is an army worse than Spaniards; they are not across the ocean, they are mixed among us. Why don't some of our warriors go out to fight them? Alas! the reason is too plain. We can overcome this army only as we overcome ourselves. They are to be subdued only by daily righteousness, liberality, purity, and self-denial by us. We can not meet them with the blare of trumpets and beating of tom-toms, but only by love and service. We can not utilize against them the cheap fury of race hatred or party zeal, but our only enthusiasm must be a genuine desire to help men.

"Let me insinuate no reflection upon those who have gone to war for their country's sake; but let me remind all that the danger to this radiant republic lies not in hostile nations abroad, but in inward rottenness at home.

"It is always easier to die for a noble purpose than to live for it. If our country calls us to go and fight a foreign foe, there is no doubt that plenty will respond. But the deeper, silent cry of agony of our dear land is for men and women who will give life and money to insure clean politics and honest councils, legislatures, and senates, — for men and women who will give up, not their blood, but their greed and base ambition and petty pride and dishonest practises, in order that wealth may not be able to destroy a virtuous people, and in order that the swarming criminal classes may be lifted by persistent, devoted effort into a true citizenship.

"Let us redefine patriotism. It has been a willingness to go out with a brass band and kill somebody for our country's

sake. Let it be also willingness to stay at home and save somebody for our country's sake."

Plants and Fruits in Cuba.

There are no roads in Cuba, and vegetation is so rank that even the rocks are covered by grass, vines, any living thing that can put out a leaf under a tropical sun and moisture.

One interesting plant common throughout the island, belongs to the family of Rhus Toxicodendron. Its effect upon susceptible persons, in causing an acute dermatitis, is precisely like that caused by the poison ivy. It is found all over the island, and is easily recognized. A great variety of tropical fruits usually abound, but as the helpless poor's destroyer, Weyler, has exterminated trees as well as men, fruit as well as other food is now scarce.

There is one plant, however, which is still abundant, and that is the sugar-cane. This is not eaten until the fall, when it has reached its full maturity. Sugar-cane in the spring is sweet, but watery, containing a large amount of a glutinous substance conducive to intestinal disturbances. Even the natives avoid it on this account.

There is one wild fruit in the island which even Weyler has probably been unable to destroy, and that is the guava. It ripens about August. It is a wholesome and delicious fruit, but on account of the great number of seeds it must be eaten with caution. The green fruit contains a large percentage of tannic acid, and is often eaten by the natives to produce astringent effects.

A Champion Wrestler's Experience.

There is good authority for the following story of Mr. Battiste, the champion wrestler of the United States, who, while in training for a match a few years ago, found himself in an unpleasant situation. It was impossible to get his weight below one hundred and ninety-six pounds unless he lived on meat, and then he became sick. He was at his wits' end to know what to do, for he had to meet his antagonist soon, and yet he was making no progress in his training. Finally he consulted a skilled dietician, and was told to try a diet of graham crackers, granola, and fruits. He did so, and very soon his weight fell to one hundred and fifty pounds. His trainer was frightened, but was persuaded to persevere in the new regimen a short time longer. In two or three weeks more Mr. Battiste had regained his normal weight, and his muscles had increased in strength. When the match came off, he proved by far the lighter and stronger man, and won at the very first encounter. This is a practical illustration of the nutritive value of a vegetarian diet. The most nutritious meat to be found has less than one third the nutritive value of beans. The same is true as to flesh and wheat. A pound of whole-wheat flour is worth three pounds of beefsteak.

It is well known that nerve-force comes to its climax in women. In strong and powerful women, where the nerves are well sheathed, this puts them on a pinnacle as to the highest forces by which spirit controls matter, their nerve-force being the largest that any organism discloses in relation to their muscular and other powers. In weak women, this superabundant nerve-force, uncontrolled, bears down the other forces of the body, just as the mighty engine jars to pieces the weak house in which it may be placed. Reason teaches us that this is nothing against the engine. It only shows that we must build up the house in which it is environed so that the due proportion between them may be maintained.—*Frances E. Willard.*

EDITORIAL.

SELF-REFORM is a much-neglected branch of physical philanthropy. We are too busy pulling at the mote in our brother's eye. The best way to bring about general "health reform" is for every man to go to work upon his own body. Only when that has been thoroughly renovated, and brought into harmony with natural law, can he join effectively in the general crusade.

MODERN discovery tells us that the air we breathe, the water we drink, the food we eat, the clothes we wear, the people we meet, the papers we read, are all infested with a terrible vegetable, the germ. We might almost sigh for our former happy ignorance of the perils that surround us, had not the establishment of the throne of the microbe been accompanied by the knowledge that if the active forces of the body be strengthened, if its power of resistance be sufficiently increased, if it can be restored to its natural vigor, we may effectually withstand the most insidious attacks. The man who is perfectly sound and well, and who takes good care of himself, lives above the level of germs and parasites. Although he can not keep them out of his system, his body is able to destroy them. His stomach is capable of digesting all sorts of germs. It is the weak and poorly vitalized system that falls a prey to the omnipresent microbe.

WHEN a woman faints in church, almost the first suggestion is, "Cut her corset strings." Everybody knows what the trouble is; the poor creature can not breathe. It is not because the air is so bad that she faints. In that case everybody would be affected. It is because she is so constricted by her clothing that she can not breathe the air that is there. When a man faints in church, who ever heard of the suggestion, "Split up the back of his vest"? There is no such thing as wearing a corset without injury, since we are not made of wood, or stone, or something too hard to be harmed by bandaging. The soft, yielding body that responds to the slightest pressure can not be subjected to any restriction without damage.

THE only difference between a sick man and a well man is that the sick man is the well man in a state of embarrassment. The idea that when a man is sick the relations of life and health to organic and inorganic substances are reversed, is a great mistake. Whatever is good for the sick man is good for the well man, and vice versa. If certain medicines would injure the well man, they will injure the sick man. If any difference should be made, the man who is sick needs food that is more natural than the other. Nature gives us food that is divinely organized. It has a latent power of ministering to the body which it is not possible for man to imitate. The bath that is good for the invalid is also good for the healthy person; it helps to prevent him from becoming sick. The pure diet recommended for the dyspeptic, should be followed by the man who "can digest anything;" it may keep him under that illusion. It is doubtful if a single instance could be cited, except in surgery, where the rational course for a sick man would not be equally rational for the one who is well.

HAVE you ever watched a threshing-machine in operation? If so, you have noticed the clouds of dust arising from the wheat. In a great milling establishment you have probably peeped into the dust-room, and been surprised at the quantity of dust that has been brushed from the grain. But there is nothing really surprising about it. Wheat-fields are usually passed by public roads. During the dry summer season great clouds of dust sweep over them, and the wheat becomes filled with it. The dust of the road is thick with germs. Even after the wheat has

been scoured and cleaned, it carries with it a large number of germs that are hidden in the creases of the kernels. These, by the common methods of making flour, are necessarily ground up with it. Hence the importance of thoroughly baking bread that is made from such flour. In primitive countries bread is never baked in loaves, but always in thin wafers or long narrow rolls. By shaping it in this way, it can be entirely cooked and made perfectly sterile.

THE bodily tissues are more active during sleep than at any other time. Plants grow faster during the night than in the daytime. Corn takes its food from the light, and when darkness comes, this material is elaborated into stalk and ear. The grape-vine feeds upon the light of day, and in the night builds into its tissues the material gathered.

The human body does the same thing. The child grows in proportion as it sleeps. If it can not sleep as much as it should, it will be stunted in size.

The growth of the body is controlled by the great abdominal brain, which is closely associated with the intellectual center. Here the vital activities have in a certain sense their headquarters. Here at night the engineer sits, if you please, and controls the heart, the liver, the stomach, the lungs, the circulation of the blood. This important function of the lumbar ganglia and the solar plexus gave rise, perhaps, to the belief held by eminent physiologists a few centuries ago, and still cherished by the Chinese, that the soul of man resides in his stomach.

This part of the body is more active when we are asleep, because the processes of repair and growth are then taking place. When we are awake, the cerebral brain is dominant, and diverts the energies of the body into its own channels. The brain and the muscles are at work. The great muscular mass of machinery, composing one half the bulk of the body, and the countless brain cells and activities which are constantly on the alert during the waking hours, consume an enormous amount of energy. But when we go to sleep, this source of activity is suspended. The brain is quiet. Now the activities, which build up the tissues, repair damage, and carry off the used-up and worn-out material, have their turn to work.

It is important that during sleep the body should be just as thoroughly alive as when we are awake. But it is a different kind of life. Animal life rules our waking hours, but organic life is supreme when we sleep. The man who takes hypnotics for the purpose of putting himself to sleep, goes down to the brink of death ; he looks into the grave, and it is only necessary for him to go a little farther actually to step into it.

The practise of taking hypnotics is a process of poisoning. The man who swallows a sleeping potion puts himself under the influence of a powerful drug, an overdose of which is capable of destroying his life. Mr. Tyndall died from the effects of taking a hypnotic. His wife gave him a mixture of chloral to induce sleep ; by mistake she administered two teaspoonfuls instead of one, and that giant life went out. It is important for people to understand that these hypnotics are poisons. The sleep that they give is a paralytic sleep ; it is not natural. Under such conditions there is no repair of the tissues, no natural rebuilding of the body. If a person can not sleep naturally, the cause of the sleeplessness must be found and removed. You might as well knock a man senseless with a club as to paralyze him with a drug.

An Interesting Experience.

Mr. Otto Ruetenik, of Cleveland, O., writes us as follows: —

"No salt, no toothache. Not eating salt in my food has given me entire freedom from toothache. I was formerly troubled much with toothache, but since dropping salt entirely, have had no more toothache."

This experience is certainly interesting. We shall be glad to hear from any others who have had a similar experience, or any other experience bearing upon the dietetic use of salt.

MIDSUMMER HYGIENE.

ABOVE all things, keep cool. The first requisite to keeping cool is to have a mind at peace with God and man. Anger, hurry, worry, excitement, are totally incompatible with 90° in the shade. Horace Fletcher calls anger and worry "germs," and says that all the evil passions are traceable to one of these two germs. Matthew Arnold says: "The pursuit of perfection is the pursuit of sweetness and light. He who works for sweetness and light, works to make reason and the will of God prevail." Anger and worry involve heat and strife. Sweetness and light bring refreshing coolness and peace. The first principle of midsummer wisdom, then, is to cultivate peace with men and love to God. This is midwinter wisdom also. But it is important to be wise to-day. It is easier to consider the needs of the present.

The peaceful mind needs a cool dwelling-place. To be really cool and comfortable in hot weather it is necessary to be moderate in all things. Violent exercise is dangerous at this season. It generates enormous quantities of heat in the body. Even in cold weather one may raise his temperature three or four degrees by running half a mile; 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. It is just as easy to take a hard cold, to contract a chronic cough, catarrh, or pneumonia, in midsummer as in the coldest winter weather. One must be careful not to induce perspiration, and then to sit in a draft. Do not run, do not cycle fast. Be moderate.

The daily bath is also essential to midsummer comfort. The morning cool bath, taken on rising, is the very best tonic to prepare one for the labor and exposure of the day. The evening bath of tepid or cool water, or a short hot bath, if one be greatly fatigued, is grateful not only for cleanliness, but as one of the most effective means of bringing restful sleep.

Another requisite to keeping cool is that one be moderate not only in the exercise of mind and body, but in the matter of diet as well. It is the oxidation and burning of the food we eat that gives rise to all bodily heat. Therefore, when a rise of temperature is not desirable, we should diminish the amount of fuel supplied to the body. A hot summer morning affords an intelligent person a good opportunity to show that he is a reasoning being, that he is not the unquestioning slave of habit, that because he ate beefsteak and drank coffee last Christmas morning he does not necessarily consider this combination the ideal breakfast for the fourth of July.

In very warm weather the breakfast should be exceedingly light. One is in no danger of becoming weak on account of this frugality, because four fifths of the food we eat is used for fuel; consequently, on a very hot day only enough food need be eaten to maintain the stores of vital energy, or to support muscular and mental work. A meal consisting of whole-wheat bread or zwieback, and a dish of strawberries, or half a dozen ripe peaches, a dozen plums, or a melon, with a few ripe apples, is an excellent preparation for exposure to a scorching sun. It is unwholesome to eat strawberries with both sugar and cream, simply because sugar and cream are a bad combination.

If people generally would observe this simple rule with regard to breakfast, most of the heaviness, the lethargy, the ennui, and the general prostration which many people experience in very warm weather, would be obviated.

For dinner, a slightly more generous diet may be followed; but meats of all kinds, fats, greasy dishes, everything of a heating or indigestible nature, should be avoided. Fruits and grains, with a few nuts, make an ideal dinner for a hot day. Two meals a day, with nothing between meals, are amply sufficient during the heated term.

The editor of this journal has expressed his opinion before, as to eating ice-cream. He is firmly convinced that if it must be

eaten, it should be taken boiled. Those who believe that "in a multitude of counselors there is safety" might consult William Osler, M. D., Fellow of the Royal College of Physicians, London, and professor of medicine in the Johns Hopkins University, who says in one of his important works: "Many instances of aggravated indigestion have come to my notice, due to the prevalent practise of eating largely of ice-cream. One of the most powerful enemies of the American stomach at the present day is the soda-water fountain, which has usurped so important a place in the apothecary shop."

There is a popular prejudice against the free use of fruit in summer, especially for children. The troubles arising from the use of fruit, however, are due to carelessness or ignorance of certain necessary precautions. Fruits, when whole and ripe, are the most natural of all foods, and are suited to all seasons. But they are as perishable as they are natural. As soon as fruit becomes stale, it swarms with bacteria of various kinds, and if these are introduced into the stomach, they are likely to set up fermentative and putrefactive processes. When such fruit is eaten, indigestion is the natural result.

Another cause of the prejudice against eating fruit comes from the fact that much of it is used in an immature state. A large portion of the fruit brought to market in early summer is picked green, and is entirely unfit for food. The natural process of ripening, as it takes place in the fruit when it is allowed to ripen on the tree or vine, is essential to its proper preparation as food. The ripening process is very similar to the process of digestion, the starch, which is contained in abundance in green fruit, being converted into sugar, dextrin, and various wholesome and valuable flavors and acids. When the fruit is picked green, this change does not take place, or at least it does so very imperfectly, so that the hard, indigestible tissues of the green fruit are only partly softened. When fruit enters the stomach in this state, it dissolves very slowly in the digestive juices, and readily undergoes fermentation.

Another frequent reason why fruit apparently disagrees with the stomach is its improper combination with other food substances. Foods, as well as people, have incompatibilities.

The principle which governs the proper combination of foods is, that such foods should be eaten together as are digested together; that is, such as are digested in the same portion of the alimentary canal and in about the same length of time. Stomach digestion of ripe fruits is completed in from one to two hours, while the stomach digestion of vegetables requires from three to five hours. Since fruits not only digest quickly but ferment quickly, it is apparent that a combination of fruit and vegetables must be conducive to indigestion in persons whose digestive powers have become weakened; for at least a portion of the fruit must be retained in the stomach until the vegetable substances taken with it have been digested and are discharged from the stomach.

Hygiene requires nothing unreasonable. Every one of its laws is based upon the deepest consideration of the welfare of the human body. It is nothing more nor less than simple conformity to the great principles of nature.

THE SIGNIFICANCE OF PAIN.

PAIN is a symptom of disease, a warning from nature that her laws are being violated, and that unless transgression ceases, serious results will follow. Pain is the special bodyguard of the system, giving speedy notice of the approach of foes. By its special signs one may learn at just what point to look for the invaders, and thus be armed with the means of repulse.

As a symptom of dyspepsia, pain may appear in the region of the stomach, or it may be referred to the spine, the head, the chest, beneath the shoulder blade or between the shoulders, or to any part of the

body. The most usual pain is a dull aching after meals at the pit of the stomach, which is increased on pressure either with the palm of the hand or with the tip of the finger. In some cases pain, though not severe, is constant, being no greater after a meal than when the stomach is empty, and being often apparently relieved by bland food, but coming on again as soon as the stomach is empty. This sort of pain is usually accompanied by a pain beneath the shoulder. It indicates congestion of the mucous membrane of the stomach, and, being usually preceded by the sense of weight already described, is doubtless, in many instances at least, indicative of gastric catarrh.

Sometimes pain felt in the stomach comes wholly from increased sensibility of the mucous membrane. This condition is accompanied by abnormal sensibility elsewhere, in most cases, and commonly occurs in persons of hysterical tendencies, chiefly young ladies. It not infrequently accompanies the condition rather vaguely known as "spinal irritation." I have nearly always found tenderness at the epigastrium present in cases in which there was marked tenderness of the dorsal spine, and I have also noted that in these cases pain is always present at two important diagnostic points, known as Burkart's tender points, situated about two inches on each side of the umbilicus. The tenderness at these points is elicited by deep pressure, with the patient lying on his back and the knees drawn up.

A constant, wearing pain, though not severe, often becomes unbearable from its long continuance. It gives to a person a haggard, despairing look, which is also in part due to deprivation of sleep, another ill consequence of this variety of pain. The local pain is often aggravated by shooting pains emanating from the pit of the stomach, and running into the limbs and other parts of the body. Patients frequently complain of a pain felt "clear through the body," starting from the pit of the stomach, and terminating in a tender spot in the spine nearly opposite. Pain accompanied by vomiting of blood is indicative of gastric ulcer or of some other severe structural trouble.

Flatulence produces a pain peculiar to itself.

Neuralgia of the stomach is one of the most severe pains an individual can experience, often coming on suddenly, and in many cases soon after eating, and by its intensity not infrequently causing fainting.

Soreness on pressure, with neuralgic and other pains, also exists in the small intestines in some cases of dyspepsia, the conditions being essentially the same as those present in stomach pain.

It should be remarked in this connection that the various pains referred to are often mistaken for other diseases. The pain in the chest leads the patient and his friends to believe that he has consumption; and the emaciation occasioned by defective nutrition seems to confirm this opinion. If the patient has a slight cough, this diagnosis is considered certain, and he is hurried off to Florida, California, Colorado, or some other locality supposed to be favorable for consumptives. By change of air, scenery, diet, increase of exercise, etc., the patient recovers, and the locality visited gets the credit of having cured a case of consumption, when the lungs have been sound from the first. If the patient stays at home, some quack or a worthless nostrum is quite likely to get the credit, and every real consumptive who hears of the wonderful cure forthwith tries the same remedy, but of course without benefit. Such cases occur constantly, yet it must not be supposed that all pains in the chest come from the stomach.

The same mistake is made in respect to other pains. Pain in the region of the heart is supposed to indicate heart-disease, especially if there is sympathetic palpitation of that organ. Pain between the shoulders is taken for a sign of spinal disease. Occurring lower in the spine, it is thought to be kidney trouble, especially if there happens to be a sediment in the urine. Pain in the duodenum, occurring just beneath the lower border of the ribs on the right side, is pronounced "liver complaint," and is accordingly treated by a plaster or a "liver pad." It is often difficult to undeceive the patient, and to relieve him of the idea that he is suf-

fering from some terrible organic malady,—an ulcerated lung, an abscess of the liver, incurable disease of the heart or some other organ.

The superficial character of these pains, and the readiness with which pain is developed by pressure of the finger upon certain tender points, which for the most part lie between the ribs, on either side of the sternum and the spine, and half-way between the sternum and the spine, is sufficient evidence that they do not arise from disease of the deep structures, or the organs which lie within the trunk. It should be remembered, however, that disease of the lungs, liver, or other internal organs may exist in connection with these superficial pains. Pains of the character described are generally due to irritation of the sympathetic nerve, either from the presence of acrid substances in the stomach or from a strain upon the sympathetic nerves produced by prolapse of the bowels or stomach, or the constant pull upon these nerves of a floating or wandering kidney, a condition frequently associated with prolapse of the stomach, and the dyspeptic symptoms arising from this condition.

Migraine, or nervous headache, is, in the writer's experience, always associated with dilatation of the stomach, and the formation within the stomach of poisons or poisonous substances, or the strain upon the sympathetic nerves caused by prolapse or dilatation of the stomach and associated organs.

Pain may exist in the stomach, liver, bowels, or other organs concerned in digestion, as the result of disease of the pneumogastric nerve—the nerve of sensation for these as well as the other organs of the abdomen.

ARTERIO-SCLEROSIS, OR THE DECAY OF OLD AGE.

A SUBJECT to which physiologists have given no small amount of attention, more perhaps than to any other, and which is as yet not fully solved, is how life may best be prolonged to the greatest possible extent. Old age is the natural result of changes in the arteries, hence the aptness of the remark of a distinguished French physiologist, "A man is as old as his arteries."

This change is due to the hardening of the arterial walls, which subsequently shrink and shrivel, thus cutting off the blood supply of the areas to which they are distributed. This change is known as arterio-sclerosis.

Huchard, an eminent French authority, has observed that arterio-sclerosis is especially a disease of physicians and other professional men, politicians, and financiers. He attributes the unusual frequency of arterio-sclerosis in these professions to the irregularities to which men belonging to them are especially liable, and especially the intense emotional excitements and great liability to overwork to which they are subjected, together with equal irregularities as regards sleep. To our mind Huchard fails to recognize the real causes in operation, especially in the lives of professional men, to which arterio-sclerosis may be attributed. While the wear and tear of excessive mental and nervous excitement and the irregularities of habits certainly have a decided influence in breaking down the general health, a fair consideration of the matter must show that neglect of physical exercise, indulgence in the pleasures of the table, and convivialities of various sorts, together with the use of alcoholic liquors and the free use of flesh foods, which are almost universal with the class of men referred to in France, may be much more potent factors in the production of the peculiar forms of tissue degeneration mentioned than any other.

Arterio-sclerosis is one form of the peculiar tissue changes which are the natural result of old age. Its real cause must be the loss of the normal balance between the production and the elimination of tissue wastes or excrementitious matters. In childhood these poisons are eliminated at such a rapid rate that the blood is maintained in a pure state, the skin is clear, the breath sweet, the eyes bright, the eyesight keen, and the tissues transparent and odorless. But as age ad-

vances, the excretory organs become less active in proportion to the necessity for their activity, until in old age the functions of the liver, skin, kidneys, and excretory organs are so far diminished that waste matters accumulate in the system, the skin loses its transparency, the bloom of health disappears from the cheek, the eye loses its brightness, the vision grows dim, transparency of the tissues is gradually lessened by the accumulation of organic impurities, and a variety of tissue changes appear, of which arterio-sclerosis is one.

An important source of these tissue poisons, but one generally overlooked, lies in the food. They are not to be found in fruits, nuts, grains, and other and original forms of nutrient material, but they abound in the flesh of animals the same as in the flesh of human beings. It is very evident that the greater the extent to which flesh foods enter into the diet, the sooner will the excretory organs lose their power to keep up with the work demanded of them, and the sooner will the senile changes make their appearance. This fact accounts for the marked difference in longevity between carnivorous and herbivorous animals. The average dog is old at ten or twelve years, showing all the evidences of senility in the sluggish movements, rheumatic joints, lack of vivacity, and the intense odor which consigns him to the kennel. On the other hand, the donkey is still vigorous and able to do hard work and stand the abuse to which he is subjected at twenty-five or thirty years; and instances are not infrequent in which the animal is found still active at the age of half a century. The normal age of the elephant is one hundred to one hundred and twenty years, and there are records of cases in which elephants have lived to a much greater age, without dying of arterio-sclerosis.

Tea, coffee, and cocoa contain xanthine bodies or their antecedents, a fact pointed out long ago by Lehmann, who noted the close resemblance between caffein and creatin in chemical composition; hence these common beverages, as well as meat, tend to produce arterio-sclerosis and old age.

Simplicity in diet and the habit of vigorous muscular activity in the open air daily are without doubt the best prophylactics against arterio-sclerosis, and the best means of checking the advances of this degenerative process when once it is begun.

THE PEACE FLAG.

To thoughtful American fathers and mothers it is a terrible thing to see little children play at fighting the Spaniards; to see the United States flag paraded up and down the yard accompanied by childish yells of war and bloodshed; to have their children learn to associate the stars and stripes with thoughts of killing, burning, and plundering. They have tried to teach the children that true patriotism ever and always regards war as a calamity, greatly to be deplored, to be avoided if possible.

But this is no time for discouragement. There could be no better opportunity for inculcating principles of peace than now in the midst of war. Every humane heart is touched by the appeal of suffering, whether it be of friend or foe. The quick sensibilities of little children respond instantly to the mood or temper of the grown people who make their world. If they hear father say that he hopes Uncle Sam will wipe every Spaniard off the face of the earth, presently they are out in the back lot, imagining every daisy to be a Don, and scalping the plants with merciless tomahawks. If they hear him say that with all their wickedness those Spaniards are pitiful wretches, and can hardly help being what they are after the cruel oppression of centuries, while mother chimes in that they are somebody's children, and that it hurts them just as much to be wounded and to bleed as it does our own brave laddies,—although the children may not understand the philosophy, yet they catch the spirit; and instead of being filled with thoughts of revenge and selfishness, their hearts will be intent upon tender minis-

trations. How much better that they should employ their energies in making hospitals, and driving ambulances, and caring for the sick and wounded, than in learning to hate and to shoot.

A "universal peace flag" has been designed, that is artistic and symbolic; if this were combined with our own loved emblem, and the true meaning of both and each taught to the children, it would be a lesson of strongest patriotism.

The peace flag, like our own, is a tricolor, emblematic of liberty, unity, and fraternity. It is composed of yellow, purple, and white: yellow, because this is the color of active love, of energy, of creative paternal force, attributes of the sunlight, ripeness, and plenty; purple, because this is the color of triumph achieved through constancy, self-sacrifice, and perseverance, which are feminine or maternal attributes; white, because this is the color of innocence and purity.

These emblematic colors are so placed in the flag as to illustrate the development of humanity. The paternal element, yellow, is next to the blue staff of promise and fidelity of purpose. The maternal element, purple, symbolizing the home and the family ideals, comes next, and bears the crest of universal peace. Instead of some animal or bird, this crest is distinguished by the clasped hands of a man and a woman. The motto is *Pro concordia labor*, work for peace. It is a beautiful flag, and every humanitarian bids it Godspeed.

M. H. R.

ANSWERS TO CORRESPONDENTS.

Shredded Wheat Biscuit and Granose Flakes — Bunion.—W. R., New York, asks: "1. What are the comparative virtues of shredded wheat biscuit and granose flakes? 2. Is there any cure for a bunion on the big toe?"

Ans.— 1. Both shredded wheat biscuit and granose flakes and biscuit are made from the whole wheat. Granose flakes and biscuit have the following advantages over shredded wheat biscuit: (1) They are thoroughly cooked and partially digested by the process to which they are subjected, so that they contain a very large proportion of dextrin and partially digested starch. (2) Granose cakes in flakes are ready for immediate use. They may be eaten with butter, cream, nut butter, or nuttolene, with fruit-juice, or with the addition of milk or soup, or direct from the packages without the addition of anything. Shredded wheat biscuit contain a considerable amount of uncooked starch. This difference may be demonstrated by any one who will take the trouble to compare the two by putting a portion of shredded wheat biscuit and of a granose biscuit into a tumblerful of water. In less than a minute the granose biscuit will have swollen so as to fill the entire glass, whereas several minutes will elapse before the shredded wheat biscuit is even softened, and it must be exposed to the temperature of boiling water for several minutes to complete the cooking. Shredded wheat biscuit are wholly unsuitable for food in the form in which they are placed upon the market.

2. Probably a surgical operation will be required in this case.

Catarrh of the Bowels — Granose.—A. C. W., Mississippi, asks: "1. Is chronic catarrh of the lower bowels curable? 2. Is this disease usually attended by great muscular weakness? 3. If not entirely curable, is there any treatment that will remedy its worst effects, especially the weakness? 4. Is not granose, if freely eaten, likely to irritate the mucous membrane, and thus aggravate the inflammation? 5. Is irrigation of the alimentary canal advisable in this complaint? and if so, at what temperature should the water be used? 6. What is the best diet for such a patient? 7. Would prolonged fasting, under competent medical supervision, be curative?"

Ans.— 1. Yes.

2. Often.

3. By proper regimen and treatment the disease is always curable.

4. No.

5. Yes. The temperature of the water should be 105° F. It should contain one gram of tannin to a quart of water.

6. Follow the directions for diet given in the answer to E. W. P. in the June number.

7. Prolonged fasting is doubtless beneficial, but all the advantages to be obtained by fasting can be derived from an exclusive fruit dietary, without the discomfort and extreme weakness or the dangers which accompany long fasting.

Nervousness — Epilepsy.—A subscriber in Iowa asks: "1. Is there any cure for a child who has been very nervous from birth? 2. What is the cause of epilepsy in a child of eight or nine years? 3. Can it be cured? 4. What diet and

treatment would you prescribe for these conditions?"

Ans.— 1. Yes. If the difficulty is nothing more than nervousness, the child can be cured by a proper course of diet, regimen, and training.

2. The disorder may be due to some congenital defect in the brain, or it may be the result of indigestion.

3. A cure may be effected in some cases, but in the majority of cases the disease is practically incurable.

4. It would be impossible to make a prescription without a careful examination of this case. In general, it may be said that a person suffering from epilepsy must absolutely avoid the use of flesh food. The diet must consist of fruits, grains, and nuts, taken in moderation. Abundance of out-of-door exercise is essential.

Nut Butter.— S. A. W., Georgia, wishes to know if nut butter and nut meal are more healthful than cotton-seed oil or other vegetable oils, and why.

Ans.— Nut butter, and especially nuttolene, the most recent and improved form of nut butter, also nut meal when properly made, are far superior to cotton-seed oil and other vegetable oils and fats, and are, of course, superior to animal fats. The reasons for this are chiefly the following: (1) Oils of all kinds are very likely to be more or less rancid, for after separation they very quickly undergo butyric fermentation, through exposure to the air. This is true of olive-oil as well as cotton-seed oil. Nut butter and nut meal, when properly cared for, may be preserved intact for an indefinite length of time. (2) Another objection to the use of oils, and the one which is, perhaps, the most important of all, is the fact that fats are not digested in the stomach: fats, or the oleaginous elements of food, are acted upon only after the food mass has entered the small intestine, where they come in contact with the bile and the pancreatic juice. Fats and oils, in a state of emulsion, do not interfere with the stomach digestion, as they are soluble in water, and pass out of the stomach with other fluids. In this condition they do not adhere to the walls of the stomach, or to the particles of starch and albumen which must undergo digestion in the stomach. Milk and cream are simply emulsified fat, and can be readily diluted with water, a fact of which the milk vender often takes advantage. Water and oil do not mix at all. In nuts, fats are found in a state of natural emulsion, or minute subdivision,— in the very condition, in fact, to which they are brought in the digestive process by the action of the bile and the pancreatic juice. Fat in the form of nuts, and sugar in the form of fruits, may be taken almost *ad libitum;* whereas the combination of sugar and fat, as well as sugar taken in a separate form, is a most prolific source of indigestion.

The Beard and Throat Trouble.— F. B. De L., New York, asks if shaving off the beard will cause throat trouble.

Ans.— When the beard has been habitually worn, it is without doubt a protection to the throat, and its removal sometimes gives rise, upon occasion, to taking cold and irritation.

Peanut Oil.— C. A. M., Illinois, asks if there is a simple process for removing the essential oil of the peanut, and how it is done.

Ans.— The strong flavors of all food substances may be, to some extent, removed by par-boiling.

Headache.— An old lady in Oregon asks for the cause of, and a remedy for, a pain in the head which comes on during the latter part of the night, sometimes in one side, and sometimes in the other, and again in the top of the forehead.

Ans.— The peculiar form of headache complained of is what is commonly known as migraine, or nervous headache. It is due to a disturbance of the sympathetic nerve, and is connected with some form of indigestion which a correct dietary will cure. The course of diet suggested for E. W. P. (June No.) will be found appropriate. Hot and cold applications to the spine; fomentations at the seat of pain; care to keep the bowels regular, relieving them by an enema, if necessary; an abdominal bandage worn during the night, followed by a cool sponge bath on rising in the morning; an abundance of outdoor exercise, are frequently helpful in cases of this sort. Not infrequently hypopepsia exists with dilatation of the stomach, requiring the use of the stomach-tube for a short time for cleansing the stomach.

Aerated Water.— L. T. R., Wisconsin, asks: "1. Is aerated water, if drunk while charged with carbon dioxide, injurious? 2. Does it contain microbes?"

Ans.— 1. No.

2. Yes; if the water contains microbes before being charged, they are still present, as carbon dioxide, or carbonic acid gas, does not destroy germs.

Frequent Micturition.— G. P. S. writes of being obliged to urinate about every hour, the discharge lately being thick, stringy, offensive, and causing a smarting sensation. Borolyptol has been used without effect.

Ans.— The case is doubtless one of catarrh of the bladder. Quite likely the bladder is overdistended through inability to empty itself completely, and it simply overflows. This case requires the attention of a skilled physician. The bladder doubtless requires careful washing daily, but the patient should not undertake to do this without professional instruction. A solution of common salt, one teaspoonful to the pint, with an equal quantity of ichthyol, is often beneficial in cases of this sort, when used for washing the bladder.

Granulated Eyelids — Ralston Health Club.— Mrs. A. P., South Dakota, asks (1) for a prescription for granulated eyelids. 2. Is the Ralston Health Club a good thing?

Ans.— 1. Bathing the eyes with hot water three or four times a day is highly beneficial, and will, in many cases, effect a cure if perseveringly employed. The application should be continued from ten to fifteen minutes each time. Irritating lotions of all sorts will, in the end, prove injurious. A simple solution of boracic acid, four grains to the ounce of water, is often useful. Not infrequently the services of a skilled specialist are required.

2. We do not agree with the methods of the Ralston Health Club, but we have nothing to say against any enterprise which places true principles before the people, even though they may contain, according to our views, some admixture of error.

Cassava Products.— E. L. H., Florida, requests information as to the nutritive qualities of the cassava products.

Ans.— The product of the cassava root, when prepared for human consumption, is practically nothing but starch, and hence should not be considered as a food, though it might be used in connection with other food elements. Nature has provided an abundance of wholesome foods, in which the various elements are assorted to suit the needs of the body. Vegetables do not furnish the best form of nutriment. Fruits, grains, and nuts are the choicest foods.

Facial Neuralgia.— An old lady in West Virginia is suffering from facial neuralgia, and wishes a remedy.

Ans.— This disease is generally due to disordered digestion. If the tongue is thickly coated, as is usually the case, the patient is suffering from hypopepsia, and should adopt a fruit diet for three or four days, and then adhere strictly to a diet of fruits, grains, and nuts, taken not more than three times a day, preferably twice a day, with an interval of seven hours between the meals. Once a week take nothing but fruit for one day. Fruit may be eaten freely, and nearly all the kinds may be eaten without injury if nothing but fruit is eaten. Grapes, strawberries, peaches, apricots, and ripe apples are the best fruits. (See recent articles in this journal in relation to a fruit diet.) The pain may generally be temporarily relieved by hot applications, either dry or moist; fomentations over the stomach at night, followed by the moist abdominal bandage to be worn during the night, and a cool sponge bath on rising in the morning; take as much exercise as possible out-of-doors, and avoid extreme fatigue.

Nervousness from Stomach Trouble.— F. B., Ohio, would be grateful for advice as to treatment for nervousness which impels one to swing the feet or hands, and causes numbness of the extremities. Sleep is often prevented by this restlessness. Since reading an article in GOOD HEALTH on the cause of nervousness, the writer is inclined to attribute the trouble to the stomach, though that organ is in apparent health.

Ans.— The symptoms above described, commonly known as "fidgets," indicate a disturbed condition of the abdominal sympathetic, doubtless arising from indigestion. A diet of fruits, grains, and nuts; an out-of-door life; the moist abdominal bandage to be worn during the night and followed by a cool sponge bath on rising in the morning, will perhaps afford relief. The patient ought to spend a few months at a well-conducted sanitarium.

Hours for Meals — Shortness of Breath.— M. S. J., Illinois, asks: "1. At what hours would it be best to take two meals a day when the only available times are 6 A. M., 12 M., and 6 P. M.? 2. What causes shortness of breath when one is quiet as well as when exercising?"

Ans.— 1. 6 A. M. and 12 M. A little fruit might be taken at night without injury.

2. The disturbance may be a reflex from the abdominal sympathetic, or it may be due to an affection of the heart. The case should be carefully investigated by a competent physician. No remedy can be intelligently prescribed until the exact condition is known.

Rheumatism.— F. O. N., South Dakota, wishes to know (1) if the bath cabinet is a proper means of treatment for rheumatism and bowel troubles; and (2) if electricity is needed in the treatment of these complaints.

Ans.— 1. It is a mistake to employ hot baths too freely in rheumatism. Cold bathing is, on the whole, best, but it must be employed with great

care at first. The ordinary cool bath for three or four minutes, followed by a cold bath with vigorous rubbing, is, on the whole, preferable to the vapor bath.

2. Electricity is valuable but not essential.

Facial Massage.— E. M. A., Illinois, desires to have directions for giving facial massage — how to rub the face to prevent and eradicate wrinkles.

Ans.— See article entitled "Wrinkles — How to Cure Them" in GOOD HEALTH for April, p. 210.

Peroxide of Hydrogen.— L. T. R., Wisconsin, asks for our opinion as to the merits of peroxide of hydrogen or hydrozone as an agent in the treatment of gastric and intestinal disorder, and also as a local application in skin disease.

Ans.— This is a good remedy, but it is not a panacea.

LITERARY NOTICES.

AN intensely interesting scientific article appears in the June *Cosmopolitan* on "Liquid Air — Newest Wonder of Science," by Charles E. Tripler, the man whose long and patient work has made the seemingly impossible, possible. After describing the process of liquefying air, and giving a number of illustrations of its beauty and power, he says of its practical utility: —

"In hotels and other large establishments, the same motive power which is used for running the elevators and driving the dynamos might be turned to account for all kinds of refrigeration; in the heats of summer it would be no more difficult to cool the air of our apartments than we now find it to warm them in winter; nor would there be any deleterious gases produced, as by combustion, requiring to be carried off through pipes and flues. On the contrary, the incidental product would be like the purest and most bracing mountain-air.

"The possibilities in medicine and surgery are numerous. By means of this process, air absolutely free from germs could be furnished in any amount; and if the stimulating effect of an excess of oxygen were desired, it could be had without trouble, quite free from the impurities which now make this gas objectionable. The temperature of hospital wards, even in the tropics, could readily be cooled to any degree prescribed by the physicians in charge; and by keeping the air about yellow-fever patients down to the frost point, the nurses would be perfectly protected against contagion, and the recovery of the patients themselves facilitated. Again, the cauterizing cold which liquid air is capable of producing might be used in cases of cancer with great advantage, as compared with nitrate of silver, since, while it absolutely destroys the flesh to which it is applied, its action is perfectly under control, and can be stopped in an instant. This is far from being true of lunar caustic. It is probable, also, that hay fever, asthma, and even consumption, could be greatly relieved without change of climate, by this pure, cool, germless air."

THE June number of the *Art Interchange* opens with another of those superb Rembrandt portraits in the series of masterpieces of engraving which has been appearing in this magazine for many months past. Other pictorial features are a number of fine examples of sculpture and some beautiful views of the Sculpture Exhibition just closed; also a portrait of J. Q. A. Ward, the president of the society. Two attractive color-plates accompany the number. The papers include an account of the Art Schools of California; "Patriotism and Art," by William Ordway Partridge; "The Picture as Expression," by John C. Van Dyke; "General Ignorance of Art," by Sir Edward Poynter; and "A Woman's Problem," by Mrs. Candace Wheeler. There is also a paper on Wood Carving, with reviews of the exhibitions and other art events, and the usual full departments on House Decorations, China Painting, and other kindred topics belonging to this publication. The Art Interchange Co., 152 West 23d St., New York.

PERHAPS the most adventurous and interesting career that any man of this generation has had is that of Prince Kropotkin, the Russian revolutionist and refugé. Born and reared almost in the household of the czar, he achieved great distinction as a scientific student. Becoming involved in the revolutionary movements in Russia, his property was confiscated, and he was imprisoned in the fortress of St. Peter and St. Paul in St. Petersburg. After long imprisonment he escaped under most thrilling circumstances, and continued to preach revolution in Switzerland, and later in France, where he was again imprisoned. Latterly he has resided in England, where he has written much in favor of his social and political theories. Prince Kropotkin is now engaged in the preparation of his reminiscences, which will begin in an early number of the *Atlantic Monthly*. These reminiscences, it is believed, will be among the most interesting publications of the sort that have appeared for many years

in any quarter of the world, both as a narrative of an unusual experience, and as an explanation of European politics and social conditions.

THE *Art Student*, though not a large journal, contains material of great worth to one who is studying art. "Learning to Draw" is a series begun in the March number, and it would seem that one who had never before studied drawing could pursue the course outlined, and make a success of it, without a live teacher, so plain and simple are the directions. Each number contains several studies showing different styles of art and various effects.

IN this time of our national strife we have endeavored to steer our barque along the peaceful ways of good health and right living, but in this department it seems necessary to mention articles of interest of every kind. This month *Demorest's* presents a collection of nine portraits of the first heroes of the present war, and several articles on war topics. There are other articles also, of usual interest, and many fine illustrations. The magazine has improved much in appearance since its change of form.

McClure's Magazine for June is a special war number, with articles by General Miles and General Fitzhugh Lee; an account of the first cruise of the blockading fleet off Cuba, written by Mr. Stephen Bonsal, who was on the flag-ship, "New York;" a description of the marching of the volunteers, by William Allen White; some "Songs of the Ships of Steel," by James Barnes; an American's account of his life in Manila; with other timely articles, and a great many pictures relating to the war.

THE *Household* for June presents a large, full-page portrait of James Russell Lowell, as fine as a steel plate, and below his famous couplet,—

> "And what is so rare as a day in June?
> Then, if ever, come perfect days,"

with the announcement that "the *Household* will send the portraits of Longfellow, Whittier, Tennyson, Holmes, Lowell, Bryant, and Miss Willard, like the above, printed on heavy coated paper, size, 12 x 14, suitable for framing, or for a folio, or mantel, all seven portraits, in a strong roll, on receipt of $1; or any three for 50 cents; or any one for 25 cents."

THE *Home Monthly* for June contains several articles of interest, and others of helpfulness as well. "A visit to the Seashore," by Mrs. Mary Beers Orr, is fully illustrated; also "Memorial Day at Arlington," by Margaret Spencer Delano. "From War to War," is a tender little story by Anna L. Moore. Other articles and items of interest are found in the Home department, the Kitchen, and the Kindergarten. A very good portrait of Froebel appears in the last. T. E. Orr, publisher, Pittsburg, Pa.; 60 cents a year, or two years for $1.

"Do to Others as You'd Have Them Do to You" is a beautiful song and chorus by Will L. Thompson, East Liverpool, O., author of "Come Where the Lilies Bloom." Published either with mixed or male chorus. Send 20 cents to the author.

Two bright new songs are "Just Wait Until I Get Older," by Wm. H. Plass, and the "Irish Heart," by Edward T. Remick; the former a juvenile song with catchy melody, the latter a ballad of Irish sentiment with waltz melody. These songs, as well as all late popular musical numbers, can be secured, post-paid, for 26 cents each by addressing Willard Bryant, Music Publisher and Dealer, 36 Gratiot Ave., Detroit, Mich. Catalogue free.

"SAMANTHA AT SARATOGA," IN A NEW DRESS. — One of the funniest of all the funny books is certainly "Samantha at Saratoga." Will Carleton pronounces it "delicious humor," and Bishop Newman says it is "bitterest satire, coated with the sweetest of exhilarating fun." Formerly published by subscription at the price of $2.50, and sold, it is said, by the hundred thousand, it has recently been issued in an exquisite little cloth-bound volume in the "Cambridge Classics" series by the celebrated cheap-book publishers, Hurst & Co., of New York, as a means of widely advertising that series, and is sold at the fabulously low price of 25 cents. It would seem strange if they should not sell a million copies at that price. The book is sold by booksellers, or by the publishers direct.

THE June magazine number of the *Outlook* is its annual Recreation Number. For nine years the *Outlook* has each summer devoted a special issue very largely to out-of-door subjects, and to encouraging and strengthening the appreciation of nature and the spread of the vacation idea. The current issue is the largest of all these special numbers. Timely articles this month include, "The Philippines," by Mr. Lala, a native of the islands; and Mr. Kennan's "Story of the War;" also "Make Haste Slowly," "Signal Service," two stories, poems by Henry van Dyke and Bliss Carman

PUBLISHERS' DEPARTMENT.

WAR RELIEF FUND.

WE appeal to our readers to join with us and thousands of other patriotic citizens throughout the country in raising within the next 30 days a relief fund of one million dollars to be placed in the hands of the American National Red Cross and of the Central Cuban Relief Committee, appointed by President Mc Kinley.

We, with other publishers and merchants throughout the country, are volunteering to receive donations of $1 each for the fund. It has been arranged to present every one who donates $1 with a copy of a beautiful picture, "The Accolade." This picture is a desirable historical souvenir of this great uprising of the American people to defend and set free outraged Cuba. Every patriotic American should subscribe at once! Your help is needed! Our boys are at the front! Let us stand by them! We do not reserve any commissions of any kind, and no profit is made by any persons from this fund.

Mr. Stephen E. Barton, of the American National Red Cross, and chairman of the Central Cuban Relief Committee, who, together with his colleague, Chas. A. Schieren, ex-mayor of Brooklyn, and treasurer of the Relief Committee, heartily endorsing the plan of the subscription, says that "from the deplorable conditions which now appear to confront the nation, there is every evidence that all the financial aid that is possible may be needed in Red Cross work." During the Franco-Prussian War no less than thirteen million dollars was raised for, and spent by, the Red Cross Society, in caring for the sick and wounded, and in the Russo-Turkish War, over seventeen millions! Many of us remember the magnificent work done by the Sanitary Commission in our Civil War. Millions of dollars in contributions were poured into the treasury of the Commission. Now the people should respond as promptly and patriotically as then.

"Let them keep their horses, they will need them for plowing," was Grant's plea for humanity at the close of the Civil War. We are now in the throes of another struggle for humanity. There have been wars of conquest, wars of succession, and wars of religion, but this war is for the freedom of a people that for years have struggled against violent oppression and horrible cruelty.

The Spaniard has already devastated the "Pearl of the Antilles." Ever since Weyler's edict of concentration, the outlying districts of the island have been laid waste. Not a dwelling remains to afford shelter to hundreds of thousands of the unfortunate reconcentrados; not an agricultural implement remains; not a draft animal has survived the awful devastation of this once fertile island. These people, naked and starving, few of whom can drag themselves to the place where the ruins of their homes now stand, have been stripped of even the ordinary means of self-support. Here, too, then, is a field for boundless beneficence. Tens of thousands of dollars will be needed to provide food and clothing, to furnish homes and implements, seeds, and other necessaries with which to prepare the soil for harvest. Months must elapse before these unfortunates, once re-established, can reap the result of their labors, and who is to provide for them in the meantime? The need for a large fund to perfect the work of emancipation is more than apparent. We need your sympathy for our boys and your help for a starving and desolate people.

The souvenir that is given in return for each dollar donated is a work of art fitted to adorn any parlor wall. It is a large picture, 18 by 38 inches in size. It presents Columbia, the allegorical figure of the United States, bestowing the Accolade on wounded Cuba. In the words of Judge Noah Davis, of New York, in speaking of this picture, "The Accolade is the name of the kiss given as the final ceremony in the bestowment of knighthood upon the worthy heroes of the Age of Chivalry. It was the token of love for noble deeds, deeds done in the cause of virtue, in the defense of innocence, and in the rescue of the humble and poor. It was therefore 'The Kiss of Love'—the tenderest and sweetest kiss when given in the cause of suffering and helpless humanity. . . . It is well, then, that in this hour of her awful agony, America should clasp to her bosom the wretched and unhappy Cuba, and give her 'The Accolade'—the kiss of charity and love, and the token of hope for peace and happiness, bestowed by a mighty people in the name of God and Liberty."

In the picture the figures of Columbia and Cuba are so combined that they form a great heart, crowned with the Liberty Cap, suggesting that the Age of Force and the Age of Gold are giving way to the greatest of all ages, the *Age of Heart*.

The time was when to find who was the greatest man the measuring string was placed around the muscle. That was the Age of Hercules. Then the time came when the string was placed around the head, and Shakespeare and Bacon were deemed greatest; but the time is near at hand, if not now here, when to find out who is the greatest, the measuring string will be placed, not around the

muscle, nor the purse, nor the brain, but around the heart, and he who has the most heart will be king among men.

In the background the starlike flame from the torch of liberty assumes the form of a heart whose warm glow attracts the doves, themselves symbolic of love and peace, and repels the creatures of cruelty and darkness — the vampire, the owl, and the flying fox.

Both the plan and the picture have been warmly endorsed by prominent members of the United States Senate. Senator Jacob H. Gallinger, of New Hampshire, chairman of Committee on Pensions, says: "I have examined very carefully the plan devised by you for raising one million dollars for the American National Red Cross and the Cuban Relief Committee, and gladly give it my warm endorsement. It is a philanthropic movement that can not but meet with a hearty response from the benevolent and Christian people of this great nation, which is to-day waging a war, not for conquest or gain, but to rescue a people from oppression and cruelty, such as the world has never before witnessed. The beautiful allegorical picture which you have produced, and which is to be offered for sale in behalf of the proposed fund, will be a constant reminder of the generosity of this government in reaching out the helping hand to a bruised and bleeding people, struggling for the God-given right of freedom and independence. I trust sincerely that the response to your efforts in their behalf may be worthy of the traditions and aspirations of the American people."

Senator Wm. V. Allen, of Nebraska, chairman of Committee on Forest Reservations: "I think so much of 'The Accolade' that I immediately sent it to my home in Nebraska, where it will be cared for. . . . In judging the merits of pictures, I know what pleases me, and this meets my idea of true art."

Senator Wm. P. Frye, of Maine, chairman of Committee on Commerce: "Your plan for raising money for the Red Cross seems to me an excellent one, promising fine results. 'The Accolade' is a picture of much merit."

Senator John M. Thurston, of Nebraska, chairman of Select Committee on International Expositions: "Your picture, 'The Accolade,' is splendid. It will do much to bring still stronger home to the American conscience the moral responsibilities we are under, both to feed the starving Cubans and secure independence for the island. I commend your purposes and plans."

Now, let every one of our readers send promptly to this office $1 toward this Million-Dollar Relief Fund. *All help, and help at once.*

SOMETHING NEW AND GOOD TO EAT.

Crisp, Delicious, Nut-Seasoned Crackers. Entirely Free from Butter, Cream, Lard, Oils, and All Other Forms of Fat Except Choice Edible Nuts.

As the result of many experiments, we have at last succeeded in producing a line of crackers and biscuits which contain no animal fats, and are even free from vegetable oils of every description, the only shortening employed being choice edible nuts prepared in such a manner as to produce the desired shortened effect, but without setting free the fat which they contain so as to produce the unwholesome effect always resulting from an admixture of free oils or emulsified fats or grease with farinaceous foods.

Starch mixed with fat is practically indigestible in the stomach, remaining unattacked by the digestive fluids until, after several hours of digestive work, it is carried down into the intestine. The reason for this is that fats are not acted upon by either the saliva or the gastric juice; it is only when the fat-invested mass comes in contact with the bile or pancreatic juice in the small intestine that the fat can be digested. As the fat of nuts is in an emulsified or finely divided state, it closely approaches the condition of digested fat which is ready for absorption. Cream is an example of emulsified fat; while butter, lard, suet, oils, either animal or vegetable, represent unemulsified fat. The difference between the two is that emulsified fats mix readily with water, and do not present any of the ordinary physical characteristics of fatty substances. Milk, as well as cream, is an emulsion.

Fats in the stomach float about on the surface of the digesting mass, smearing over the food particles, and preventing the action of both the saliva and the gastric juice. Cream is, by many persons, much to be preferred to butter, but nevertheless there are many who are made bilious by the use of cream, and the increasing amount of disease among domestic animals is leading an increasing multitude of thoughtful people to avoid animal products of every description.

To meet the desires of this class, which includes most vegetarians, and for the benefit of a large class of invalids who can not eat ordinary crackers, wafers, etc., whether seasoned with cream or fats, we have prepared this line of

Nut-Shortened Crackers and Biscuits,

which we feel certain will be heartily welcomed, not only by vegetarians and invalids, but by all who delight in palatable things; for these new products are as much to be commended for their delicate toothsomeness as for their absolute purity and wholesomeness.

Our list at present includes the following : —

Nut-Shortened Whole-wheat Wafers.
Nut-Shortened Graham Crackers.
Nut-Shortened Water Biscuit.
Nut-Shortened Oatmeal Biscuit.
Nut-Shortened Fruit Crackers.

Send two two-cent stamps for samples.

Address Battle Creek Sanitarium Health Food Co., Battle Creek, Mich.

THE PIONEER LIMITED is the name of the only perfect train in the world, now running every night between Chicago, St. Paul, and Minneapolis via the Chicago, Milwaukee & St. Paul Railway — the pioneer road of the West in adopting all improved facilities for the safety and enjoyment of passengers. An illustrated pamphlet, showing views of beautiful scenery along the route of the Pioneer Limited, will be sent free to any person upon receipt of a two-cent postage-stamp. Address Geo. H. Heafford, General Passenger Agent, Chicago, Ill.

WISCONSIN FARM LANDS.— There is a rush now to the choice unoccupied farm lands along the line of the Chicago, Milwaukee & St. Paul Railway in central Wisconsin. Good quarter sections can be had for $7 and upward per acre, one-third cash, balance on long time at current rate of interest. For further particulars address W. E. Powell, General Immigration Agent, 410 Old Colony Bldg., Chicago, Ill.

THE FISH AND GAME LAWS in several Northwestern States have been considerably modified. Send for free synopsis of these laws to W. B. Kniskern, 22 Fifth Avenue, Chicago, Ill.

THE OMAHA EXPOSITION OF 1898 beats the Centennial Exposition, held in Philadelphia in 1876, and is next to the World's Fair at Chicago in importance to the whole country. All the States in the Trans-Mississippi region are interested, and our Eastern friends will enjoy a visit to Omaha during the continuance of the Exposition, from June to October, inclusive.

Buy your excursion tickets over the Chicago, Milwaukee & St. Paul R'y. An illustrated folder descriptive of the Exposition will be sent you on receipt of a two-cent stamp for postage. Address Harry Mercer, Michigan Passenger Agent, Detroit, Mich.

GOLF suits or swell clothes may be worn at pleasure by the Four Hundred or the Four Thousand, at any one of the nine hundred and ninety-nine delightful summer resorts along the lines of the Chicago, Milwaukee and St. Paul Railway in the cool regions of Wisconsin, Minnesota, Iowa, and Michigan, not omitting the famous Excelsior Springs of Missouri.

Within three hours' ride of Chicago are some of the most beautiful lake and country resorts in Wisconsin. Oconomowoc, Waukesha, and Delavan are among the list. A little farther away are Elkhart Lake and the Dells of the Wisconsin River; and beyond are Marquette, with its magnificent Hotel Superior, Minocqua, Star Lake, Lake Minnetonka, Lakes Okoboji, Spirit Lake, and hundreds of other deliciously inviting and invigorating spots by where energy will be revived and life prolonged a visit of a few days or a sojourn of a few weeks.

The season opened early in June and lasts until late in September.

Excursion tickets are sold every day during the summer months. Our summer guide-book with list of hotels and boarding-houses will be sent free upon application to Geo. H. Heafford, General Passenger Agent, Old Colony Building, Chicago, Ill.

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

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

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

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