GOOD HEALTH

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PHYSICAL RIGHTEOUSNESS.

BY J. H. KELLOGG, M. D.

THE world seems to have forgotten that there is a law "written in the members," which demands obedience, and the infraction of which is visited with as certain punishment as is disobedience of the so-called "moral law." Many centuries have passed since Lycurgus undertook to make a nation of invincibles by laws compelling right-doing in matters pertaining to the body; the same relation exists to-day between habits and health, between physical transgression and physical infirmity, as at that remote age. Our enlarged modern ideas of human liberty lead us to resent any attempt by law to make us circumspect respecting the treatment of our stomachs or our muscles, as an outrageous interference with individual rights. We deem it one of our inalienable privileges to abuse our bodies as much as we please, to squander our vital capital without stint, to wreck our constitution as ruthlessly as we crush the earthworms and insects that crawl across our path. We trample upon the laws of God which relate to eating, to exercise, to dress, and to other matters of daily behavior toward our bodies as recklessly as we crush down the slender blades of grass in crossing an unmown hay-field; and worst of all, we have wandered so far away from God that we are conscienceless respecting these deviations from the path of physical rectitude. Our physical intuitions and instincts, our tastes and appetites, are, in fact, so perverted that we love evil rather than good; we turn away from the bland, sweet, wholesome, but delicate flavors of natural foods, to the hot, blistering, dyspepsia-producing, nerve-exciting essences of mustard, cayenne, and pepper-sauce. We reject with contempt the very ambrosia of the gods, which nature beneficently supplies us in such abundance,—the product of the tree and vine,—and drag up to the light some creature of the darkness and the slime of lake or ocean shore, an oyster, a crab, or a clam, and call the oozy creature good, a delicacy, a tid-bit. We devour the very scavengers of the sea, surprising them at their work, mouths full, stomachs full, covered and lined with loathsome germs; and we engulf them, germs and all, in our stomachs, at one fell swoop, like a turkey-buzzard swallowing a toad; only the toad is a clean and dainty creature compared with an oyster or a shrimp.

How did we get so low in our dietetic habits? How did our tastes and appetites become so terribly debauched? How and when did we fall into these depths of physical iniquity? These are questions which no one, perhaps, can answer. The important point is the fact that we *have fallen,* that we *are down,* and that we are sinking deeper and deeper into the quagmire of disease and physical unrighteousness; hence there is a most urgent need for reformation, for a right-about-face

movement, for a return to the paths of exemplary conduct in matters physical, for a coming back to God, who made us in his image, but left us free to choose the evil or the good, so that in choosing the good we might become more godlike in character.

That man is farthest from God who is farthest from the line of conduct in which the Creator designed him to walk. The same principle applies to the brute creation. Some of our lower relations in the great family of sentient beings appear, like man, to have wandered away from their God-appointed course of life, as we find them preying upon their neighbors, even their friends and brothers, in a truly human sort of way. Some of them, however, as the manlike apes, appear to be nearer God in a physical sense than is the highest representative of the biped family himself. Indeed, it appears as if there were a very considerable opportunity for civilized man to improve by becoming to a degree apelike, in diet at least, and in the habit of living more in the open air.

The gorilla still sticks tenaciously to the Edenic bill of fare; so do his cousins, the chimpanzee and the orang-outang; while man, at least the average civilized man, has become a scavenger and a cannibal.

There are many forest tribes whose habits of life are far more in harmony with nature than are those of civilized society. The two hundred million vegetarians of India are able to resist the destructive influences of an ever-present cholera epidemic which would exterminate in a decade a meat-eating race living under the same conditions. Meat-eating Englishmen in the deadly climate of the Gold Coast of Africa, survive on an average only three years, but the yam-eating natives are developing a dense population and a thriving commerce. The splendid peasantry of Japan, fed for a hundred generations on rice, beans, and nuts, are perhaps the hardiest people in the world, and possess a vitality and an innate energy, the force of which the world is just beginning to feel. The banana-feeding Indian of South America can carry a beef-fed Englishman and his luggage on his back for half a day without once being relieved of his burden. The Indians of southern California, living on sweet acorns and fine nuts, are still as lively as crickets at the unusual age of from one hundred and twenty to one hundred and thirty years.

The wise man said, "Go to the ant, thou sluggard, consider her ways, and be wise." The command might be, without irreverence, parodied, "Go to the ape, thou glutton, consider his ways, and reform." It is certainly a sad state when humanity has so far wandered from the right path that it is possible for it to learn lessons of reform from chattering apes and forest-roving savages.

But it is not in diet alone that man has wandered away from the right path. His habits of life are almost without exception perversions. He has cultivated abnormal tastes and appetites to such a degree that his natural instincts are well-nigh smothered. It is a favorite remark of the eminent Dr. Stanley Hall, of Clark University, that the greatest thing in the world is life, and the most interesting of all questions is how to live. This is indeed true, but nevertheless the science of right living is comparatively little studied. The dominant question with civilized men and women is not, "How can I live wisest and best?" but, "How can I extract the greatest amount of pleasure out of life?"

False conceptions of beauty lead us to cultivate deformities. Indeed, it appears that a penchant for modifying the normal shape of the body in such a manner as to produce real deformity prevails extensively in the human family, although no

A VEGETABLE WATCH-TOWER.

naturalist has yet reported the discovery of any such custom among the lower animals. Man alone of all creatures seems to have become possessed by the idea that the handiwork of the Creator can be improved upon. Even among many savage tribes the strange propensity to deform the body in some way is noticeable, although it generally takes a less dangerous direction than in civilized races.

The Indian woman of Alaska ornaments her upper lip with a pin stuck through it. Among the women of other savage tribes, fashion demands that a fishbone or a piece of wood be inserted in the under lip in a similar fashion, by means of which the flesh is dragged down, and a strange deformity produced. The civilized woman finds the lobe of her ear a more convenient place from which to hang her jewelry, and so she bores a hole through this part of her body, and inserts a wire weighted with a stone, thus emulating the example of her savage sisters. There are mothers roaming in the forest, shoeless, hatless, and without other garments than a bark apron and the picturesque designs of the tattooer's pencil, whose solicitude for their children leads them to compress their heads into cones, or to shape them to a fascinating flatness by the steady pressure of a board against the infant skull. Other mothers, less barbarous, but none the less anxious for the welfare of their little ones, squeeze the feet of their daughters into shapeless masses of bone and gristle, in the firm belief that no young lady can make an eligible bride if her foot exceeds in measure the conventional three inches. Still other mothers, more civilized, and none the less fondly thoughtful of their daughters' interests, base their expectations of a successful career for them as much upon the meager dimensions of their waists as upon the comeliness of their countenances or the brilliancy of their accomplishments. The fashionable dressmaker insists that the young lady's figure must be "*formed*," and so as the girl develops, she grows into a mold, like a cucumber in a bottle. Thus it happens that we find the civilized woman with a waist disproportionately small, as we find, among the aristocratic Chinese women, dwarfed and misshapen feet. The small-footed woman of China, in consequence of her deformity, is compelled to hobble about in a most ungraceful fashion, requiring usually one or more persons to sustain her in keeping her balance. She is willing, however, to endure the inconveniences of being a cripple and the loss of the use of her feet and legs, rather than forego the pleasure of being in fashion. If the sacrifices which the civilized woman makes to fashion were no greater, there would be comparatively small ground for complaint, but the constant girding of the waist results in mischiefs of vastly greater magnitude than those which the Chinese woman inflicts upon herself.

As the flat-headed woman watches with interest and growing pride the progressive depression of her infant's skull, while from day to day she binds more tightly upon it the flattened disc of wood; and as the Chinese woman glories in the shriveled and misshapen stump of what was once her child's foot, as a developing mark of aristocratic gentility, in like manner does the civilized mother pride herself on the smallness and roundness of her daughter's corset-deformed waist, disregarding alike the suggestions of art, the warnings of science, and the admonitions which nature gives in the discomfort and distress occasioned by the effort to secure a change in the natural contour of the human form,—a change which is more monstrous in its violation of the laws of beauty, more widely at variance with the dictates of reason, and more disastrous in its consequences to bodily health and vigor, than any similar barbarity practised

upon themselves or their children by the members of any savage or semisavage tribe. How such a disfigurement of the body could ever have come to be considered desirable or beautiful, is a problem hard to solve, since it involves not only an enormous loss of strength and vigor, but a violation of all the relevant precepts and principles of art which have been handed down to us by the great masters, as well as of the rules of hygiene in which all medical men of every age agree.

It is strange, indeed, that intelligent human beings should entertain for a moment the idea that the natural human figure, whether masculine or feminine, needs to be modified or molded with the idea of making it more perfect or beautiful or shapely than the Master Artist himself is capable of making it. Such modifications can not be produced without damage to the physical health as well as to natural beauty and symmetry. There is a great decalogue which grasps the whole man in its scope. Not a single principle can be violated without resulting injury and suffering. The principle of obedience is just as essential a factor in the physical as in the moral well-being of man. The laws which relate to our physical welfare are as inexorable and unchanging as the principles outlined in that great moral code, the ten commandments.

We are beginning to find out that man is a unity, that his faculties, physical, mental, and moral, are not so many separate entities dwelling within a tenant, sometimes at peace, at other times at war, but that his make-up is a solidarity, the unison of functions all of which are the outgrowth from one common fundamental cause, the great ever-present, universal, intelligent, life-giving force which animates the universe. To this intelligence which upholds and regulates all things, animate and inanimate, man is accountable for his conduct in all his physical, mental, and moral relationships. The almost universal neglect of this important fact is responsible for the apathy with which intelligent men and women, and especially those in positions of authority in municipal, state, and national governments, ignore the existence and the rapid growth in every city of the so-called slum district, which is coming to be a most dangerous and malignant sore upon the body politic, breeding the noisome germs of mental, moral, and physical disease, whereby the healthy are infected, and universal misery and ruin propagated. It is time that we look this matter squarely in the face and turn over a new leaf. It is time that we cultivate a broader and a more thoroughgoing rectitude in our daily habits. "God is not mocked: whatsoever a man soweth, that shall he also reap."

THE daisy follows soft the sun,
And when his golden walk is done,
Sits shyly at his feet.
He, waking, finds the flower near.
"Wherefore, marauder, art thou here?"
"Because, sir, love is sweet!"

We are the flower, Thou the sun!
Forgive us, if as days decline,
We nearer steal to thee,—
Enamored of the parting west,
The peace, the flight, the amethyst—
Night's possibility!

—*Emily Dickinson.*

THE CAMPAIGN IN THE TROPICS.

BY FELIX L. OSWALD, M. D.

II.

FOUR years ago an old sergeant of the United States regulars was summoned by a committee of investigation to explain the frequency of desertions.

"Is it true that recruits are enlisted from a naturally restless class of people?" they asked him, "and do you think the evil could be remedied by a more frequent change of garrisons?"

But the old trooper could not be decoyed by leading questions.

"That's one reason," he said, "where they enlist nothing but tramps; but if you want me to tell you the main cause, I must say that it is the quality of the rations, and the next important cause is the manner in which the food is cooked."

A CUBAN FISHING BOAT.

The reporter of the proceedings quotes that prosaic explanation with a facetious anecdote about a German soldier who ventured a comment upon the historical fact that "Napoleon did not leave Helena till the day of his death." "Donnerwetter," said Hans, "must n't she have been a good cook?"

But the American sergeant knew what he was talking about, and an amendment of the commissary supplies would really be more important than any other army reform whatever. If government institutions were not constitutionally conservative, it would be difficult to explain how such menus as those of the British and American armies could contrive to defy the sanitary progress of the last fifty years.

The poverty, but not the will, of the Turks consents to their army rations of dry wheat cakes with a modicum of vegetable oil, yet that scant bill of fare is at least limited to wholly digestible articles, and with the addition of a little sugar or sweet dried fruit (say, dried figs, that cost only five cents a peck in Janina), would answer all the requirements of man food in quality, if not in quantity.

But the salt pork of the United States mess represents fat in its most objectionable form — worse in many respects than the *ghee*, or clarified butter, which Hindu

travelers carry in bottles till it becomes too rancid even for the stoicism of a Brahmin ascetic. Our government does issue sugar, but only on the condition that its servants in uniform consent to swallow it in a cup of coffee. "Straight," or in a glass of water, with a few drops of lemon-juice, it would be a better complement of dry bread than pork, but administered with a dose of caffein poison, the possible blessing becomes a curse; the net result of the prescription is an injury to the recipient, especially under circumstances constituting *per se* a severe test of the nervous organism.

Hence, the large number of prostrations at the very threshold of the tropics, in the sweltering coast camps of Tampa, and in the mountain bivouacs of Santiago de Cuba. After the capture of Caney, some five thousand men pushed ahead of their baggage train, but carried rations for three or four days. Supplies of ammunition were brought up on pack mules, while in stress of circumstances the tents were left behind, and with a rather unexpected result.

The heat during that week of toil was fearful, and according to program, the men who had been broiling all day in a temperature of 115° would have been required to swelter all night in closed tents, with the probable result of putting three fourths of the rank and file on the sick-list. As it was, the largest increase of the sick-roll was that of the commissioned officers, who had availed themselves of special privileges for the transportation of their baggage. The privates had undergone extreme fatigue on the worst diet which a committee of their enemies could have selected for an aggravation of their hardships, but the vigor-restoring influence of the cool night air had coun-

PALM AVENUE, NEAR HAVANA.

ter-balanced the sanitary mischief of each day. In anticipation of possible rain-showers, Yankee ingenuity had improvised all sorts of shelter roofs, dry branches, supported by forked sticks and covered with sods and flat stones, palm-leaf thatches, or superfluous blankets, stretched from bush to bush, or across a frame of bamboo poles. But these tabernacles in the wilderness admitted every breath of air currents, and, moreover, were mostly individual expedients; the men were not obliged to huddle together like steerage passengers of an Italian emigrant steamer. Hearsay mongers croaked in vain; fresh night air had become Hobson's choice, and for once bipeds of the Caucasian race enjoyed the benefits of the arrangement of imbibing reserve stores of warmth in winter and of refrigerants in midsummer. After a good deep draft at a tree-sheltered fountain, a camel can traverse a hundred leagues of burning sand wastes; but if an insane caravan owner should stable his quadrupeds in a dry-storage depot on the next oasis, in order to gratify his hydrophobia, they would resume their journey only to break down under the glow of the next noonday sun. Yet the lunatic's surprise at the results of his experiment would not be a whit more absurd than the astonishment at the collapse of countless victims of the night-air superstition — poor men-of-burden, who have trudged through the desert of toilsome summer days, only to be debarred from

CUBAN ARCHITECTURE — COLLONADE STYLE.

that enables billions of beasts and birds to survive the summer heat of the lower latitudes.

The marvelous power of living organisms to maintain an even temperature under thermal extremes of the surrounding atmosphere depends upon the chance the cool air-fountains freely flowing in the oasis of the midnight hours.

To some degree the physical energy of both our soldiers and sailors was also sustained by the mental stimulus of the first assault upon the strongholds of a detested foe, and the main sanitary tug-of-war will

begin only with the next interval of protracted inactivity. Experience, or an intuitive appreciation of that danger, induced the first Napoleon to amuse his men with athletic prize contests while they were penned up on the river island of Lobau, awaiting the subsidence of a flood and the arrival of reinforcements. But in the lower latitudes lethargy itself is preferable to the stimulus of alcohol, and before the end of this campaign our military doctor's faith in medicated brandy will probably resemble Admiral Cervera's revised opinion of the miraculous image of Cadiz that insured his ships against the rage of heretics and encouraged his gunners to dispense with the worldly precaution of target practise.

The remarkable health of the German soldiers during the hardshipful six months of the Franco-Prussian War was supposed to be largely due to the invention of the highly nutritious, though unpronounceable, *Erbswurst*, a compound of pease, beans, and fat, smoke-dried, and preserved in the form of twenty-ounce sausages. These compendious rations were climate proof, and at short notice (five minutes' immersion in hot water) would furnish a wholesome and easily digestible meal, preferable to the bread and beef of the French regulars and almost infinitely superior to the rye bread and *quass* (fermented cabbage-water) of the uniformed slaves of the Czar. Pea sausages kept tens of thousands of recruits off the sick-list, and in the words of a Prussian officer, entitled their inventor to a freight train load of the civic crowns which the Romans bestowed on those who had saved the life of a fellow citizen. But an at least equal reward should be voted to the inventor of a cheap and portable ice-making machine. An apparatus of that sort, I can not help thinking, would be a greater blessing to the inhabitants of our dog day-afflicted continent than any other contrivance whatever,— with the possible exception of a patent Blue Law exterminator for the benefit of cities that refuse to appropriate a cent for the establishment of free public baths, but spend thousands of dollars for the persecution of river-bathing children and recreation seekers who venture to go fishing on the first day of the week.

A chemical refrigerator, not exceeding the weight of a camp-chair, and shelling out ice at a cost of a cent a pound, would be worth a shipload of military medicine chests, and in a campaign under the sun of the tropics could be warranted to reduce the invalid list at least one half.

Dr. Brown-Sequard used to say that the evils of famine in civilized countries are almost offset by the implied opportunity for ascertaining on what minimum of food a human being can subsist with perfect comfort — just as a toothache enforces a reduction of rations for many habitual overeaters who can not help remembering that, in spite of lingering aches in the socket of a molar, those compulsory fast days were, on the whole, the least uncomfortable days of their lives. That rule does not apply to countries like Hindustan, where millions are year after year obliged to toil from dawn to night without the hope of ever wholly appeasing the distress of hunger. But the fare of the Spanish West Indian soldiers would come pretty near the doctor's ideal of a prudent medium between starvation and overeating. The far-gone exhaustion of the natural resources in nearly all the Spanish colonies obviates the risk of habitual gluttony ; but, on the other hand, the unscrupulous methods of the army purveyors purchase the soldier's comfort at the expense of extreme distress of non-combatants. Farmers, merchants, and manufacturers are plundered to replenish the commissariat of the regular army ; and, together with the spontaneous products of

the wilderness, the proceeds of military forays always suffice to keep the camp-kettle boiling. Yet it is nowhere apt to overboil, and a stint of eighteen ounces of solid food per day keeps Pancho Garcia just lively enough to maintain his fighting mettle and good humor.

He has not many chances to get drunk, compensation in coin having almost wholly ceased since 1897, and his army doctors have sense enough to let well enough alone, though they have not altogether outgrown the Sangrado superstition — the blood-letting delusion that cost the lives of Marshal Saxe and Lord Byron. They still believe in arnica and a few other harmless nostrums which analysis has taught our sanitarians to class with the ginseng panacea of the Chinese medicine men, but they make amends by honorably refusing to enforce vaccination, and to a Spanish surgeon belongs the immortal honor of having demonstrated the possibility of curing climatic disorders, *including yellow fever*, in ice-air hospitals, and without a grain of quinine. Ten years ago that disciple of Dr. Sydenham was first struck by the "antipyretic effect" (fever-curing efficacy) of mountain air and fresh water, and began to doubt that the result had anything to do with "ozone," or moisture, and finally concluded that it was simply due to the low temperature of spring water and highland breezes, in other words, to refrigeration.

ACOSTA STREET, SHOWING OLD ARCH.

Acting on that theory, he persuaded several merchants of Santiago de Cuba to aid him in establishing a sanitarium where those conditions could be artificially reproduced.

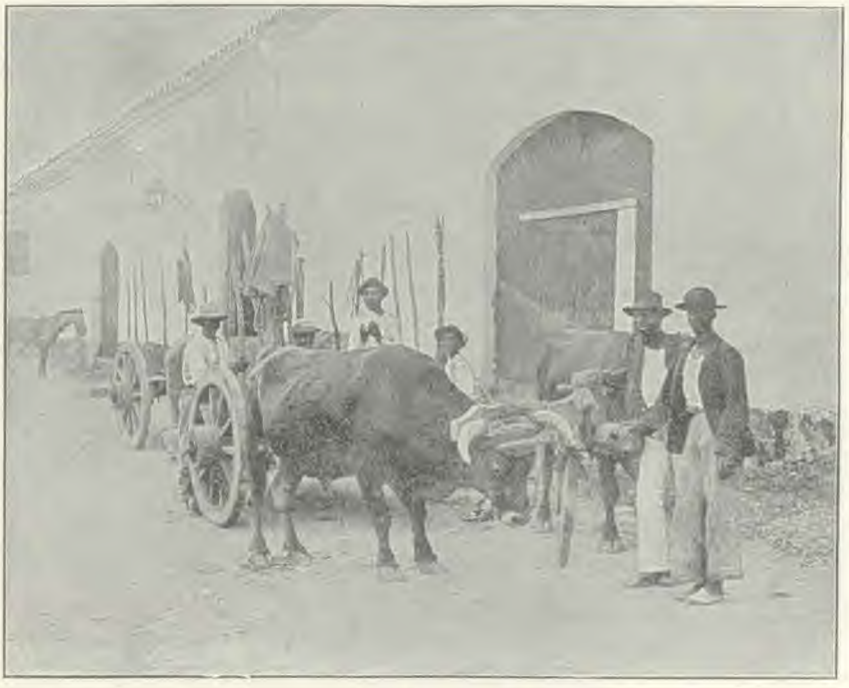
Routine doctors, of course, discredited the venture, but—

> "Genius und Natur, sie stehen in ewigem Bunde,
> Was der eine verspricht, halt die andre gewiss,"

and the evidence of experience exceeded even the expectation of the projectors. In the sultriest climate of the West Indies, and in a town where the bake-oven heat of the tropics is aggravated by a lack of

municipal cleanliness, it was found that the ice-air doctor could cure eighty-five out of a hundred patients where the quinine mongers could cure only thirty or forty, and that the managers of the new hospital could maintain their best record irrespective of weather conditions, so long as they were able to procure a sufficient supply of ice. The instinct of self-preservation prevailed against prejudice; capitalists of all nations overpaid a subscription for the addition of an ice-factory, and the benefits of artificial refrigeration were extended to hotels, restaurants, and opera-houses. Havana speculators took the hint, and the success of experiments in New Orleans and Galveston herald the advent of a time when our dwelling-houses will be cooled in summer as easily as they are now warmed in winter.

Spanish army doctors would not dream of compelling non-commissioned officers to close the windows of the barrack dormitories at sunset; they have seen too many thousand families of their own nation go to sleep on open *texadas; i. e.*, enjoy a good night's rest on their flat house-tops, protected by screens that exclude troublesome insects, but admit every draft of air. But, of course, they can not dispense with a bugbear, and



CUBAN LABORERS.

"ills and distempers, in form, variety, and degree beyond description," are ascribed to an *empacho*, an indigestion caused by a surfeit of meat or fat without the use of proper condiments.

That scape-goat is trotted out as *mala-propos* as the "caught cold" explanation of our hygienic hearsay mongers, and has contributed its share to popularize the abuse of caustic spices, for the belief in the necessity of animal food is as deeply rooted in Southern Spain as in North America, and the Galician frontiersmen quiz the vegetarian cuisine of their Portuguese neighbors, while the Italian peas-

ants rather pride themselves on their frugality. "*Pan e finocho me bastan*," say the Sicilian farmers — "give me bread and fennel and keep your made dishes," but Spanish exiles, like the children of Israel, never cease to hanker after the flesh-pots of their forefathers, and only where the very best sea-fish are cheap and abundant, Spanish army-officers venture to abolish altogether the rations of commissary salt beef.

ROAD IN THE SUBURBS OF HAVANA.

(To be continued.)

THE THERAPEUTICS OF JESUS.

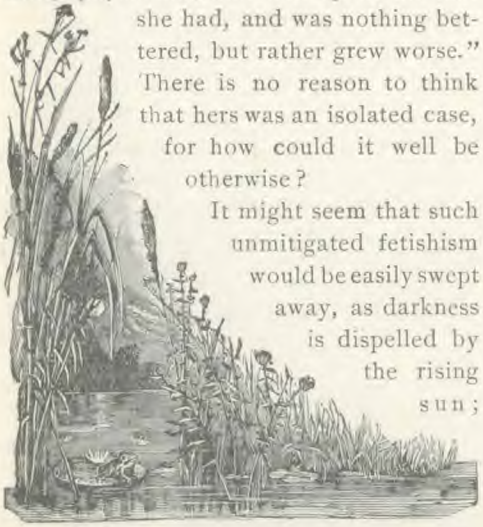
BY G. C. TENNEY.

ALTHOUGH Jesus is best known to us as the healer of the sin-sick soul, yet we all know that much of his time and strength was bestowed upon those who were afflicted with the numerous evils and maladies that beset the physical human being. The afflicted thronged his footsteps.

Of the remarkable cures performed by his word or his touch, we have, in the written accounts of his life, numerous examples. But as to the far greater number included in such expressions as, "He healed many that were sick of divers diseases;" "and Jesus went forth and saw a great multitude, and was moved with compassion toward them, and he healed their sick;" "and great multitudes followed him, and he healed them all;" and similar indefinite, sweeping statements, we can form no idea. It was certainly very great.

There were physicians in those days. There was a medical cult, rather than a science, which was jealously guarded by its beneficiaries, and hedged about with a wall of superstitious awe and gloomy mystery that prevented the common people from looking into its vile depth of imposture. Any innovation was crushed with violent hostility. Demetrius and his fellow craftsmen were not as jealous for Diana, in whose shrines they were financially interested, as were the quacks of those days for their "beastly" nostrums.

One able writer on those times, Dr. Geikie, thus speaks of the practise of medicine: "Ashes of a wolf's skull, stag's horn, the heads of mice, the eyes of crabs, owls' brains, the livers of frogs, vipers' fat, grasshoppers, bats, etc., supplied the alkalis which were prescribed. Physicians were wont to order doses of the gall of wild swine, horses' foam, woman's milk, the laying of a piece of serpent's skin on the affected part, urine of cows, fat of bears, the juice of boiled bucks' horn, and other similar abominations. For colic, powdered horses' teeth, the dung of swine; for other troubles, asses' kidneys, mice dung plasters. Cold in the head was cured by kissing the nose of a mule. Sore throat was treated with snails' slime, and the inhalation of snails' fumes burnt slowly. Quinsy was cured with the brains of the March owl; diseases of the lungs, with mouse flesh; disorders of the stomach, with boiled snails; weakness of the bowels, with powdered bats." The list is continued to some length, but the foregoing is sufficient to give an idea of the materia medica of the days when Jesus, the great Healer, appeared amid suffering humanity. Of one poor woman it is said that she "had suffered many things of many physicians, and had spent all that she had, and was nothing bettered, but rather grew worse." There is no reason to think that hers was an isolated case, for how could it well be otherwise?



It might seem that such unmitigated fetishism would be easily swept away, as darkness is dispelled by the rising sun; but he who knows the power of superstition knows better. Two thousand years of progress have not removed it from the earth, and have only modified it in what we call civilized lands. The healing of Jesus was a healing of the whole man. Mind and body, nerves and spirit, the soul and its dwelling, were renovated and rejuvenated by the treatment of that great Physician whose sympathetic glance took in the whole situation. Wherever the burden of pain or weakness pressed most heavily, there the load was first lifted. A troubled conscience, a sin-burdened soul, would hear first of all, "Thy sins are forgiven." The victim of sinful indulgence was healed, with the warning, "Sin no more, lest a worse thing come upon thee." Faith in the Saviour of men and a clean, pure life were the remedies which Jesus employed. For nauseous decoctions and nostrums he had not the slightest use. His code of therapeutics embraced a reformation in heart and life, a breaking off of soul- and body-destroying habits, and the stimulus of an uplifting faith in the power of God to save.

Jesus, in harmony with the entire Scripture, regarded sickness and suffering as the inevitable result of transgression. Symptoms were not, in his mind, enemies to be quenched and smothered, while gluttony, intemperance, and other sinful habits were left to go on sowing the seeds of disease. A clean heart, a pure life, was the first requisite, and when these were secured, faith in God would do the rest.

The principles established by the Saviour of men appeal to our wisdom as the only conditions upon which true healing can be hoped for. Nostrums that "cure" everything, with "no change of diet required," are as heathenish as those ancient abominations. But the uplifting power of a clear conscience, clean, wholesome habits, and a peaceful faith in Him who made us, is the secret of the healing art.

THE CHILD.— PART III.

BY COLONEL FRANCIS W. PARKER.

THE Germans have a saying, "That which we would have in society we should put into the school." What are we getting out of our schools to-day? Are we not getting this systematic cultivation of selfishness? Why do we have these "marks"? The answer is, "Because teachers don't know how to teach; because parents demand this kind of work in the schoolroom — book work."

I have spoken about science and the child's learning to read. I might have said the child will learn to read when the proper time comes; he can not help it. What is reading?— It is thinking, and it should be educated thinking. Think of such a mess of stuff as this, given to the little folks: "We go up. So we go up. I see the cat. The cat is on the mat." Oh, the mental nutrition there is in that! nutrition of the soul! Children are not fools until they are made such. When children study nature and study beautiful things, they learn to read with very little help.

Every child is a born worker. There never was a lazy child born on this earth. I wish to explain that: I do not mean a child when he is eight years old — when you have spoiled him. It is when he begins, and not after you have made him "sit still." "Sit still, and let me comb your hair,— don't stir and make a muss. *Sit still*, and let me put on your cap and tie your shoes and put on your wraps." After a while these children will think they are a sort of clothes-frame or something of that kind,— and they do sit still.

Just watch a child, and notice the signs that he displays. He wants to do something all the time. Just as soon as he begins to move, he begins to try to solve a great problem; he works day after day to get his big toe into his mouth,— and he does it. Then he undertakes the problem of creeping, and when the right time comes, he creeps. Then comes the problem of walking. See him stand up trembling, with the mother near and holding out her arms to him while he takes one step and then another, and his mother grasps him with a smile of triumph. Wonderful little folks!

When I was at Chautauqua a few years ago, from my window I watched the children playing on a pile of white sand. If I were the autocrat of this world, I would have two big carloads of white sand dumped into every front yard — especially in the yards of the bachelors — for the children to play in. I have often enjoyed watching the dear little folks building castles, caves, palaces, forts, and all sorts of things that imagination could think of or feed upon. One little girl said to me, "Mister, won't you buy a cake for five cents?" It was a little sand-cake. I have many such images in my mind, and they are a solace to my soul.

There is no end to these things with the children, when they begin. They go into the kitchen and want to make everything that they see made. The child wants to do something at first — until it is trained out of him; he is all the time activity. And that activity will have vent in some way. How? The child is constructive in his nature; he wants to make things. Now suppose he has no opportunity for the development of this nature; suppose he is put on an "A-B-C" basis, hemmed in and shut off from the exercise of his activities. His energy will have its outlet some day, and he will "go through" his manual training, and enter

into the spirit of the great centers of this age,— trying to get something for nothing. That is the sin.

Laziness is cultivated, as well as selfishness. Thousands of young men go through the universities, and get— words, *words!* Then they become word-mongers, no matter what name you call them, — preacher, doctor, lawyer. No minister or doctor or lawyer ever rose to eminence unless he had something more than words. The great men of this country have worked in shops and on farms, and they do it to-day. Of whom do we hear from among the boys of our nation, making a name for this country?— Dewey, a farm boy of Vermont, a farming State. We could make out a list of this kind. As a general rule, boys and girls are not trained into hard work. Now I like to hear music, I like to hear songs and hymns every day, but I believe there is more music in a first-class kitchen stove, well played on, than in all the pianos in the world.

Let the child have something to do with his own hands; he feels his power when he does something. Let me tell you a bit of my own experience: I have had manual training in my school for fifteen years, and I wish you could see and feel the delight the children have in their work from morning until night,— little children working in wood, in pasteboard, and in clay. Work is a delight to them, and a permanent delight is a divine instinct— not a spasmodic delight, but a permanent delight which springs from a deep instinct planted by God in the child's soul. Give the children something to do with their hands, I repeat. If I had a schoolhouse, what would I do? I would have thirty, forty, fifty acres of land; I would have a farm; I would have a horticultural garden; I would have trees; I would have a place where all the neighborhood could come and have a new-fashioned sewing-circle; where they could have bulbs and seeds and plants to cultivate, and where the children would be trained to learn to watch these wonderful things in their development. Inside, I would have a workshop; I would have cooking and sewing and working with the hands. "But," I hear a groan going up, "you would not have them learn anything, would you?" Oh, yes, I would,— don't worry. The reason the children do not learn any more is that they have so little to do which they love to do, and into which they can put their hearts. The more they study nature, the more they will love books. They should have text-books that will form a beautiful library full of the sweetest and the best things in all the world; there should be such a library in every school.

Children should be taught to sing. Music— what is it? All this universe moves in rhythm, cadence, movement. The stars, the suns, the constellations, move in perfect rhythm. The avalanche thunders down from the mountainside into the deep ravine, the ocean roars, the brooks babble, the wind whispers soothingly through the pine-trees,— and all in rhythm. Man does nothing well unless it is done in rhythm. The cars rumble in rhythm, and when there is a discord, the engineer knows there is danger in it. A man walks right when he walks in rhythm. The center of this rhythm is the human system,— this human being, in whom the pulsations of heart and nerves are all in rhythm.

Music is a great curative; that has been known through all time; it is a developing power. But there are members of school boards who do not believe in music in schools. They say, "We want reading, writing, and arithmetic— something that is practical— in school, but no music. Music is not education."

I would like to say to all such mem-

bers, Music not practical? You know history, of course: was there ever a band of patriots who offered their lives for sweet liberty without music, or a band of martyrs, of Christian heroes, marching to the stake, without music?

I remember, years ago, while marching in the dust of old Virginia, in the times when cannon thundered and bullets whistled, when we were hot and weary, hungry and footsore, when the boys were dropping under the band wagon, and disintegration stared us in the face, some tall son of the North commenced singing: —

"Mine eyes have seen the glory of the coming of the Lord,"

and then, man to man, rank to rank, company to company, regiment to regiment, and brigade to brigade, we were ready for the order, "Forward, march!" and we marched on to victory. Music not practical! I would have the children sing at their work, — not this formal stuff, — that is not music; I would have them burst right out in singing just as you do in prayer-meeting — or ought to.

I have been trying to show you about the possibilities of development, and I say it earnestly, that the child starts off with a hundred per cent., but we say "one per cent." The beauty of the child is not preserved. The deepest instincts of the child are not developed, and therefore his power for doing good is kept in abeyance, it is stultified. O my friends, study the child! Study the child!

I have tried to do this in my blundering way, and I have got together all the books on the subject that I could find. Years ago, I found but very few; now there are a good many. At last I came back to the Bible, and studied the great Teacher. I wanted some principles and some practise, and I saw the Master, and I love to think of him. O that I could paint that picture, almost nineteen hundred years ago, when he stood in Judea with the little tots around him, when he put out his arms to them, and said, "Suffer the little children to come unto me." What did that mean? Did it mean that children are the delight of home; that a childless home is a sad one, though it may be a palace? Did it mean the caresses of children? Oh, no! That divine Being saw the possibility of the child, — this book is full of it. "Except ye become as little children;" we are not to "offend one of these little ones."

He looked down the ages, and saw the struggle that was coming, because his whole being had one ideal, — the salvation of man. He saw the battles that would come up, even under his own name, when army against army would fight and slay each other with the banner of the cross on each side. He saw the misery, the torture, the woe, and the vice, and he saw one way, and one way alone, to develop mankind into freedom, which is obedience to God.

I present him to you as I have thought of him, — the ideal Teacher. At the last hour he called his little training-class around him, to give them the last directions; no doubt he had thought of just the words he would use. He called Peter to him, and said to that sturdy disciple, "Simon, son of Jonas, lovest thou me?" And Peter answered, "Lord, thou knowest that I love thee." Hear the words of the Master! I wish I could impress them upon you so that they would come again and again into your souls, until you studied children as you never did before, and tried to teach them as never before — his last words of instruction, "Feed my lambs." Feed my lambs! Feed the lambs of God, and the gates of glory shall be lifted up, and the King of glory shall come in.

LIFE IN A CROWDED CITY CENTER.

BY KATHARINE LENTE STEVENSON.

The Point of View.

No life reveals itself at a cursory glance. One may "do the slums" in a single night — a practise which is becoming alarmingly prevalent; but one can not thereby know the slums. The smoky, grimy, crowded quarters into which our modern system of competitive industry is more and more crowding the workingman may be viewed most critically from without; one may even climb rickety tenement staircases and collect elaborate statistics, fondly imagining that he is thus learning the life of the laboring man, but the life of the laboring man he can not thus learn. Does the plumber in the kitchen of a mansion or the book-agent at its front door know the real life that is being lived within its walls?

CHICAGO COMMONS.

We seem long in learning that humanity is a unit; that the life of an industrial community, or even of a slum, can not by any cut-and-dried rule be differentiated from the life of large leisure which spends its halcyon days upon a boulevard. One must live *with* people in order to know them, and with them neither in the condescending position of a superior nor in the cringing attitude of an inferior, but upon the frank, natural basis of common friendship and neighborliness. May not this have been one of the deeply fundamental reasons why "the Word was made flesh, and dwelt among us" — in order that, from a personal knowledge of our inmost needs, He might bear our sins and carry our sorrows?

It is, therefore, first, because I have lived for two and one-half years in a Social Settlement in one of Chicago's congested districts, and, second, because I have a profound interest in the subject, that I am venturing to speak to the readers of GOOD HEALTH upon "Life in a Crowded City Center." Possibly the order of my reasons should be inverted, since the interest must have preceded the residence; yet the interest alone could never have qualified me to speak.

There is no point of view from which the life of the poor of our great cities may be so well known as the point afforded by the Social Settlement. An outgrowth of recent thought and modern effort to solve the mighty industrial problem, the movement has spread until there is now hardly

a city of any size where the beneficent influence of the Settlement is not felt. The first one established was the famous Toynbee Hall in London, named after Arnold Toynbee, who in his early manhood laid down his life as a true social sacrifice. The largest and best-known settlement in this country is Hull House in Chicago, whence for more than ten years Miss Jane Addams has radiated her sweetness and light in the midst of the somewhat unsavory and dark social conditions of the nineteenth ward. There are now fourteen Social Settlements in Chicago, the numbers of whose residents range from only two or three to twenty-eight or thirty. Each is wholly independent of the others, both as to the kind of work accomplished and the methods used for its performance, and yet the closest of ties — that of a common purpose and a mutual affinity — unites all. This tie is strengthened by the existence of the "Settlement Federation," a society which, with few rules and no red tape, brings together, once in three months, the Settlement workers of Chicago for friendly conference.

The fundamental principle which underlies the very existence of the Social Settlement is that of mutual helpfulness. A group of people whose lives have been spent under favoring conditions becomes inspired with the great truth that blessings come to one human being largely that he may pass them on to others, and in the strength of this thought they go to share their lives with their less favored brethren. They believe that education and culture, as well as religion, are gifts to be held in trust; that their little knowledge of how to live is a talent which should not be hidden in the napkin of selfish ends, but should be freely invested with the divine idea of "usury,"— the help of others. They go into some poor neighborhood with this thought of help as their chief purpose, and incidentally, with the purpose of studying the lives of the people about them. Some of the most valuable contributions to the socio-

PIANO FACTORY. THE COMMONS. SALOON. SAUSAGE FACTORY.

logical literature of to-day have been furnished by Settlement residents. They, more closely than any other class of persons,— the mission worker not excepted, —come into contact with the inmost life of the people. They see them, not in the least on dress parade, not posing even to the small degree that the most intensely practical prayer-meeting sometimes seems to render inevitable — at least to some natures, but they see them in their everyday garb, both of dress and manners; they know them as they live. They find their failings and their virtues, their generosities and their meannesses, their pathetic attempts, in the midst of sordid conditions, to rise to a higher plane of life. They realize, as no one else can, the relation of cleanliness, proper food, and true hygienic conditions to the moral life of the vast community in the midst of which they have cast their own lives. They realize, also, that back of these needs lies a deeper and more profound one,— the need of such industrial conditions, such economic justice, as shall make it possible for these people to possess themselves of even the simplest necessities for cleanliness and true hygienic living.

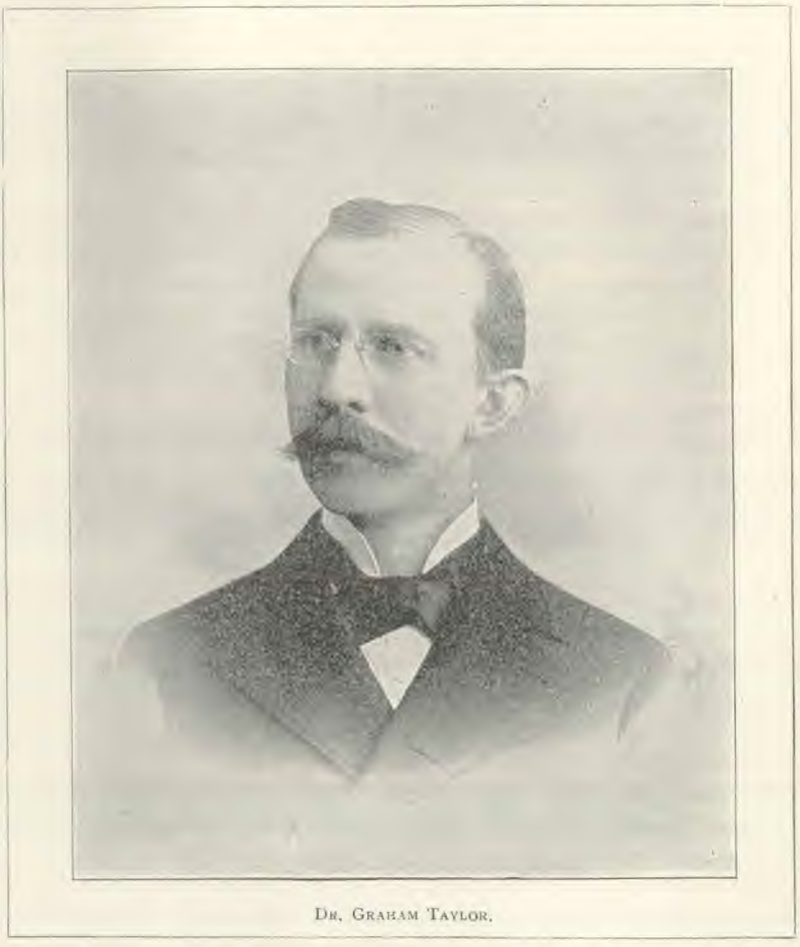
The existence of epidemic diseases is not a mystery to the Settlement workers. They become as familiar with germs as some of them have been with Greek roots. They see the homes in which the microbes are bred, and, sometimes, they find a kind of fierce gladness — the gladness of justice — in the fact that no matter by how many artificial restrictions the rich would separate themselves from the poor, the barriers are all swept away, and they come together upon the plane of common humanity whenever the result of the cruelty and neglect which have been fostered in the hovel of the poor finds its way to the mansion of the rich. They wonder sometimes if science is not yet to show itself God's handmaiden on the social plane; if the dreaded microbe may not prove a common denominator in economic problems, moving men to do, through fear for themselves, what they have not yet learned to do through love for their brethren.

One experience in particular seems to come to all Settlement workers; viz., a renewed faith in man's salvability, a deep conviction that the divine likeness is never wholly effaced; that however dark and forbidding the environment may be, some flowers of God's own planting grow in every human life. "I have received far more from my neighbors than I have been able to give to them," is one of the most frequent utterances upon the lips of a Settlement resident. Surely, next to a strengthening of one's faith in God, the highest gift one can receive is a strengthening of one's faith in man, and that gift, almost without exception, comes to those who, in the spirit of a common humanity, go to the people where they are, and strive to know them as they are.

Chicago Commons, the Settlement in which I have been a resident, was founded a little more than three years ago by Dr. Graham Taylor, professor of Christian sociology in the Chicago Theological Seminary. It is located at 140 North Union St., three doors from Milwaukee Ave., in the seventeenth ward, which has been rendered famous in Chicago's annals as the seat of the haymarket riots and the home of the anarchists. The seventeenth is one of the smaller wards in that teeming city, but its population numbers more than 30,000, very largely foreigners. In the immediate vicinity of the Commons the people are chiefly Italian, but very large Polish, Bohemian, German, and Scandinavian contingents occupy other parts of the ward. Many manufacturing interests center there, and two of the most wealthy Western railroads —

the Chicago and Northwestern and the Chicago, Milwaukee & St. Paul — run their tracks within a stone's throw of the Settlement building.

When Dr. Taylor first conceived the idea of putting his convictions and teachings to the practical test of a life lived among the people, he seemed providentially directed toward the building now known as Chicago Commons. It had been a family mansion in the days before the great fire. After the fire the tide of life swept in other directions, and this stranded building was rented by the Northwestern Railroad Company, which also built a large wooden building upon the rear lot, connecting the two by a fireproof vault, and occupying them for business purposes until the completion of its own new office buildings. After the railroad company had moved out, the buildings went through various stages in the progress of decadence until, when discovered by Dr. Taylor and his friends, the front building was a third- or fourth-rate lodging-house, the rear an Italian tenement. The struggles of the early residents with filth, vermin, and general unsanitary conditions may be better imagined than described. There was not a bath-room in the two buildings, and there was but one water-closet. The plumbing was wholly



DR. GRAHAM TAYLOR.

disconnected from the city sewage system, and two or three complete overhaulings were necessary before the air of the house ceased to be laden with sewer-gas.

Into such conditions there moved, in the spring of 1895, about a dozen residents, a minister and his wife, with their three little boys being among the number. The next fall Dr. Taylor himself, with his wife and four children, entered into residence, he taking upon himself the burdens implied in his titles of Warden and Head-worker. An optimist of optimists, a man with most profound convictions, yet largest charity, with a genius for labor and a reverent love for humanity, a faith in God and a faith in man as the child of God — few men could have taken to such a work so perfect an equipment. Under his leadership the work has deepened and strengthened until no settlement save Hull House is so well known to-day.

During the past year twenty-eight have been in residence, and the work has ranged from the kindergarten of one hundred children to the pastorate of the one English-speaking church in the ward. A constituency of between one and two thousand people visits the Settlement each week. A winter-night college reaches those who are desirous of supplementing a neglected education; there are classes in dressmaking, cooking, shorthand, bookkeeping, arithmetic, English literature, French, German, Italian, English, political economy, and in many other branches. There are clubs for men, women, young women, girls, and boys; while the mothers' meeting, which is composed almost wholly of the women who have children in the kindergarten, is one of the most flourishing institutions connected with the Settlement. This summer a camp for boys has been established at Elgin, where, by the end of the season, one hundred boys will have had from fully one week to a month of God's pure air, and learned what they never before knew — the delights of country life. A training-school for kindergarten workers has also been a feature of the last year's work.

I have spoken in detail of the "point of view" that the readers of GOOD HEALTH may know something of how Chicago Commons has succeeded in breaking down the natural wall of reserve which, at first, separated our neighbors from us, so that we have really come to know them and to be regarded by them as friends. Only as occupying such a basis should one venture to write of any people. Child-life and the home-life, especially the lives of the women in their homes, will be considered later. The subject opens up most fascinating vistas of thought, but, even as I write, the faces of many whom I have learned to know and love as friends rise before me with a look of dumb reproach at being classified as living a life apart from our whole humanity. If it were not that I hope, perhaps vainly, to be able to make some one see how utterly false, unscientific, and unchristian such classification is, I could not have the heart to go forward. If residence in a Social Settlement has taught me nothing else, it has taught me to pray, "*Our* Father who art in heaven," and to feel that, within the bounds of that fatherhood there is no room for class distinction, no room for anything but the all-compelling love which recognizes all mankind as brethren. In the working out of the mighty social problems of the next quarter of a century the Social Settlement is to play a most significant part, and that which, more than anything else, must fit it for this part, is the fact that it stands as a mediator between classes, loving all, helping each to know and, therefore, to love the other.

THROUGH THE GOOD HEALTH SPY-GLASS.

In Germany a medical officer is now attached to the primary schools. Every fifth day he gives professional or hygienic instruction.

Speaking of the soldiers, Governor Pingree, of Michigan, said recently: "You can kill as many men by not taking proper care of them, as you can by bullets."

Even dairies claiming some degree of respectability have a common practise of selling the bodies of animals dying on the dairy farms to Bologna-sausage manufacturers.

The Russian minister of public instruction has issued a decree prohibiting the wearing of the corset by young women attending high schools, universities, music and art schools. The decree is based upon the demands of public health.

It is stated that more than one thousand sets of individual communion cups were sold to about three hundred churches in this country during 1897. Each service consisted of a tray and forty small cups or glasses.

Zangwill, in the *Cosmopolitan*, describes Mr. George Bernard Shaw as "a vegetarian and a socialist" who "does not rise when the queen's health is drunk at public dinners," who is "a humorist with a mission," and an "artist who at bottom cares only for conduct."

An anti-noise society has been organized in New York City, in the interest of the sick. Already through its efforts a law has been passed forbidding the hauling of heavy iron through the streets, unless it is packed so as not to cause the deafening din characteristic of its former passage.

Fredrika Bremer is quoted as saying that the atmosphere of Cuba absorbs all odors. She found that the air was free from tobacco smoke, although everybody smoked. Roses are without perfume, and even the onions exported from there are much less intensely odorous than those grown in New England.

A peculiar product of the Philippine Islands is the Areca palm-tree, which produces in enormous quantities a nut that is chewed by the natives. A piece of the nut is wrapped in a leaf of the betel-pepper, which is smeared with shell lime made into a paste with water. It is sold, ready for use, in every town and village.

Mr. Julian Ralph, describing "The Czar's People" in *Harper's Magazine*, says that the long dark winter of idleness in a country that is one huge farm, tends to increase the peasants' drinking habits. The staple intoxicant is corn brandy, or, as we call it, whisky. In Russia it is a colorless liquid known as *vodka*. Mr. Ralph spoke of the drunkenness as being "sodden" rather than hilarious and noisy.

The report of the United States Census Bureau on the patent medicine industry of St. Louis in 1890 shows that more than $2,000,000 capital is directly invested in this business. The value of its annual products is estimated at not less than $3,000,000. The cost of these products, finished, is $2,000,000, leaving an estimated profit of $1,000,000 annually to the trade.

"The blues," according to Dr. W. F. Waugh, in the *American Medico-Surgical Bulletin*, are due to constipation and a sluggish liver. Those who are subject to

this malady should correct their diet and habits. They must take little meat, milk, or coffee, but plenty of fruits and fresh vegetables. A cold or salt bath in the morning and a long, brisk walk or bicycle ride are also recommended as excellent corrective measures.

The assumed ability of coffee to replace food or to increase the power for work without corresponding tissue destruction is, according to Dr. Edward T. Reichert, entirely deceptive, and the conditions produced by it are comparable to those observed at times in the insane, in hysteria, or in fright, when the individual may be capable of performing prodigious feats of strength and endurance, but nevertheless at the direct expense of his tissues.

Dr. Koch, of Berlin, has lately made public the results of his investigations concerning the origin of the bubonic plague. He declares that the opinion held ten years ago, that the plague no longer threatens mankind, must be abandoned, as there are now no less than four plague centers, located in Hunan, China; Tibet; the west coast of Arabia, in the vicinity of Mecca; and at Kissiba in equatorial Africa. With these centers of epidemics exposed, it is hoped that the plague may be brought under control, and finally eradicated.

Simon Pokagon, discussing "Indian Superstitions and Legends" in the *Forum*, claims that his people have been grossly misrepresented as to their customs in love and marriage; all their traditions show that, in a primitive state, they were virtuous and steadfast. He adds: "When our boys and girls become warmly attached to each other, they confidentially talk the matter over with their parents, who always sympathize with them in their love affairs; for, believe me, our children are never laughed at and tormented, as is the case with white people, as though it were a crime to fall in love."

Sallie Joy White, describing an interview with Alice Freeman Palmer, in *Success*, quotes the latter as saying: "Statistical investigation in this country and in England shows that the standard of health is higher among the women who hold college degrees than among any other equal number of the same age and class. It is interesting also to observe to what sort of questions our recent school graduates have been inclined to devote attention. They have been the neglected problems of little children and their health, of home sanitation, of food and its choice and preparation, of domestic service, and of the cleanliness of schools and public buildings."

A pleasant story of mind-cure is related by the *Cleveland Journal of Medicine*. A lady who had nervous prostration and suffered greatly from seeing spiders, mice, and rats running about the room and upon her clothing, wrote to a prominent physician describing her trouble and asking for a prescription. He sent her a powder with careful instructions as to when to take it, and assured a cure. Some time afterward the lady met him, and wished to know the composition of the wonderful remedy that had succeeded when all others failed. The doctor told her that as she had seemed to travail chiefly with spiders in her delusions, he had given her the pulverized corpse of a tarantula.

Many prominent officials in the United States army and navy have recently given public utterance to the opinion that alcoholic beverages are a source of danger and disorder among the soldiers as

well as elsewhere. Commodore Gibbs states that in his opinion "there can be no question that the public good would be greatly enhanced by the exclusion of alcoholic drink, as a beverage, from both army and navy circles." He adds: "The man who needs the stimulus of alcoholic liquor to enable him to perform his duty is not to be trusted in any capacity. In my experience of nearly fifty years as an officer in the United States navy, I think I can safely say that ninety per cent. of all punishments inflicted on board ship that have come under my observation can be traced directly to rum." General William B. Rochester says: "There is no doubt that the drink habit works very great injury to the army. It has been shown over and over again that those who endure the greatest fatigue and exposure are the men who do not drink." Brigadier General Carlin gives the following uncompromising testimony: "It has always, since I was old enough to have an opinion, been my conviction that the public good would be enhanced by the exclusion of liquor from *all* circles. It does no good anywhere, and countless evils everywhere. It is useless to discriminate between the army and other people. Liquor is a nuisance and an evil, and no greater blessing could come to mankind than the total prohibition of its manufacture, sale, and use."

THE CONSCIENTIOUS STOMACH.

BY MARY HENRY ROSSITER.

THE digestive organs awoke with a start. The mouth felt bad, and sighed for a drink of water. The tongue was so thickly covered with germs that the salivary glands made fun of it. Their merriment, however, was of short duration, for the tongue retorted that they looked rather empty themselves, and the mouth remarked sternly that they had better be about their business, if they intended to moisten the breakfast. The pharynx and esophagus were not very amiable, having a vivid recollection of some blistering salad that had made them smart the night before. The stomach examined its various pits and depressions with great anxiety. Its wrinkles deepened when it discovered the cause of the disturbances which had broken its rest for hours. A mass of decaying and fermenting food was still moving over its lower surface, while millions of germs were dancing about and multiplying at a tremendous rate.

"This is terrible!" groaned the stomach, "but what can I do? My muscular tissues worked as hard as they could for five or six hours, and the gastric juices dissolved everything possible. It is the imperative business of the pylorus to keep its orifice shut against everything but chyme; certainly this stuff is not ready for the duodenum." And the stomach churned up a long string of connective tissue and several pieces of wilted celery.

"Good morning," said a peptic gland to a pyloric gland near by.

"Good morning," replied the other, as both began to bestir themselves for the day's work.

"I do hope that our dear stomach will

not have so much to do to-day as it did yesterday."

"Yes, indeed," rejoined the second, putting the final touches on a drop of juice. "It was so exhausted last night when the last bit of chyme squeezed through the pylorus, that I am sure it could n't have contracted another time, no matter what came into it."

"And the worst of it is," continued the peptic gland, "there is a wretched residue of indigestible things that could not get through the pylorus at all, and they have been here all night. Those hateful germs are swarming all over the stuff, and are getting disgustingly fat and happy. I did hope that we were going to starve them out, but the chance is evidently gone for the present."

"It 's all on account of the chicken salad, olives, coffee, ice-cream, and cake that came rushing down here, pell-mell, late last night, just as we thought we had everything tidy and ready to leave," said the pyloric gland, which was a very domestic and neat little body. "For my part, I think the mouth did n't do just right. It knew very well that the stomach had not had a moment's rest all day, and I think it might have been a little more considerate."

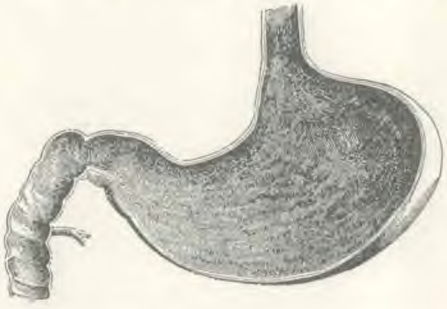
"But, my dear child," remonstrated the peptic gland, which was more of a philosopher, "the mouth could not help it. The poor thing has to do just what the Man says, and you know yourself that he is a perfect tyrant."

"But he must be a very wonderful being,— that Man," said the little pyloric gland, "to be able to defy and control the laws of nature in the way he does."

"Wonderful, truly!" said the other, dyspeptically, "for my part, I don't believe any more that the Man knows a thing. I think he 's an imbecile."

"For mercy's sake," exclaimed the pyloric gland, secreting several drops of gastric fluid in its excitement, "what makes you think that?"

But before this question could be answered, the two glands became aware of a hurried rhythmical movement along the esophagus not far away, and suddenly a gulp of hot coffee came plunging into the stomach. Several pieces of half-chewed toast mixed with oatmeal, sugar, and cream, followed immediately. Then came a large mass of beefsteak, then another and another. These were thickly covered with pepper, butter, and mustard, and accompanied by small, hard pieces of fried potatoes. For several minutes the half-masticated steak and potatoes came tumbling down without an instant's pause; then after a brief respite, the



esophagus swallowed in two buttered pancakes, a quantity of maple syrup, and a doughnut.

The stomach moaned and stirred feebly.

"What better evidence of imbecility do you want than that?" exclaimed the peptic gland, as it sent off a few drops of peptic juice to meet this food. "Look at that toast, for instance, made of half-baked bread in the first place, and full of germs that are just nicely warmed up by the toasting process and prepared to do us every sort of mischief. Then there is all that starch in the oatmeal, as well as the bread. I don't believe the ptyalin ever touched it. It does n't look like it, and it did n't stay in the mouth long enough anyway, so we can not do a thing with

that. There is *so* much energy wasted by the Man. How ridiculous, too, to put sugar on oatmeal; just as if the body could n't make all the sugar it wanted out of starch. My! but the esophagus must be inflamed, with all that pepper and mustard scratching its walls and burning its membrane. You can see for yourself that the Man does n't know anything, or he would n't act so. But we must get to work faster, or that food will lie around here all day."

The stomach by this time had begun to recover from the shock of the arrival of the meal, and was calling for the gastric juices to come to its help. The latter needed no urging, but in numberless little globules ventured out from the tiny ducts, clung timidly for a moment to the edges of the alveoli, and then began to drop off bravely on the nearest mouthfuls; soon a steady stream of digestive fluid enveloped the entire mass of food, while the stomach's muscular layers began to contract, gently churning and mixing every portion of the breakfast. The mucous lining smoothed out its folds to make more room, and all the blood corpuscles in the neighborhood crowded close to the transparent membrane. So wonderful are the resources of nature, and so vigorously did the stomach attack its task, that possibly even the heterogeneous conglomeration of incompatibilities collected in this breakfast might have been reconciled and assimilated, had not the Man, at this moment, felt thirsty. The mouth, the pharynx, and the esophagus had been so irritated by the condiments forced against their surfaces that they set up a lusty cry for water; hence, no sooner had the stomach put its energies in motion than a sudden flood of ice-cold water swept down into it, stopping all the secretions, driving the corpuscles back from the walls, and paralyzing every activity. It was some time before the corpuscles ventured back to their work, and began to warm up the poor little glands that were stiff with cold. By and by a few drops of gastric juice oozed slowly forth and began a desultory work on the saturated food. By degrees the muscular tissues resumed operations, and the process of digestion was again under way.

The stomach felt exceedingly heavy. After revolving its contents carefully, it sent a message of gas to the mouth. The gas signified to the mouth that fermentation had already begun. The stomach, it said, was well aware that the mouth, like itself, labored under limitations; but could it not, for once, refuse to open its lips to further atrocities that day. This course would, the mouth would assuredly agree, favor the best interests of the Man as well; for with its present burdens the stomach would be absolutely unable to send any more nourishment to the body unless it could have a little peace.

The mouth replied that itself, the teeth, and the tongue were all in thorough sympathy with the stomach, and would do everything possible to carry out its wishes. At the same time it could think of no way to keep itself closed against the Man's will unless it could manage to bring on lock-jaw. It feared, however, that this would be impossible, since the Man had a terror of lock-jaw, and took every precaution against it; besides there was danger ——

But here the mouth's remarks were cut short by a cigar placed between its teeth.

The stomach would have begun to ache had it not learned by experience that if it did the Man would send down a pill or a powder that would merely stop the pain and make matters still worse. Many a time the stomach, feeling the hopelessness of the situation, had resolved to protest no more, even to the mouth, but to bear its sufferings in silence, and to do

its duty by the Man without murmuring so long as any one of its functions continued able to work. But the stomach realized better than any other part of the body the vital importance of digestion. It knew that every other organ, that every blood-vessel, muscle, and nerve, in short, that every cell of the whole physical system was dependent upon it for food; that the entire Man, even to his inmost thoughts and emotions, was made of the elements prepared in its laboratory. Although from earliest infancy it had been constantly abused, tormented, and overworked to gratify the capricious whims of the Man, his family, and his friends, yet it was sincerely and deeply attached to him, not only by the tissues surrounding it, but also by that subtle and indefinable natural affinity that underlies all blood relationships. The stomach loved the Man, and although in the nature of things it could never have studied physiology, yet it knew by instinct that his course of life was all wrong, that there was no possible harmony between the food he ate and what he expected of it after assimilation. It saw plainly that the Man was slowly but certainly starving and poisoning himself to death. His bones, his muscles, his brain, his hair, his nerves, his blood, were all crying hungrily for food, and irritably refusing the poison that was sent them for bread.

And so on this occasion, as many times before, the stomach turned again to its vast army of little helpers. In them it never found disappointment. On the morning in question every particle of gastric juice that had been able to recover its vital power and to get a foothold on the coarse, chilled masses of food, was earnestly at work dissolving connective tissue and making peptones. The acids of the stomach were breaking down the albuminous walls of the fat cells so as to set free their oily contents, and dissolving also the mineral salts. Not being able to act upon fats or starch, the gastric juice could not do much with the fried potatoes, the oatmeal, or the toast. This was unfortunate, since none of the food had remained in the mouth long enough to be acted upon by the salivary glands; therefore a large share of it could now be removed from the stomach only by peristalsis.

"It is really pathetic," remarked the pyloric gland, which was watching the struggle from the door of its duct, "to see how hard those juices work. They are giving their lives for the sake of the Man, and yet he never lifts a finger to make their sacrifice easier."

"What I am worried about," said the peptic gland, "is that we are not going to have any time to rest before the luncheon comes down. Not that I mind so much on my own account, working when I am tired, but I have already secreted all the gastric juice I had prepared for, and I can not possibly get any more ready so soon. I am sorry for the poor stomach, too. It is always so mortified when it has to force into the intestines food that is not properly reduced."

"Well," exclaimed the other, "I should like just once to lay my nerves on that Man. I am only a weak little ignorant gastric gland, but I know I try as hard as I can to do what nature tells me, and I am sure the Man does not, or else he has never paid enough attention to what she says, to know. Sometimes I think he has never heard that it makes any difference what he eats; then, again, I think that he does n't care; that he just eats things that make that horrid little palate feel good, and does n't care a thing about all the rest of us. I don't know, but I get all confused when I think about it."

But the patient little glands and all the other activities of the stomach had no

more time for social amenities that day. It would be tedious to tell of the ice-cold ginger ale that sent a shiver through every cell of the digestive organs; of the luncheon that followed the ginger ale; of the peppery soup that made the salivary glands feel lazy, and tore the lining of the esophagus; of the cold roast pork and the Saratoga chips that sank like lead to the bottom of the soup; of the olives, the jelly, the salad, the pepper-sauce, the ice-cream, the chocolate cake that made the stomach's afternoon one long Spanish torture: to tell again of the evening dinner, the roast chicken and French potatoes, the cucumbers and vinegar, the tomatoes with mayonaise dressing, the coffee with green apple pie and imported cheese. Perhaps it is cruel to mention the Welsh rarebit and the pint of beer that came down about midnight.

Suffice it to say that the man was sick in the night. When a soft, kind tube descended through the gullet to take away its revolting and intractable burden, the heart-broken stomach that had worked so faithfully and conscientiously for forty years, heard the man say between groans: "I have a beastly stomach. Were it not for that I should be a happy man."

A SLY REVENGE.

BY LEONARD T. CURTIS.

FRESH from the nether world, a sprite
Sought out this beauteous land of light,
And wandered free from morn till night
  Among the throng of happy mortals.
On deeds malicious he was bent,
And was, though feigning good intent,
The craftiest demon ever sent
  Out from the dark Plutonian portals.

Earth's daughters, he could see, are fair;
Their graces are beyond compare;
Their simple robes and glistening hair
  Flow wild and free as mountain breezes.
No bands constricting does he see,
Encircling zones of misery;
Their lovely forms are ever free
  To shape themselves as Heaven pleases.

The nymph in envious musing spent
A few brief hours; then, more content,
Began to make experiment
  Wherewith he might bring sighs and sorrow
Upon this gentle happy throng
Who, innocent, with gleeful song,
Ranged free the wilds, nor thought of wrong
  That might make drear and sad the morrow.

A lithe and graceful lily fair
He sought, and with a fiendish air
Wound tight a thong with deftest care,
  Half-way from foot of stock to flower.
He went; — but came another morn;
The lily, shriveled and forlorn,
Crouched low, nor could it more adorn
  That beauty-circled, vine-clad bower.

The sprite, delighted, went his way;
He found a pretty maid at play;
A shining ribbon near her lay,
  And round her waist he slyly wound it.
He vented thus on man his hate;
For well he knew he'd but to wait,
Till hers would be the lily's fate
  With cruel thong thus wound around it.

THE HYGIENE OF LOVE.— NO. 2.

BY MRS. S. M. I. HENRY.

EVERY child has been left to receive through his parents the legacy of love which is his birthright. One can only pay out, however, in his turn, that which he has received, and every generation is responsible for giving a fair start in all that makes life desirable to the one that it produces.

The fathers now slumbering in the dust of the earth, have, in their ignorance, defrauded many generations of the fine gold of love, and bequeathed to them its corroded counterfeit of lust, together with the long catalogue of diseases which afflict the race to-day.

Disease is the enemy of Love, for Love is life; disease is decay, decay is death. Nothing can be sound any part of which is decayed; or, in other words, a condition of health and disease can not at the same time exist in the same body. Disease can not produce health, therefore a sick mind or body can not be healthy in any of its functions. Love is a function of the entire man, and can not be performed by an invalid.

Body, soul, and spirit are requisite to human life, and must each share in whatever inheres in the other. Body and soul are media through which the spirit (the life) must operate, and the spirit must be circumscribed in its power whenever disease (death) is present, for it can not use dead things. It can make the dead to live; its every touch gives life; but it must either stop at the threshold of disease, unable to go any farther, or, by forcing an entrance into the charnel-house, give life and soundness to the dead.

Thinkers have long suspected that a sound mind can not inhabit a sick body, but only in these later years has the importance of this fact begun to be realized.

Love is God, for God is love. It is the vital principle by which all things are, and is in itself entirely independent of all conditions. Man has seemed to think that it has existed by and for himself alone; but while it is necessary to man, man is not necessary to the existence of love. Man was created as a channel for this divine current, and the domestic relation — the home — was to be as a machine, which, operated by its power, should produce and fill the earth with the harmonies of heaven.

Disobedience, however, brought in that distemper which necessarily interrupted the flow of this current in the human channel, and left the machine to fall into decay; and in its stead the turbid stream of lust was turned into the channel, and all the works became befouled and clogged by refuse, until, through disuse of love, disbelief in its reality grew up in the minds of men, and the time came when to ask of almost any experienced man of the world, "Have you received love?" would call forth the answer, "I have not so much as known if there be any love." Its counterfeit has been known until it has made the very name a hissing and a by-word, but love,— love that suffereth long and is kind, that envieth not, that vaunteth not itself, that never behaves unseemly, that seeketh not her own, that is not easily provoked, that thinketh no evil, that beareth all things, believeth all things, hopeth all things, endureth all things, that never faileth,— love sound and pure and sufficient for all emergencies,— "O heart of mine! where is this my natural food for which I starve, this healer of all my ills?" cries out the desolate, the unbelieving, but hungry soul.

As the eye cheated by blindness cries out after the light that it never saw; as

the man, crippled, lame from his birth, craves the vigor that he never sensed; as the sufferer from the torments of vice so longs for a respite that he does not hesitate to plunge into death to find it; so does the whole nature of man, defrauded by lust, cry out after love. Many have been the altars erected and inscribed to this unknown Love, and the Evangel of health, in passing by and witnessing the world's pathetic worship of a dream, has answered after Paul at Athens,· "Whom ye ignorantly worship, him declare I unto you. Love that made the world, and all things therein, who dwelleth not in temples made with hands; neither is worshiped with the senses, seeing he giveth to all life, and breath, and all things; and hath made of one blood all who dwell upon the earth, enjoins that they should seek Love, if happily they might feel after him and might find him, though he be not far from every one of you; for in him must all live and move and have their being, if they live, for life without Love is no life at all."

In love there is no alloy of lust. This fine gold can not be made by any process to mix with any baser metal. Lust is disease, and can not exist in the same body with this principle of life. Health and love act and react upon each other, being the two living forces that, each forever drawing from and forever returning to the other, keep the pendulum of life swinging, with the rhythmic cadence of perpetual motion, from love to health and health to love through the radiant arc of perfect strength.

Love is not a growth, but it produces growth. It is not an evolution, but the evolutionist; not a development, but that by which alone development can be. It is not a product of any conditions, but it is the power that controls conditions and all ligitimate production.

The whole world acknowledges this to be true as a theory: it is the possibility of its practical realization which is doubted; but in a few lives it has already been so demonstrated as to establish the fact that it is just as true in the human heart as in the divine essence, in the earthly home as in heaven, wherever Love has sway.

Love is the same yesterday, to-day, and forever, and like the sunlight or the kernel of wheat from the hand of an Egyptian mummy, is recognized by the same tokens in every land and under every sky. Its mission is always the same,— simply to produce more love. A harvest of love can not be grown in a day, after a long growing of lust. The tissues of repair grow slowly in body and soul; and since a healthy love is possible only in a healthy being, there is a demand for patience and endurance.

To create the possibility of love in fallen humanity is the mission of life, and if it fails in this, it fails in all. The foundation of a life of love must be laid in childhood, and depends on that cultivation that shall eliminate disease and make health possible. Health must begin in the body, since it is through this environment of flesh and blood, and over the scaffolding of bone, and by the telegraphic system of the nerves, that the inner life is reached. The larger life of God has condescended to communicate with and nourish the human through sentient media; not because he could not have arranged for direct contact with the spirit that is in man, but because he did not so elect to do. He had too great concern for the whole man to allow the possibility that soul and spirit should ever forget the right of the flesh to chastity and health. He would make it necessary that soul and spirit should provide for the crucifixion of lust for their own peace, and that the flesh should for its own comfort deny itself those indulgences that would of necessity torment the soul into that mournful vigilance that

would drive sleep away. He made the perfect comfort of the whole man dependent on his loyalty to the laws that are written in his flesh concerning the use of the most ordinary things of daily need. He so linked the destiny of one generation with that of another that the food which nourishes or poisons the mother of a nursing babe, shall have much to do in settling the question as to whether the channels of his being shall be filled from the pure fountains of love, or be clogged with the débris of lust.

The selection of what the child shall eat and drink and what he shall put on will help to make or mar in him the image of the Heavenly from the earliest dawn of his existence.

The poisons of alcohol and nicotine; the fiery condiments so often mingled with his food; the corruption caused by diseased animal substitutes for natural food; the disregard of those principles upon which are based the laws of dress; a false system of education, together with corrupt literature; a degraded social standard; a religion of questionings instead of faith, the worship of self and selfish appetites instead of God, — these, all working together for evil from the flesh inward to the seat of life, have produced an environment of disease for which Love can have no use because there must be eternal disagreement between them.

(To be continued.)

ARTIFICIAL INFANT FOODS.

BY KATE LINDSAY, M. D.

(Concluded.)

THE saliva and the pancreatic fluid both digest starch, and in some cases it may be well to use a food which is partially digested outside the body by mixing with pancreatin. Well-cooked gruel at a temperature of 140° F. may be used, or, if milk can be tolerated, equal parts of milk and gruel. A pint of the gruel will require two or three teaspoonfuls of the liquor pancreaticus, and twenty grains of carbonate of soda to digest it. It should be kept at a temperature of 140° F. for two hours, and then heated to the boiling-point for a short time, and cooled by putting in cold water or on ice. Some forms of pancreatin are in powders or tablets, and each usually has directions for use printed on the boxes or bottles. Pancreatin not only digests starch, but also the casein and other nitrogenous food elements.

It may sometimes be necessary, in an emergency, to use predigested food for a short time, but nature never intended the human body to be nourished by foods artificially digested, and no infant can live on them and be properly nourished for any length of time. All the predigested starchy foods are deficient in the fatty elements, and must be used only for a short time, or the nutrition will be disturbed, and rickets or some other form of malnutrition occur. If dependence is put entirely on any one of the many prepared foods, the same danger will be met. It would be well for the preservation of the lives and health of children, if all mothers comprehended this important fact. Patent foods are all very easily prepared for the baby, and unless the mother or nurse is wise enough to be watchful, and ask the opinion of the infant organism, by means of the scales, or by the manner in which each organ does its work, as to how

the nutrition of the baby is maintained, there is danger that its life and health may be endangered, and it be seriously ill before it is discovered that it has been slowly starving to death because its food lacked some important element.

All foods prepared from the grains being wanting in fat, it seems strange that no effort has been made until very recently to find a vegetable product which would contain this element in proper amount to make the prepared food more nearly like human milk in composition. It has long been known that nuts are richer in oil than other vegetable foods, but while they have been somewhat extensively used, it has been more as a luxury than from an appreciation of their value as a food. Of late years, efforts have been made to utilize the fatty elements of nuts, and also of some seeds, as cottonseed. Olive-oil has been used for cooking purposes for many centuries, but more as a condiment than for any consideration of its food value. In England and many other countries, there are several forms of vegetable fats which are used in the preparation of pastry, gravies, etc., the principal ones being made from cocoa-nuts, almonds, and other oily nuts. In all these preparations, the natural emulsion arrangement of the vegetable oils as they exist in the nuts or seeds is destroyed; and the fat, instead of being in a form to be easily digested, is in the form of free fat, and so taxes the digestive organs too heavily to prepare it for absorption, if they be at all weak.

At present, experiments are being made, however, and foods prepared from nuts. By the malting process, the starchy elements are changed into sugar, and the albuminoids and fats form a mixture which in composition and appearance resembles milk. The fat still remains in the state of fine division known as emulsion, which gives to milk its white color. Of the many animal foods, other than milk, there are numerous meat broths, teas, and extracts, which are all very inferior foods, if it is proper to call any of them foods. They may be used to flavor some form of farinaceous food, and induce the child to eat it, when otherwise it would refuse to take it. Eggs are of more value, containing all the elements needed for food. Sometimes when milk and other foods are rejected by an irritable stomach, the white of egg mixed with cool water, and strained through a fine, clean cloth, will be retained; or the egg may be dropped into water at 160° F., and allowed to curdle into soft flakes, which are easily broken up; or it may be immersed in water of the same temperature as above, and left covered for ten or fifteen minutes, when either the whole egg may be used, or the white or the yolk separately.

There is hope that in the future the public health of the people will be well looked after by intelligent legislation, but that can never make good the want of knowledge, skill, and care in the mothers of the present race of babies. It is said by many who mourn over the advent of the new woman, that to be domestic and to look after the welfare of her family is the sphere of woman. Certainly, to fill this important place well, and do her duty in this sphere, requires all the education in science that our colleges can afford, combined with a practical common-sense education which will make women acquainted with themselves, and their capabilities for good or evil as wives and mothers, and also teach them what their little ones need in the form of food at the starting-point of life. It is because of the great lack of this knowledge, which no school but that of every-day life can afford, that so many infants die in early life.

Seasonable Bills of Fare

BREAKFAST NO. 1

Fresh Fruit
Blackberry Mush and Cream or Nut Cream served with Toasted Whole-Wheat Wafers
Nuttose and Rice Croquettes
Graham Water Puffs
Blueberries
Caramel-Cereal

BREAKFAST NO. 2

Fresh Fruit
Crystal Wheat and Cream
Fresh Blueberry Toast
Breakfast Rolls with Nut Butter
Sliced Tomatoes

DINNER NO. 1

Green Corn Soup
Nuttose Roast
Cauliflower with Tomato Sauce
Wax Beans
Pearl Barley with Raisins
Whole-Wheat Bread
Sliced Peaches with Almond Cream

DINNER NO. 2

Green Lima Bean Soup
Mashed Potatoes
Baked Eggplant
Stuffed Tomatoes
Granola Peach Mush
Nut or Cream Sticks
Blackberries
Tapioca Jelly

RECIPES.

Blackberry Mush.— Rub a pint of canned or freshly stewed and sweetened blackberries, having considerable juice, through a fine colander or sieve to remove the seeds. Add water to make a pint and a half cupful in all, heat to boiling, and sprinkle into it a cupful of sifted graham flour, or sufficient to make a mush of the desired thickness.

Cauliflower with Tomato Sauce.— Boil or steam the cauliflower until tender. In another dish prepare a sauce with a pint of strained stewed tomatoes heated to boiling, thickened with a tablespoonful of flour rubbed smooth in a little water, and salted to taste. When the cauliflower is tender, dish, and pour over it the hot tomato sauce. If preferred, a tablespoonful of thick sweet cream may be added to the sauce before using.

Baked Eggplant.— Wash and cook whole in boiling water until tender. Divide in halves, remove the inside with a spoon, taking care not to break the skin. Beat the eggplant smooth with a fork. Season with salt and cream, and if desired, a stalk of celery or a small slice of onion very finely minced, for flavor. Put back in the skin, sprinkle the top with bread-crumbs, and brown in the oven, with the cut side uppermost.

Tapioca Jelly.— Soak a cup of tapioca in a pint of water over night. Add another pint, and cook until transparent and smooth. Add three tablespoonfuls of lemon-juice and four tablespoonfuls of sugar; beat well together and turn into molds. Serve cold. No dressing is required.

Nuttose and Rice Croquettes.— Steam one-half cup of well-washed rice in one cup of water, with one-fourth teaspoonful of salt, for one hour, or until tender. Add to this an equal bulk of nuttose, simmered for an hour until quite dry, one egg, and salt to taste; shape, roll in fine bread or granose crumbs; bake twenty minutes in a moderate oven. If desired,

one tablespoonful of chopped parsley or celery may be added before shaping. Nuttose as it comes from the can, chopped, may be used if preferred.

Nuttose Roast.— Place one pound of sliced nuttose in the bottom of a small dripping-pan with a few slices of onion and a little salt. Cover with water, and bake slowly for several hours. Three quarters of an hour before serving, pare and quarter, lengthwise, three or four potatoes, and place in the pan. Sufficient water should be added from time to time to make a good gravy.

Graham Water Puffs.— Into one cup of very cold water — in which are lumps of ice, if obtainable — beat one egg, a pinch of salt, and two cups of sifted graham flour. Continue beating until the batter is full of air bubbles, then drop into warm, not hot, gem-irons, and bake in a rather hot oven about forty-five minutes, or until dry inside. By varying the flour, whole-wheat and corn puffs may also be made. For the corn puffs use one half white flour. A small amount of it may be used in the graham puffs.

IF YOU MUST USE MILK.

ONE of the objections constantly urged by hygienists against the use of milk and cream as food is the great difficulty encountered in securing a pure article. Dr. C. E. Marshall, of the Michigan Agricultural College, considers the composition, nature, and hygienic methods of handling milk, in an address delivered at a meeting of dairymen and milk dealers in Lansing, Mich., and published in the *Bulletin of the State of Michigan Dairy and Food Commission.* He says in part: —

"Milk is a rich food for bacteria. In the udder of a cow free from disease the milk is free from bacteria. It is on the way through the milk duct, and by its contact with the dust of the air, the hands of the milker, the dirt of the pail, that milk becomes richly inoculated, or contaminated, with bacteria. This inoculation, or contamination, is governed in richness in proportion to the amount of filth that surrounds the milking process. It is possible to draw milk from the udder of a cow without introducing thousands of bacteria, but this is not realized by the usual methods of milking. It is safe to say, nevertheless, that the number of bacteria will be diminished as the cleanliness is increased.

"Household consumers have heard much discussion about tuberculosis, diphtheria, typhoid fever, scarlet fever, and tyrotoxicon poisoning, and they are fearful lest the reports should be well founded. Hygienists cultivate this popular belief, and rightly so, because they know that there is danger in a promiscuous use of milk from an unknown source.

"Cases of tuberculosis have been traced directly, so far as it is possible to trace anything of this nature, to a cow giving tuberculous milk. Since the introduction of the tuberculin test, it has been established that many cattle heretofore unsuspected have been found to be tuberculous. So large has been the per cent. of tuberculous cattle found that it is believed that tuberculosis is quite prevalent in the herds of the country.

"An explanation of the tuberculin test may not be out of place in this connection. It consists in introducing into an animal the products of the tubercle bacillus obtained by growing it in a prepared glycerin beef tea. If the animal has tuberculosis, upon the injection of the tuberculin its temperature will rise several degrees above the temperature previous to the injection of the material.

If the animal does not have tuberculosis, there is no rise of temperature at all. This test is by no means infallible, yet it must be regarded as the best diagnostic we have. It will be necessary to apply it year after year, if tuberculosis is to be weeded out of a herd. The fearful ravages of tuberculosis warrant consumers of milk in expecting radical measures to be taken in fighting this disease. It should be the care of every milk producer to protect his patrons against the contraction of tuberculosis.

"Diphtheria has been conveyed through milk supplies. A single illustration will suffice to give the importance of this avenue of transmission. In a certain large city a milkman noticed that his throat was sore, but did not consider it serious. Not long after a little girl, belonging to a family obtaining milk from this man, became sick with the malignant form of diphtheria. A bacteriological examination revealed the germs of diphtheria in her throat, and an examination of the milkman's throat demonstrated that he had been sick with diphtheria. The contagion which struck down the little girl in all probability emanated from the milkman. We have no unquestioned evidence that diphtheria is ever transmitted through the direct instrumentality of cows.

"A great deal of satisfactory proof could be adduced to demonstrate that typhoid fever is frequently carried by milk. Within the last year a city of about twenty thousand inhabitants was visited by an epidemic of typhoid fever. After a careful mapping out of the cases scattered over the city and a study of the milk routes, the health authorities were able to account for more than ninety-three per cent. of typhoid-fever patients, and were able to ascertain that they all had obtained milk from a single milk supply. Following the route taken by this supply through the streets of the city, it was noticed that typhoid fever began at two corners where this milkman had supplied milk to other milkmen. Before the corners were reached, the streets were free from typhoid fever. This indicates that the man who supplied this infected street had pure milk until he reached the corner and received some milk from the contaminated supply; and also that wherever and whenever this man supplied milk to other milkmen, their supplies became at once infectious. Upon tracing out this contaminated or infectious supply to its source, it was found that the man had been in the habit of washing his cans in a small creek which flowed through his back yard, and which, farther up the stream, received sewage. The significance of this typhoid-fever epidemic may be well understood when it is learned that there were between one and two thousand cases.

"The tyrotoxicon victims are perhaps still fresh in memory, for since its discovery by Vaughan, of the University, numerous cases have come to light in the State of Michigan. In each instance the cause has been definitely established to be due to carelessness in the care of the milk or the milk's surroundings. The Evans case, in the southern part of the State, where a whole family was wiped out with the exception of the father, bears testimony to its direful effects. It should be remembered, too, that tyrotoxicon is not the only possible poison produced by the action of germs upon milk; other poisons equally intense have been isolated.

"Inasmuch as the changes which have been noted above are traceable to filth or the careless handling of milk, we can not overlook means which will tend to lead us out of the old practises, now in a way regarded as obsolete. It is not an uncommon thing to pick up a glass of milk or a pitcher of cream, and find, upon inclining the glass or pitcher, a layer of dirt or filth at the bottom. This filth, it must

be admitted, comes from the cow, from the milker, and from the dust of the barn. It is composed of no more nor less than the mud of the barnyard or the dung of the cows. Each particle of dust or filth contains thousands of bacteria, having various functions which, as soon as the particles of dirt are dissolved, are liberated, to begin their devastation upon the milk. Among these bacteria we shall find those that produce the ordinary souring and the numerous other changes which may be considered harmless, and those also which are capable of producing poisons and diseases, either in the milk or in the body.

"It may be considered impracticable to wash off the cow's udder with a damp sponge, to keep the hands of the milker clean and his clothes unsoiled, and to lay the dust of the barn, but these things must come before we shall have wholesome milk. It is not the part of the milkmen alone to institute such innovations, but it is equally the part of their patrons to encourage and support them by material assistance. In a city of twenty thousand it is doubtful whether a typical dairy could be sustained, because of the increased cost of production and the unwillingness of patrons to pay the extra expense. Yet in the face of all this, filth must recede from the barn and dairy, new methods must be established, and our milk must be as clean as food prepared in the kitchen. It is a matter of evolution and time. Every person must learn the significance of filth in milk products before he will demand milk products without filth.

"The importance of water in its relation to the dairy can not be overestimated. The cattle, it is true, should have pure water, and yet we can not say that milk is affected even when cattle are given water that is really obnoxious. The reservoirs of cattle seem to be admirably fitted with exceedingly good filters and purifiers, and it must be confessed, too, that cattle are not very susceptible to polluted water. Cases, however, have come to our notice where epidemics have occurred in certain herds which were not unlike epidemics of typhoid fever in man, and in some of these epidemics the impurity of the water has been demonstrated to be due to deadly bacteria. Man can not drink sewage water, neither should cattle be compelled to drink it, although it is a very common thing to see cattle drinking from a well which receives the drainage of the barnyard. We may be unable to establish any taint in the milk caused directly by impure water, still we are cognizant of the fact that many foods taken into the system of a cow will produce a changed flavor in the milk.

"The water of the dairy should always be absolutely pure, for some of it necessarily gets into the milk and milk products. Recall the incident which has been related to illustrate the transmission of typhoid fever by means of milk, and how these typhoid-fever germs got into the milk, and you will have recalled sufficient evidence to impress yourselves with the necessity of pure water. Beware of shallow wells, dirty cisterns, and waters which are derived largely from the surface, as rivers, creeks, etc., because they are likely to contain dangerous elements, sometime or another. If you can shut out all possibility of introducing impure water and have supplied yourselves with pure water, you have guarded yourselves against the attacks of disease-producing and poison-producing germs.

"Another item may be mentioned before the close; that is, the matter of ventilation. There are two objects in view when a ventilating system is designed. One is to have a system which will rid a barn of all odors, and the other is to supply an abundance of fresh air for the

health of the animals. Odors will always be present in a barn, even when the greatest pains are taken to absorb them, and these odors can be eliminated only by currents of air. It is not my purpose even to suggest a system of ventilation; my desire is simply to call your attention to its importance. Fresh air must be provided for the health of the cattle, if their vigor is to be maintained. In many barns the temperature, even during the coldest weather of winter, is comparatively high, owing to the radiation of animal heat. If a room is small enough to be heated by an animal contained in it during the coldest days of winter, it is quite evident that the space must be exceedingly limited and the air foul. Under those circumstances it would be impossible to keep an animal in a condition capable of resisting disease. It has been suggested by a great many observing men that tuberculosis is far more prevalent in an ill ventilated barn than in a barn where the ventilation is fairly good. It has also been shown, in the case of horses, that where the air space has been increased, disease has been diminished. Ventilation, apparently, is of the greatest importance."

THE BATTLE CREEK SANITARIUM QUESTION BOX.

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

1. CAN a person who is suffering from hyperpepsia cure himself at home after spending ten weeks at a sanitarium?

Ans.— An ordinary case ought to be able to do that by a proper diet and proper treatment, but a very bad case might require some further care at the sanitarium. We do not expect to keep our patients long enough to make them absolutely well, but simply long enough to train them into correct habits of life. The most important thing is to teach them how to train themselves back into a state of health, and how to retain that state. It is important that patients should appreciate the value of hygienic cooking. This branch of education is not taught in our public schools, but it should be taught there, and it should be preached in our pulpits everywhere, and published in all our magazines. The first thing that a child should learn is, how to take care of himself, how to preserve his health. The wild savage is more particular in reference to the health of his boys than is civilized man.

2. Is the tomato a fruit or a vegetable?

Ans.— Botanically, the tomato is a fruit, but commercially it is a vegetable. If you go to the market, you will see the tomato among the vegetables. If you go to works on botany, you must look for it among the fruits. I suppose the question means, "How would you eat the tomato, —as a fruit or a vegetable?" I confess I have not quite made up my mind whether, from a dietetic standpoint, the tomato should be considered a fruit or a vegetable; I am inclined to think it is about half and half, for I find that some people can eat all kinds of fruits, but can not eat tomatoes, and generally, people who can eat vegetables can eat tomatoes. I am inclined to think, also, that tomatoes should not be eaten with other vegetables, because tomatoes are acid, and this acidity interferes with the digestion of starch. On the whole, it may be that the tomato, from a dietetic standpoint, should be regarded as a fruit rather than as a vegetable.

3. What is the best underwear for winter?

Ans.— Not woolen next the skin, but linen. The advantage of linen next the body is that it absorbs moisture quickly and passes it out quickly, so that the skin never remains wet. Woolen takes up moisture and retains it; half a dozen linen shirts may be dried in the time required for one of woolen. Woolen also keeps up a friction with the skin, thus causing undue perspiration. If necessary, a woolen garment may be worn outside the linen, for warmth.

4. Why does beefsteak contain germs?

Ans.— Because the beef is partly decomposed when put on the market. The "best" Christmas beef is kept three months before it is offered for sale. Scientific investigation shows that germs begin to decompose beef forty-six hours after it is killed.

5. What is your opinion of glycozone as a remedy?

Ans.— Glycozone is a solution of ozone in glycerin. Ozone is simply active oxygen. Glycozone is unquestionably an ideal disinfectant, and a valuable remedy in cases in which it is desired to destroy germs. It has the advantage over other disinfectants that it is not poisonous, and yet is destructive to germ-life.

6. Would moderate smoking be injurious to one who has congested liver and hyperpepsia?

Ans.— There is no such thing as moderate smoking, and there is no such thing as moderate drinking. The least use of tobacco and the least use of alcohol in any form is immoderate, because it is poison and worthless. We talk about the moderate use of wholesome things, but there is neither reason nor sense in talking about the "moderate" use of evil things. You might as well ask, "Is it well for a man to swear, lie, or steal moderately? for it amounts to the very same thing. To take a poison into the body is as truly a violation of divine law as is swearing, lying, or stealing. The divine law teaches us that we should take nothing poisonous, impure, or obnoxious into our systems; hence, if we do so, we are sinning; and there is no such thing as moderation in sinning.

7. What is the best treatment for clearing the complexion?

Ans.— I often wonder why ladies are so especially interested in the complexion of their faces. They ought to be interested in the complexion of their whole bodies. It is not of much consequence what the complexion of the face is if the color of the body in general is right. A clear complexion all over is an indication of a sound body. In England, when a pugilist is in training for an encounter in the ring, his trainer knows by his complexion when he is ready for the fight. He says, "This man is in the pink of condition, because his skin is as clear and white as a woman's." The skin is a signboard for the whole body. If a person has an unhealthy looking complexion, a dry, inactive skin, it is an indication of the unhealthy condition of his body all through. If his skin is dingy, his nerves, bones, and glands are dingy; his very blood is dingy. It has been found by post-mortem examination that when a man has jaundice, his brain is as yellow as his skin. So the place to begin in the work of purifying the complexion is with the whole system.

A lady once asked me if I thought oatmeal was good for the complexion. I said, "Yes,— oatmeal outside and inside." Second-hand foods, like beef, mutton, oysters, pork, and things of that kind, contain more or less impurities which contaminate the body and have a tendency to cause sallowness. Bathing is a good thing for the complexion; a cool morning bath will tone up the skin, invigorate the appetite, and stimulate the

vital processes. But the best cosmetic of all is a pure diet. People who have been brought up on a vegetarian diet have pure skins. Healthy little children always have clear skins, but as they get older, their skins become dingy and sallow, simply because they have learned to abuse the laws of life and health, and have indulged their appetites with unwholesome things.

8. What is the remedial value of hydrochloric acid? How long should it be taken?

Ans.— Hydrochloric acid is temporarily helpful when a person has lost the power to make it, but he must not keep on taking it. All the good that can be received from it, is during the first three or four weeks. If the practise is carried beyond that time, the stomach will forget to make it. This is on the same principle that if you make a practise of toasting your feet over a register, they will by and by lose their power to keep warm. If you are troubled with cold feet in the winter, it is better to take cold baths than warm. The stomach should be stimulated to make hydrochloric acid. The swimming-bath and similar measures of treatment will do more toward this end than any ordinary medicines.

9. I find that "Pancreatic Emulsion" helps me to assimilate food. Is there any harm in its use?

Ans.— It is like all other similar preparations, in this respect: If a person uses it and relies upon it, his pancreas will cease to make pancreatic juice. Good, sweet cream is an emulsion which is far superior to this and all similar articles.

10. Can a child three years old be cured of tonsillitis otherwise than by removal of the tonsils?

Ans.— Yes. It is often better to cure the tonsils than to remove them. As the child gets older, the difficulty, as a rule, will diminish. But if the tonsils are enlarged, they are diseased; then they are not only of no service, but are a source of danger, because they have crypts and hollow places, or pockets, in which diphtheria and angina germs develop and propagate, weakening the tonsils so that an acute attack of tonsillitis follows. Besides, in this case, the system of the child is all the time being infected by the deadly poisons produced, which are spread all through the body. Such tonsils should be removed.

11. Could a person accustomed to a meat diet change at once to a vegetarian diet?

Ans.— Yes. Doctors always prohibit the use of beefsteak in cases of fever, and there is not only no danger, but the patient is better off without it. However, when a person is in ordinary health, meat should not be discarded unless something which contains the same nutrient properties is substituted in its place. If you put nut products in the place of beefsteak, you have a larger proportion of real beefsteak than you would get in the beefsteak itself; for instance, in a pound of malted nuts there is a pound of beefsteak besides digestible fats. So by giving up beefsteak, you are losing only the decayed and dead particles of blood, the germs, and the poisons produced by the germs, the urea and uric acid, the xanthin and other harmful substances which are found in meat, so that no injury could possibly result from a sudden change.

12. What causes the torpid liver of the South? What should a Southerner do to keep his liver active and to cure biliousness?

Ans.— The cause is the bilious diet and not a bilious climate. The Southerner must eat good, hygienic food. He can get it at home. There is an abundance of peanuts in the South, and a pound of peanuts contains double the amount of real food found in a pound of beefsteak. It is

surprising that all kinds of fruits are not raised in the South. They can be easily cultivated there, especially small fruits.

13. What is the difference in the effects of the use of narcotics and of water?

Ans.— All the difference that there is between black and white or between right and wrong. A narcotic relieves pain simply by hiding it; whereas, the application of water, properly made, relieves pain by removing it. You can never relieve pain by means of hydrotherapy unless you strike at the cause of the pain. On the other hand, opium and other narcotics relieve pain, no matter what may be the cause of it. They disregard the cause. They simply stupefy the whole man. It is the same as if there were a criminal in this room and an officer should arrest the whole of us, including the criminal, and drive us all into the "pen," as the jail is called in Chicago. Now here is a man who has pain in the side. You wish to arrest that pain, and you give him opium; it stupefies every nerve in his body, so of course the pain is relieved. When using rational remedies — for instance, hot and cold water — the pain is not relieved in that way; you can not benumb a man all over with water unless you freeze him solid. But water relieves pain by removing the cause of that pain,— the real criminal, and not the whole audience, is arrested and removed.

14. How long ought one to remain in a swimming-bath?

Ans.— A person not accustomed to the water should not remain in the bath more than five minutes. Swimming is one of the most healthful exercises. A person who goes into the bath with his back humped over must straighten up when he swims; he must also make those movements which raise the chest, and he must bring the abdominal muscles into play. Swimming is one of the best things in the world to correct a bad poise in sitting or walking, and one of the best of exercises for expanding the lungs. It is an excellent way to end a hot treatment; one will thus receive twice the benefit that he would if he came out of the bath heated.

PLANT A TREE.

He who plants a tree
Plants a hope.
Rootlets up through fibers blindly grope;
Leaves unfold into horizons free.
So man's life must climb
From the clods of time
Unto heaven sublime.
Canst thou prophesy, thou little tree,
What the glory of thy boughs shall be?

He who plants a tree
Plants a joy;
Plants a comfort that will never cloy;
Every day a fresh reality,
Beautiful and strong,
To whose shelter throng
Creatures blithe with song.
If thou could'st but know, thou happy tree,
Of the bliss that shall inhabit thee!

He who plants a tree
He plants peace.
Under its green curtains jargons cease,
Leaf and zephyr murmur soothingly;
Shadows soft with sleep
Down tired eyelids creep,
Balm of slumber deep.
Never hast thou dreamed, thou blessed tree,
Of the benediction thou shalt be.

He who plants a tree
He plants love;
Tents of coolness spreading out above
Wayfarers he may not live to see.
Gifts that grow are best;
Hands that bless are blest;
Plant; life does the rest!
Heaven and earth help him who plants a tree,
And his work its own reward shall be.

— *Lucy Larcom.*

A POINT FOR THE WAR DEPARTMENT.

THE WINNER.

THE winner of the great walking match in Germany, referred to elsewhere in this number of GOOD HEALTH, is twenty-five years old, and has been a vegetarian for five years. This young record breaker, Herr Karl Mann, bids fair to become celebrated. In an interview accorded the *Vegetarian*, London, he gives a very interesting account of his training and the match. Until after his eighteenth year he had been a frail, weak boy, "with no energy at all." Now he feels "equal to any amount of physical and mental work," and is "conscious of a superfluity of health." He lives very simply, and is always trying experiments in diet. For two months before the race he had not touched pulse of any kind. For six weeks before he had been living on "the raw diet," and he said that it suited him "capitally." He eats chiefly fresh fruit, vegetables, and milk, but uses very little whole-meal bread, being of the opinion that men shut up in offices all day require very little nitrogenous food. During the famous seventy-mile walk he ate exclusively fresh fruit,— mostly strawberries,— lettuce plucked from the fields in passing, and bread and milk.

So far from being accustomed to walking races, he said that this was his first experience. During the month preceding the match his only special training consisted of several long walks on Sunday. But he makes it a practise to exercise with dumb-bells and in other ways at home. His occupation is that of a corresponding clerk, and he sits at a desk nine hours a day.

Herr Mann did not enter upon the race with any idea of beating records, or of showing the superiority of a vegetarian diet. The race originated with the Cyclist Club of the Berlin Union of Amateur Gymnasts, and the object was to prove the advantage of gymnastics as a general training for the body, and to disprove the assertion that cycling incapacitates one for other kinds of muscular exercise.

As it turned out, during the walk Herr Mann met some higher officers attached to the Ministry of War, and they inquired about the race. When told that he was a vegetarian and that to the best of his knowledge the next three of the racers ahead were likewise vegetarians, they manifested great interest, and invited him to visit them at the Ministry of War next day. He did so, and gave them particulars as to his diet. They then requested him to send in a full report to the Medical Department of the War Office.

The *Vegetarian* gives the following details of the race: —

"On Sunday, June 26, a seventy (English) mile walking race took place near Berlin, under the auspices of the Cycling Club of the well-known Berlin Union of Amateur Gymnasts.

"There were twenty-five entries, seventeen flesh-eaters and eight vegetarians. All left together at 4 : 13 in the morning. The weather was unfavorable, with heavy rain in the latter part of the afternoon. The first six or eight miles were over a good macadamized road, but afterward the route lay mostly along poorly made country roads without footpaths. No pacemakers were allowed.

"RESULT.

"1. Karl Mann, vegetarian, 14 hrs. 11 mins.; 2. Emil Makowski, vegetarian, 14 hrs. 32 mins.; 3. Fritz Badestdin, vegetarian, 15 hrs. 34 mins.; 4. Wilhelm Damm, vegetarian, 15 hrs. 59 mins.; 5. Paul Schirrmeister, vegetarian, 17 hrs.; 6. Hermann, Zerndt, vegetarian, 17 hrs.; 7. Friedr. Zahrt, flesh-eater, 17 hrs. 32 mins.

"There were no further arrivals. Nos. 5 and 6, it should be mentioned, missed the road, and walked *seventy-five* miles instead of only the seventy allotted. With the exception of Nos. 3, 4, 5, and 6, all competitors were gymnasts, and members of the Berlin Union of Amateur Gymnasts.

"Of the non-arrivals, the two vegetarians, Herren Puschendorf and Bertram, retired at fifty-six and thirty-seven miles respectively; the failure of the former being caused by wearing defective foot-gear. Eleven of the flesh-eaters had retired before, or shortly after, the completion of the thirty-eighth mile.

"The six vegetarians all came in, as certified by the official judges, in excellent form. The only arriving flesh-eater, who finished more than half an hour after the last two vegetarians (notwithstanding their having made five miles more than he), after calling for brandy, put up in the village for the night.

"There appears to be no standard road record for seventy miles; but the fifty-six-mile (twelve German mile) record has now been beaten by the winner, Herr Mann, by twenty minutes."

THE FOOD OF PARADISE.

THE following extract is from an article with the foregoing title, in the *Theosophist* for March, 1892. The *Theosophist* is published at Adyar, near Madras, India. Colonel Olcott, the editor, in a note, says that the article was compiled from stenographic notes taken of a conversation between a Hindu gentleman and himself at Adyar. He states that the gentleman occupies one of the highest official positions in India, and is a man of brilliant endowments. His change to a diet of fruits and nuts was attended, as in the case of others, with strikingly beneficial results. He speaks of diabetes as the scourge of the modern educated Hindu class. This diet cured it.

"All cereals such as paddy (rice in the husk), wheat, barley, oats, grow only under cultivation, and are nowhere to be seen in a wild state. The inference is that before man cultivated cereals he must for thousands of years have lived upon something which grew spontaneously affording proper nourishment; for it can not be contended that with the advent of man on this globe, he at once took to cultivating cereals, which now form so large a proportion of the food of the human race. Cereals are nothing but the seeds of various kinds of grass, and they make very unsuitable food for man because of the large quantities of starch they contain. The starch in rice is as much as eighty per cent., and in other cereals it varies from fifty to seventy per cent. Starch is insoluble, and the acid gastric juice of the human stomach has no effect whatever in dissolving it. It requires to come in contact with the alkaline juices of the intestines before it can be made soluble, and then, after conversion into sugar by the liver, it becomes available for physiological purposes. This intestinal digestion and the subsequent manufacture of the product into sugar together occupy from eight to ten hours, and the whole process is a great drain upon the vitality and the nervous energy of man. If, instead of taking starch food, man lived

upon any article containing sufficient nitrogen and sugar, he would save his system this unnatural waste of vitality and nervous energy. Animal meat is also unsuitable as human food, though less exhausting than starchy food. The flesh of every animal contains a good deal of decayed and decaying tissue. . . . The introduction of these waste materials into the human system has been admitted by competent investigators to be most injurious.

"Fruit and nuts seem to be the most natural food for man. They contain all the elements of nutrition which the human system requires, and which must have been man's proper food long before he formed his present habit of meat-eating and starch-eating. They contain all the elements of bone, muscle, blood, and nerves in an agreeable and easily digestible form; the nitrogen, carbon, and saline matters contained in them being also sufficient for the sustenance of man in robust health and active life.

"Conformity to nature's laws in the matter of food, it will be admitted, must conduce to longevity. We believe that man can attain to his maximum natural length of life only under the fruit and nut diet: first, because of all known foods it makes the smallest demands upon the life force in man for its proper assimilation; and, second, because of all known foods it leaves the smallest quantity of earthy sediment in the system. . . . If by living upon their natural food men save their system from eight to ten hours of exhausting labor for every meal taken, the sum total thus saved day after day must enable them to live in health and strength for quite twice the period which is now reckoned as the ordinary term of human life.

"What is meant by the feebleness and decay of old age? — It means that tissue is wasted more rapidly than it can be replaced, and that the joints of the body become stiff and the functions of the brain impaired. To our mind, the cause is the fact that the unnatural diet of man leaves a deposit of earthy matter in the joints, and in the capillaries, which transmit to all organs the blood that nourishes and builds them up. In the case of the minutest capillaries, the deposit in time becomes so large as completely to fill them, and thus prevents their carrying the vital fluid to the organs concerned. To speak of the stiffness of old age is only another way of saying that the vessels of circulation have become entirely or partly choked by the earthy sediment separated from the mass of food the individual has lived upon. Now, fruits and nuts contain a minimum of earthy matter, and the maximum of readily digestible nutritious matter. The European is longer lived than the Hindu, not because his meat diet is in itself more nutritious, but because it contains a smaller proportion of earthy matter than the cereals upon which a Hindu lives. If asked why the modern educated Hindu is shorter lived than his ancestor of a few generations ago, or than his old-fashioned neighbor, we would say that the reason lies in the numerous dietetic errors the modern Hindu daily commits, and not, as is alleged by some, in his having more intellectual work to do. Where the old-fashioned Hindu takes only two meals a day, and often only one, according to age or climate, his modern neighbor must have three and four meals a day, not to mention tea, coffee, and other stimulants. This unnatural diet causes numerous diseases, premature decay, collapse of the digestive organs, and exhaustion of vital energy."

Colonel Olcott adds to the foregoing: —

"We will not at present enlarge upon the general considerations suggested by the subject, as this is not intended as an exhaustive treatise, but only a hint or two

thrown out for the benefit of our readers. We may, however, refer to the personal experience of our friend whose statements we have above recorded. He has for the last six months lived upon the natural food,— fruits and nuts. His attention was attracted by an American treatise on the subject. The arguments of the author seemed so reasonable that he determined to make an experiment upon himself. His official position is one which gives him a vast amount of anxiety by reason of the infinite details of public business which he is obliged to supervise; and although of a naturally strong constitution and of temperate habits, he found himself with advancing years beginning to feel some of the premonitory symptoms of broken health. He was attacked by diabetes, which is nothing more than indigestion very deeply seated. He suffered from sleeplessness, and after a hard day's work felt excessively fatigued. He did not change his food gradually, but at once, from the cereal food to fruit and nuts. Within twenty-four hours he felt like a young man; all symptoms of diabetes ceased; his mind felt clearer, his body invigorated, his sleep became healthy. He has been on this diet for about six months, and feels younger and stronger than for many years.

"His diet now is the following: 6 or 7 A. M., a cup of coffee with milk. 11 A. M., three or four plantains (bananas), a few almonds or other nuts, an apple, a few oranges, or any other fruits in season, and eight or nine ounces of boiled milk; occasionally also a small quantity of dried fruits, such as dates, plums, raisins, etc. At 7 or 8 P.M., the same food as at 11 A.M. He eats no bread, no rice, no wheat,— nothing except the articles above enumerated. He has suffered no substantial reduction of weight, but is more muscular than under the old cereal diet. He has induced others to try the experiment, and the testimony of all is the same,— they feel stronger, healthier, and more vivacious in spirit than they did before. Among these are two Brahmans who were quite healthy and free from disease when they began the experiment. One of them is well known at the Adyar headquarters, and occupies a high official position. The testimony of these gentlemen will be cheerfully given in support of the views herein expressed.

"A final consideration, and not a small one, in favor of the fruit diet, is that one who lives upon it has no longer thirst to be appeased by water-drinking,— an important consideration in India, where the water is so poor. In the fruit-juices is to be found water in its purest, most delicate, and best-distilled form. One thus gets rid of all the troubles which come from the drinking of impure well, river, or spring waters. Even in the hottest summer and under prolonged physical exertion, there is no feeling of thirst for one who lives upon fruits and nuts."

RECIPE FOR A HAPPY DAY.

TAKE a little dash of cold water,
A little leaven of prayer,
A little bit of sunshine gold
Dissolved in morning air.

Add to your meal some merriment,
Add thought for kith and kin,
And then, as a prime ingredient,
A plenty of work thrown in.

Flavor it all with essence of love
And a little dash of play;
Let a nice old book and a glance above
Complete the well-spent day.

— *Selected.*

Drugs or the Turkish Bath.

The superiority of the Turkish bath over any drug, in the treatment of inebriety, is shown by Dr. Charles H. Shepard, in a paper read at the last annual meeting of the American Association for the Study and Cure of Inebriety, and published in the *Journal of Hygiene*. Dr. Shepard states that the practise of introducing drugs into the stomach for the purpose of counteracting the paralyzing effects of so-called stimulants, as a rule results in an additional poison, which the system is called upon to throw off through the excretions of the body. Thus, while the symptoms may be changed, the trouble is usually increased rather than relieved.

On the other hand, the moment the sufferer enters the hot-air bath, the skin is called upon very gently to discharge the refuse from the system. The process of elimination is steady and constant, and the longer he remains in the bath, the more waste material is thrown off. The skin is stimulated, and the circulation of the blood increased.

As the blood is brought to the surface and cleansed of its poisons, it goes back to every organ to do better work, to improve every function, by supplying purified material for repair and nutrition.

Even when the work of destruction by alcohol has been going on a long time, a better condition of the system is brought about by this treatment. If the kidneys have been inflamed, the irritating and obstructive particles are eliminated, and there is less determination of blood and nervous energy to the part. This vivifying process goes on, not alone with the kidneys, but throughout the body. The massage which follows the bath completes the soothing effect, and, to a large degree, takes the place of exercise.

By the Turkish bath, then, not only are alcoholic and other poisons removed from the body, but this is done without extracting any living tissue or vitality. More than this, there is no poison kept in the system to do harm, as is usually the case when drugs are administered.

The mucous surfaces of the heavy drinker are in a chronic state of inflammation. The effect of the hot-air treatment is to reduce the inflammation, thus relieving the craving for stimulants. The writer mentions the statement that in no country has inebriety been found coexistent with the bath. He quotes Dr. Senn, president of the American Medical Association, as saying that the Turk is an almost complete abstainer; that it would be difficult to find a habitual drunkard anywhere in his country.

Alcohol Destroys Vegetable Life.

Experiments showing the effect of alcohol on plant life, made by Dr. F. W. D'Evelyn, of San Francisco, are described by the Chicago *Tribune*. Thorough investigations have been carried on, extending through a period of four or five months. Onions, cucumbers, potatoes, radishes, turnips, have been subjected to careful tests.

The experiments show that the sprouts of onions growing in pure water will measure seven inches at the end of thirty days; those growing in water containing five per cent. of alcohol will measure five and one-fourth inches; those in ten per cent. of alcohol, four inches; those in fifteen per cent. of alcohol, two and three-fourths inches; and those in twenty per cent. have grown only one inch, while the onion in thirty-five per cent. has withered, and shows no signs of life.

A microscopic examination reveals the fact that the cell life of the onion has been interfered with in proportion to the percentage of alcohol in the water in which

it grew. The alcohol not only stunts the growth of the plant and seriously interferes with the cell formation, but the growing sprouts have a faded appearance in proportion to the percentage of alcohol in the food or water.

From a series of experiments with onions, potatoes, and turnips, placed in pure alcohol, Dr. D'Evelyn learns that the onion loses in weight 33.50 per cent., the potato 40.05 per cent., and the turnip 42.75 per cent. It is noticeable that the decrease in weight is in proportion to the amount of water contained in the two. The change that has taken place in the vegetable cell, according to the investigation, is similar to that found in the corpuscles of the blood of a habitual drunkard. In fact, the first line of experiments was with the human blood. It was found not only that alcohol has a deteriorating effect on the human blood, but that the continued use of it will bring about a condition of the blood in which the corpuscles are small and contracted, and quite different from those in the blood of a healthy, sober man ; also that the corpuscles, when acted upon by alcohol, do not nourish the nerve system properly ; it is this craving of the nerves for stimulants or food that creates the appetite for alcoholic drinks.

Dr. D'Evelyn finds that it is almost impossible completely to eradicate the effect the alcohol has had upon the vegetable cells. From potatoes and onions grown for a time by feeding them with a low percentage of alcohol, he has raised other potatoes and onions. The new crops show that the effect of the alcohol upon the cell life in the parent plant has been transmitted to the second growth, but not in quite so marked a degree, while the third growth shows the trace of alcoholic effects, with a stronger tendency to resume normal conditions.

The effect of the alcohol upon the parent plant is not lost until the fourth and sometimes even the fifth generation, and then only in cases where the plant has been fed on less than six per cent. alcohol. Onions and potatoes that have been fed for thirty days with twenty per cent. alcohol refuse to propagate, and the plants grown from those that have been fed on ten per cent. alcohol are puny and weak ; in the case of the potatoes, while the stalks are fairly healthy, the tubers are small and few in number.

Four Billion Cigarettes.

Statistics may not be interesting, but they are sometimes serious. G. Edmund Hatcher, special correspondent of the Nashville, Tenn., *American,* furnishes the following : —

"Ten years after the smoke of the first cigarette was blown from the lips of the pioneer of American cigarette smokers the annual consumption amounted to 1,000,000. That was about the year 1874. The large number of foreigners coming to America during the Centennial at Philadelphia in 1876 gave the habit another impetus, for cigarettes were almost common abroad long before they were known in America; and from that time on the consumption grew enormously each year until it reached the billion mark in 1884. Five years later, or in 1889, government statistics showed the consumption to be 2,000,000,000 annually, and in 1893 it was 3,000,000,000.

"A comparison of these figures and periods of progression in the habit will give some idea of the rapidity with which it spread. For instance, while it took a period of five years, from 1884 to 1889, for the consumption to increase from 1,000,000,000 to 2,000,000,000, it required only four years to add another billion to the statistics. In 1894 and 1895 the figures made another big jump; and in 1896, the

last year in which statistics along this line are obtained, the number of cigarettes of all kinds, foreign and home-made, said to have been sold in this country, approximated the enormous sum of 4,000,000,000.

"Stop just a moment and think of the significance of these figures. Placed end to end, these 4,000,000,000 cigarettes would almost encircle the earth. Laid side by side two inches deep, they would cover a ten-acre field. If all the smoke arising from all the cigarettes consumed every year could be concentrated in one vast cloud, the density thereof would obscure even the radiance of the noon-day sun. Most serious thought of all, if the money thus annually expended were turned into useful channels, it would put a pair of shoes on every child in the country, and purchase the necessaries of life for 100,000 families!"

Sick-Headache, and How to Avoid It.

Sick-headache means germs and foul matter in the alimentary canal, especially in the stomach. From this great absorbing center, the whole body is poisoned. Often these headaches are periodical. Then nature makes an effort to expel the foul matters which are in the stomach by vomiting, or in some cases by a diarrhea, and also by a lack of appetite, which is intended to give the stomach a chance to rest. It is the experience of the writer that these attacks of headache are always preceded by some well-marked symptoms; by noting and profiting by these, and by using common-sense treatment, no one need agonize through such painful periods at any time.

Among the first symptoms are dulness, sleepiness after eating, floating specks before the eyes, a coated tongue, and often constipation. Sometimes there is a voracious appetite. In fact, large quantities of food are taken into the body and retained there, and but little is eliminated. The natural result is that there is stagnation from clogging up with spoiled food, retained fecal matter, and unhealthy secretions in the stomach and bowels. The absorbents are at work, and as they have to supply the blood with such matter as they find in the alimentary canal, the poisons produced by the circulation are carried to all parts of the body. Much blood naturally goes to the head, and with it a large amount of poison.

Common sense would say that when the source of a disorder is known, the proper thing would be to remove it; instead of giving some opiate to quiet the symptoms, which are only the protest of the bodily organs against abuse, it would be more rational to relieve them by removing the unhealthy matter from the stomach and bowels; or if the treatment is begun in time, all that may be needed is a fast of twenty-four hours, and free hot-water drinking to give the system time to dispose of the excess of waste matter. If there is evidence of spoiled food in the stomach, a lavage may be needed. When there is constipation, a mild cathartic or an enema may give relief.

Many cases of this trouble have come under the care of the writer, and it has often been demonstrated that if the patient will follow directions, and has the will-power to stop when the first symptoms are manifest, and wait for nature to remove the waste from the body, the headache and all the other symptoms will disappear.

MUSTARD will raise a blister on the inside as well as the outside of the stomach. The difference is, that we can not see the blister on the inside, and the inside of the stomach can not complain, not having nerves, as has the outside.

Sanitation in the Sweatshop.

A graphic picture that brings home the relationship between hygiene and philanthropy is described by Walter A. Wykoff in "The Workers" in *Scribner's Magazine* for July: —

"The open door revealed the customary sight of a room perhaps twenty feet square, with daylight entering faintly through two unwashed windows, which looked out upon the level of the street. The dampness showed itself in dew-like beads along the walls and on the ceiling, which I could easily reach as I stood erect. In spite of its being winter the dingy walls were dotted with black flies, which swarmed most about a cooking-stove, over which, stirring a steaming pot, stood a ragged, disheveled woman, who looked as though she never could have known any but extreme old age. In the remaining floor space were crowded a dozen machines or more, over which, in the thick, unventilated atmosphere, were the bending figures of the workers. Oil-lamps lit up the inner recesses of the room, and seemed to lend consistency to the heavy air. From an eye here and there which caught his in a single movement, the unionist received a look of recognition, but not a head was turned to see who had entered, and the whir of feverish work went on unchecked for an instant by our coming.

"While the unionist was talking to the sweater, I walked between the close line of machines over a floor covered with deep accumulations of dirt and shreds of cloth and broken threads, to where, in a corner, a group of girls were sewing. The oldest among them may have been twelve and the youngest could have been a little over eight, and their wages averaged about seventy five cents a week for hours that varied widely according to the stress of work.

"Near the corner was a passage, and through it I could see into a small room which had no window, nor any opening but the door; there, in perpetual darkness lit up by one oil-lamp, was a man who, for twelve (and sometimes fifteen) hours a day, pressed the new-made clothing for a living. . . .

"We were on the point of leaving when a heavy footfall sounded, and the door opened to the touch of an inspecting officer, whose glowing health and neat, warm uniform were as though a prosperous breeze were sweeping the stagnant room. The work, however, was as unaffected by his coming as it had been by ours. Not a sewer noticed him, and the stitching of machines went racing on with unabated swiftness. Only the 'old man' watched nervously the movements of the officer as he walked about the shop making note of the bad air and the filth upon the floors, and the group of little girls, and the dark, unventilated chamber beyond. . . .

"'Look here,' I could hear him say, 'you've got to clean up here, and right away. The first thing you know you'll start a fever that will sweep the city before we can stop it.'

"The young Hebrew had stopped his work, and turned half round in his chair until he faced the officer. There were deep lines in his haggard, beardless face, and his wolfish eyes were ablaze with the sense of sharp injustice.

"'You tell us we've got to clean up,' he answered in broken English, lifting his voice to a shout above the clatter of the machines. 'What time have we to keep clean when it's all we can do to get bread? Don't talk to us about disease; it's bread we're after, bread!' And there sounded in the voice of the boy the cry of the hungry for food, which no man who hears can ever forget."

The Whole Man.

Calvin M. Woodward, Ph. D., says, in *Success:* —

"I have often used the figure of a shapely, symmetrical tree, which grows in an open park, where the light can shine in on every side. Its branches reach out on all sides; it lifts its leaves and buds to the refreshing rain and the strengthening sun on every hand, and it grows 'a thing of beauty and a joy forever.' On the other hand, the tree which stands in the edge of the woods, or a plant which grows by a single window, grows deformed; it leans to the light, it becomes one sided, it is but half developed. This lack of symmetry typifies the product of an education which ignores one half of the pupil's brain, and which throws him upon the world with an unsymmetrical development. Here is where manual training comes in; it shuts nothing out; it opens more windows; it lets in more light. A modern, all-round education fits one now to take hold with zeal, with intelligence, and with a reasonable prospect of success, of any activity or occupation he may choose. I put my educational creed into six words: 'Put the Whole Boy to school;' and another well adds, 'and you will have a Whole Man by and by.'"

No Forgiveness.

It is said that the violation of natural law is never forgiven. It is said that if you put your finger in the candle, it will burn, pray as you will; and if you fall from your horse, you will break a bone, however pious you may be; whether the bone breaks or not depends, not upon your piety, but upon your age. Is it indeed true that there is no forgiveness in natural law? What a strange-looking audience this would be if there were none! The boy cuts his finger, and nature begins to heal it; he breaks his arm,—nature begins to knit the bone; he burns his finger,—nature provides a new skin. Nature, that is, God, implants in man himself the help-giving powers that remove disease; and, in addition, stores the world full of remedies, so that specifics may be found for almost every disease to which flesh is heir. The laws of healing are wrought into the physical realm; they are a part of the divine economy; and shall we think that He who helps the man to a new skin and to a new bone cares nothing for his moral nature, and will not help him when he has fallen into sin?—*Lyman Abbott.*

Bismarck's Habits.

From a German writer who was familiar with Bismarck's private life we learn some details of his personal habits. He was an early riser. He slept in an unpretending room, and from choice on a military cot or iron bedstead. His room was so plain as to be almost uncomfortable in these days of conveniences and luxury. His morning meal was simple, and usually taken in his room. After the business of the forenoon, he took a walk in the palace gardens, and then a frugal luncheon. The afternoon was devoted to lighter business. Dinner at six was the hearty meal of the day. His usual dinner consisted of soup, a roast, vegetables, black bread, and a light wine or beer. At eleven o'clock he went to bed. This was his daily program during his public life at the head of German affairs.

VANCE THOMPSON, in the *Musical Courier*, describing the "Black City" of Paris, says that for a hovel there, consisting of "a few boards standing on the ground, enclosing a cube of foul air" the tenant must pay two francs fifty centimes a week.

EDITORIAL.

A MIGHTY MAN FALLEN.

BISMARCK was not only a mental Goliath, head and shoulders above most of the men of his time, but he was also a man of almost gigantic stature, and possessed of physical powers of the most extraordinary character. Though in his youth given to extravagant dissipations of all sorts, swallowing enormous quantities of champagne and porter as the accompaniment of prodigious dinners demanded by a tremendous appetite, he still preserved, even when long past the meridian of life, an amount of physical vigor and endurance equaled by few men of his time. He was also from his youth an incessant smoker, and continued, even to the last day of his life, to imbibe freely of beer and champagne.

For some time before his death the papers represented him to be in an almost moribund condition, nevertheless his daily bill of fare, according to the press reports, included, even to the very day of his death, such articles as ham, caviar, eggs, beer, and champagne. A German newspaper, doubtless basing its opinion upon the character of the old chancellor's bill of fare, contradicting the common reports, pronounced his condition to be fairly good, notwithstanding the presence of violent pains, which, as a Western editor dryly suggests, must have been rather out of place, since they appeared in the two extremities of the body, the face and the feet, rather than midway between the two, which would seem to be a more appropriate place of attack.

A day or two before the death of this remarkable man, his physician pronounced his lungs, stomach, and kidneys sound, and suggested that he might yet be able to finish out his ninety years, notwithstanding the severity of his suffering. There was no evidence of degeneration of the arteries nor of any of the important vital organs. He was, in fact, as sound in body at eighty-three as many men are at fifty.

The lesson to be drawn from these facts is not that smoking, drinking whisky, champagne, and beer, and eating ham and caviar, are practises conducive to health and long life. Bismarck's case is certainly similar to that of the Western farmer, almost a centenarian, who, after a lecture against tobacco-using delivered by Sam Jones, the eccentric evangelist, arose and presented himself as an evidence that the use of tobacco could not be harmful, for he had used it ever since he was a boy, and now, at the age of eighty-two, was still hale and hearty. Mr. Jones, not at all impressed, replied to this sortie that his friend evidently enjoyed the advantages of a constitution so vigorous that if he had never smoked, he would probably have lived on forever, unless killed by accident.

Bismarck was certainly a man of most astonishing physical powers, and the evidence goes to show very clearly that with no symptoms of even incipient degeneration at eighty-three, and this notwithstanding the bad usage to which he had subjected his system for nearly three fourths of a century, he might easily have lived to a century and a half if he had husbanded his vital powers and scrupulously observed the laws of health.

A lesson of importance which may be drawn from the life and death of this Titanic man, is the fact, pointed out in many of the newspapers, that he seems to have been the last representative of a class of men, small in number, who have combined with marvelous mental powers and ability equally remarkable physical vigor and vitality.

The outlook for Bismarcks and Gladstones for the future is exceedingly unpromising. The race is deteriorating at a rapid rate. Bismarck died prematurely at eighty-three.

The average man dies prematurely at forty-two years of age, and half the race in civilized lands dies before the age of five years. Nearly all of these die as did Bismarck, not through decay of the vital powers, a wearing out of the vital machine, but from habitual abuses, neglects, and excesses. The death of such a man as Bismarck at eighty-three can not be considered in any sense a natural death, but must be reckoned as due to violence, to defiance of the divine law in our members, which commands temperance, frugality, and simplicity as the price of health and longevity.

The young man who imagines that because Bismarck was able to do a prodigious amount of work, and to hold time at bay for more than fourscore years, while subsisting upon the diet of a scavenger and steadily puffing away at an old German pipe, will find himself as grievously mistaken as the young man who, with an inherited fortune of a thousand dollars, undertakes to imitate, in expensive amusements, with fast horses, yachting, gambling, and big dinners, some young profligate whose frugal sire has heaped up for him millions to burn.

THE VEGETARIANS GOT THERE FIRST.

SEVERAL interesting events have recently occurred in the athletic world which must serve in a most useful way to arrest the minds of intelligent people upon the subject of diet, and especially to call attention to the question of eating or discarding, as food, the flesh of dead animals.

Fourteen flesh-eaters and eight vegetarians entered upon a walking contest, the course being seventy miles. Six of the eight vegetarians arrived at the goal before the first flesh-eater appeared, and the other two would have been equally in evidence had they not lost their way and thereby increased the distance some five miles.

In a bicycle contest between three well-known English clubs, the Shepherd's Bush, the London Central, and the Vegetarian, the disciples of Pythagoras won in both the three-mile heats and the half-lap contests, and were easy victors, leaving the flesh-eaters in disgrace.

These performances ought not to surprise us, however, for five years ago, in the celebrated walking contest between Berlin and Vienna, a distance of more than three hundred and sixty miles, there were entered for the race, three vegetarians, two of whom arrived at the end more than twenty hours in advance of the first of the thirteen flesh-eaters.

Those who entertain the idea that the vegetarian is a spindle-shanked, bloodless, inane sort of person, will be not a little surprised at this very practical demonstration of the possession of an unusual amount of brawn and physical endurance. The writer has never known a test of physical endurance in which vegetarians were matched against flesh-eaters under equal conditions in which the vegetarians have not carried off the laurels. These victories have been won in the harvest-field as well as on the bicycle track and in walking matches. The vegetarian generally arrives first and stays the longest.

The vegetarian Chinese and Hindus reached the stage of advanced civilization some thousands of years before the civilization of Western Europe had even begun to dawn. India and China had a magnificent literature, polished and cultivated languages, and a religion that forbade the taking of life and taught the subjugation of self, and had advanced the arts and some of the sciences to a high state of perfection, while the forefathers of the English-speaking race were still cannibals, clad in skins and war paint, wandering through the forests of the British Islands. The civilization of Western Europe is, so to speak, an experiment compared with that of India and China, which, although lacking the enlightening and developing powers of the Christian religion, has shown a marvelous capacity for holding men together in an organized and orderly state. It

is a fact worthy of consideration that there were in the United States in 1896, 10,000 murders,— more in proportion to the population than in any other known country, and that in India the known proportion of murders to the population was less than in any civilized country.

The vegetarian antelope and the vegetarian horse are the fleetest of beasts; the vegetarian reindeer is the most enduring; the vegetarian elephant, the strongest. The vegetarian gorilla is the real monarch of the forest, for he has been known to kill a lion with a club.

Those choicest of nature's products, fruits, grains, and nuts, are magazines of energy in its purest, most potent form. They are veritable parcels of vital dynamite, and are prepared by nature for transmutation by the marvelous processes of digestion and assimilation into the strongest muscle, the most active and vigorous nerves.

The flesh of animals is only vegetable food at second hand, polluted and contaminated by its sojourn in the animal body. Second-hand diet is as much inferior to diet at first hand as is a second-hand coat to a brand new article.

In the long run the vegetarian is sure to be ahead.

RHEUMATISM.

THE ancients believed that rheumatism was the work of a demon inside of a man. This demon tormented him by pains in his joints; the only way to cure him was to drive out the demon by flagellations, or by exposure to the mephitic vapors which arise from caves in volcanic regions, or to the sulphurous fumes from springs. There are places in Italy famous for this purpose. Lady Salvatolli speaks of a little hole in the side of a hill into which people were carried for the cure of rheumatism. There you crouch down upon your hands and knees and crawl in for several hundred feet. The passage is lighted by a tallow dip, which is carried ahead of you. By and by you find steam, and can take a Turkish bath. The people of ancient times imagined that these places were haunted by certain genii who drove out rheumatism.

The superstition that rheumatism is an entity which can be driven out, still exists in some countries. In Tartary the *ulema*, or doctor, with a leather bag on one arm and a tea-kettle on the other, goes into the woods to collect his medicine leaves and barks. He carries them home, steeps them, puts them into his bag, and when he is called to visit a patient to prescribe for rheumatism, he looks into this bag for a drug which has the power of exorcising the demon. He writes the name of the drug on a slip of paper, rolls it into a little ball, and gives it to the patient to swallow; the idea is that the demon inside will consider himself notified, when he sees the name of the drug coming down, that the medicine which the name represents will be following forthwith, and that he will be frightened into leaving. If his patient is rich, the Tartar doctor says that the demon is terrible and great, and must be propitiated by a horse to ride. If the doctor gets the horse, he rides away on it himself.

Medicines for rheumatism are advertised in the newspapers and put up in bottles, accompanied by suggestive pictures, and testimonials as to their great curative powers. But it is really the picture and not the medicine that is advertised to cure. You will see, for instance, two pictures with the words underneath, "Look on this picture, and then on that." Here in the one is a poor fellow with his joints all twisted out of shape; but in the other, he is straightened up, and apparently as supple as a cat. Representations like these go a long way with credulous people.

The medical profession long ago found out that rheumatism is not cured by medicine, or by rubbing on liniments, or by exorcising demons. Dr. Austin Flint, of Bellevue Hos-

pital, was, I think, the first physician of this country to discover that rheumatism is a disease not very susceptible to remedies. A little more than twenty years ago, he made the assertion that according to his experience drugs do not cure rheumatism. This might be surmised by any one from the fact that more than a thousand remedies have been suggested for its cure, while if one remedy is good, a thousand are not needed. If you find a long list of cures for the same disease on the books of your physician, you may be sure that none of them is of value. If any one of them could remove the evil, all the rest would be superfluous.

Acute rheumatism, like whooping-cough, chicken-pox, smallpox, or mumps, is an infectious disease. As a rule, when a person takes an infectious disease, if he recovers, he does so within a certain length of time. But chronic rheumatism is not an infectious disease. It is like acute rheumatism simply in the fact that there is pain in some of the remote parts of the body.

Chronic rheumatism is a constitutional malady; it is not a disease of the joints, but of the whole body, and in the great majority of cases, according to Dr. Bouchard, primarily begins in the stomach. Dr. Bouchard found that most people suffering from rheumatism had dilatation of the stomach, a condition caused by taking too much food, or foods which have a tendency to produce gas, such as sweets, sweet-cakes, preserves, ices. These things form gases which stretch the stomach, distending it and causing its walls to become thin. This dilatation obliges the food to remain too long in the stomach, so that poisons are formed. Foods especially favorable to decomposition are roast beef, stewed goose, fried duck, fricasseed chicken, turkey with cranberry sauce, and all similar unnatural dishes. Such proteid substances, of animal origin, contain poisons, which, when circulated through the blood, give rise to rheumatism.

When one has rheumatism, however, it is the luckiest thing in the world if he has it in the joints; because if it is not in the joints, it will be in the heart, the lungs, the pleura, or some other part of the body more important than the joints. This rheumatism of the joints is an inflammation of the membranes of the joints, or of the ends of the bones, or of the ligaments about the joints. Nature can sacrifice the joints more easily than any other part of the body. A whole arm or a leg can be severed without affecting the vital functions of the body, or sacrificing life; but if, for instance, the membranes of the brain should be attacked by rheumatism, life would cease at once. If the valves or membranes of the heart are affected, death may come in a short time. Rheumatism of the heart sometimes causes life-long suffering.

The same condition which affects the joints affects also the arteries and other organs of the body so that they undergo a degenerative process and become brittle and shrunken. A man who has rheumatism becomes prematurely old; senile changes take place in his arteries, and induce premature decay. The functions of the brain fail; the arteries are not supplied with blood; the muscles shrivel and become weak. While this process is going on in the muscles, there are likely to be rheumatic pains in the joints. Muscular pain is one of the most prominent symptoms of this disease.

It is a serious matter for a person to be afflicted with rheumatism in just one simple joint, for it is evidence that his whole body is saturated with poison. Suppose, for example, that a large jar be filled with water in which alum or sugar has been dissolved. Now suppose a thread is dropped into the jar. There will be no crystal deposit on the thread until the entire contents of the jar have become completely saturated with sugar. So when rheumatism begins in the joints, it is evidence that some of the uric acid poisons with which the body is saturated have been deposited around that joint. This deposit could not take place unless the whole body had become saturated with poisons, for the same reason that crystallization could not take place on the thread until the whole solution was saturated with sugar. Hence even a touch of rheumatism is evidence that poisons are being produced rapidly and in great quantities; that saturation has fully taken place, and that the supply of poison is

very great, since it is able to keep the blood saturated, notwithstanding the deposit in the joint. It is a mistake to say, "This joint is a little stiff and sore, especially during rainy weather, but it is n't anything very serious." It is serious, because, as stated, it indicates not only that this joint is affected, but that the whole body is exposed to the deteriorating influence of a destroying poison.

Another evidence of the excessive deposit of poison, is that which is afforded by the urinary secretion. The kidneys carry out as much of this poison as they can, but it is not easy to carry it all off; therefore it is secreted in the urine; a sediment settles in the bottom of the test-tube or the vessel containing the urinary secretion,— a pinkish, whitish, or reddish sediment, or what is called a "brick-dust sediment." If this goes on from year to year without being remedied, very serious results will follow. If the poison settles in the heart or brain, the patient may become hypochondriac or insane; if it settles in the kidneys, the result may be Bright's disease. It has long been known that the brick-dust sediment is the precursor of this disorder. Bright's disease is the result of the irritating effects of the uric acid precipitate which has been accumulating.

This poison, uric acid, which causes rheumatism, produces graver symptoms than any other poison which affects the human race; no other poison derived from the contamination of disease compares with it in its deleterious effects upon the human body.

Unquestionably, the most active cause of rheumatism, as well as of migraine, sick-headache, Bright's disease, neurasthenia, and a number of other kindred diseases, is the general use of flesh food, tea and coffee, and alcoholic liquors. As regards remedies, there are no medicinal agents which are of any permanent value in the treatment of chronic rheumatism. The disease can be remedied only by regimen,— that is, by diet and training. A simple dietary, consisting of fruits, grains, and nuts, and particularly the free use of fruits, must be placed in the first rank among the radical curative measures. Water, if taken in abundance, is also a means of washing out accumulated poisons.

An individual afflicted with rheumatism in any form should live, so far as possible, an out-of door life, taking daily a sufficient amount of exercise to induce vigorous perspiration. A cool morning sponge bath followed by vigorous rubbing, and a moist pack to the joints most seriously affected, at night, are measures which are worthy of a faithful trial. Every person who is suffering from this disease should give the matter immediate attention, as it is a malady which is progressive, and is one of the most potent causes of premature old age and general physical deterioration. American nervousness is probably more often due to uric acid, or to the poisons which it represents, than to any other one cause. In serious cases a few months' sojourn in a well-equipped, scientific medical sanitarium is essential for a recovery.

A PURVEYOR OF DISEASE.

THE slaughter-house was long ago declared a nuisance, and is rarely, if ever, found within the precincts of a small town or village, but just outside, hovering as near as possible to the corporation line. But the country slaughter-house is a nuisance in a much larger sense than is generally understood. Although forced outside of the town limits,— except in the larger cities, which seem to be organized to form the center of a whirlpool, gathering the worst elements into their midst, the slaughter-house continues its work of physical and moral infection in a variety of ways. Wardel Stiles, Ph. D., published, about two years ago, in a prominent medical journal, a startling description of some of the evils that emanate from the slaughter-house. We quote from his remarks as follows: —

"Even if only a few animals are slaughtered each week, the total number may amount to several hundred during the year. Some of

the animals are surely diseased. At least one of the hogs has trichinosis; and when the offal of this trichinous hog is fed to hogs which are raised upon the grounds, the latter can not escape infection with trichinæ. But that is not all. The slaughter-houses are often overrun with rats; the rats feed on the offal, and when feeding on the offal of a trichinous hog, they likewise can not escape infection with trichinæ. Rats act as direct transmitters of trichinosis to hogs.

"Every slaughter-house is a center of disease for the surrounding country, spreading trichinosis, echinococcus disease, gid, wireworm, and other troubles caused by animal parasites, and tuberculosis, hog cholera, swine plague, and other bacterial diseases. The important factors concerned in spreading these diseases are offal feeding, drainage, rats, and dogs.

"From abattoir statistics it is shown that in Berlin twelve per cent. of the cattle slaughtered are tuberculous; in Dresden, 14.4 per cent.; in Upper Silesia, 9.5 per cent.; in Durham, 18.7 per cent.; and in Mid-Lothian (a district in Scotland in which Edinburgh is located), twenty per cent. Of those slaughtered in London, twenty-five per cent. are diseased, and in New York, about twenty per cent."

The foregoing startling facts and statistics ought certainly to cause an arrest of thought on the part of flesh-eaters. Think of it for a moment! Twenty-five per cent. of all the animals slaughtered for food in London are so far advanced in disease that their condition is palpably evident. It is safe to say that another twenty-five per cent., if not so far advanced in disease, are in the incipient stages; the disease-producing causes which sooner or later will result in pronounced morbid conditions, and possibly death, being present and in active operation. Only those animals that are evidently diseased are excluded, even when the inspection-service is conscientiously administered, which by no means is always the case. It is doubtless perfectly proper that the English beef-eater should console himself with the idea that only every third steak or mutton-chop that he eats is diseased, while the New York flesh-eater may boast that his beefsteak is five per cent. better in quality than that consumed by his English cousin.

Another fact which the average flesh-eater ought to consider seriously is that the inspection of the carcasses of animals that have been slaughtered is almost exclusively confined to large cities. It is more than probable that at least nine tenths of all the diseased animals killed in this country are consumed as food,—in other words, the carcasses of most of the sheep, cows, and oxen that are killed just in time to save them from the bone-yard, are buried in human stomachs. It would certainly seem to be a grave mistake to make a potter's field or a rendering-establishment of one's stomach, yet this seems to be the taste of the majority of civilized Americans. There are, however, multitudes of uncivilized Americans, especially in the southern half of the continent, who think differently upon this question, and who live long, actively, and well upon a diet from which flesh food is entirely excluded. The gorilla, the chimpanzee, and the orang-outang are equally active and healthy, and evidently happy, upon a non-flesh diet. No reason can be offered why corpses of any sort — human or beast — should ever be buried in the stomachs of human beings, who, in natural dietetic affinities, are related to the higher apes rather than to the hog and the hyena.

THE NATURAL GASTRIC REGULATOR.

PROBABLY few people appreciate the immense value of fruit as an article of diet in both health and disease. Fruit is, in fact, most generally regarded, not as an article of diet, but as a luxury. It is perhaps not too much to say, that on the average table fruit rarely appears at all, or, if present, is provided in such small quantity, or so damaged by the addition of large quantities of sugar, vinegar, brandy, or some other objec-

tionable substance, that whatever benefit might accrue from its use is entirely antidoted by the unwholesome concomitant.

To be of real value, fruit should be taken at every meal, and in abundant quantity. It is the natural source of liquid food. Water, as it is found in fruits and melons, the melon being also a fruit, is absolutely pure, or free from deleterious substances, even though it may have been absorbed from a slime-covered pool or a compost-heap.

Fresh fruits are particularly wholesome, and seem to possess the properties that are present — in a small degree at least — in cooked fruits. One of the most remarkable of these qualities is the ability of fresh fruits to destroy germs, or at least to prevent their growth. This fact the writer has proved, both by laboratory experiments and by clinical observations upon patients. A quantity of fresh fruit taken half an hour before a meal or a glassful of freshly prepared fruit-juice is one of the best means of purifying the stomach from mischief-making germs, and, when used in this way, may be substituted for lavage, or stomach-washing, provided, of course, that the food taken in connection therewith shall be such as will not readily encourage the growth of germs, being also well sterilized. In a recent number of the *Scientific American* we find the following article on fruits, credited by that well-known journal to *Modern Medicine* : —

"Fruits are of great value in many forms of disease, because of the acids which they contain. These acids, when taken into the blood, break up some of the compounds of waste substances which have been formed, and thus give rise to an increased excretion of these substances through the kidneys. In this way fruits are a great advantage in the treatment of rheumatism, gout, gravel, and all the different morbid conditions which accompany the so-called uric-acid diatheses. The observations of Haig respecting the relation of uric acid to neurasthenia show the great dietetic value of fruit in this disease. He has demonstrated that neurasthenia is almost always the result of the accumulation within the system of tissue wastes largely in the form of uric acid. The free use of fruits aids in the elimination of these poisons, not only by breaking up the compounds which they form within the body, but by stimulating the kidneys to increased normal activity.

"Remembering the interesting fact pointed out by Bouchard, that rheumatism is really a toxemia, resulting from the decomposition of food stuffs in a dilated or prolapsed stomach, we may also attribute the beneficial effects of a fruit diet in rheumatism and allied conditions to its value in suppressing the formation of poisonous substances in the alimentary canal, as already pointed out.

"Obesity, which is, like rheumatism, a diathesis, may be successfully treated by a fruit dietary. This is due not only to the fact that fruit is a natural food, and thus aids the system to establish normal tissue metamorphosis and a normal balance between the processes of assimilation and disassimilation, but also because it affords a very comfortable means of reducing the amount of nutrient material received to a minimum quantity.

"Fruit is chiefly water, the amount of nutrient material it contains varying from five to eight or ten per cent. in most fruits, rising to a higher figure only in dried fruits, such as dried grapes, prunes, dates, etc. The writer has succeeded in reducing excessive weight in the most satisfactory manner, by prescribing a diet consisting almost exclusively of grapes or apples, allowing only a small bit of thoroughly dried bread or zwieback in connection with the fruit. In some cases the fruit may be allowed as often as three or four times a day, if necessary to relieve a sensation of emptiness.

"In fevers, fruits, especially in the form of fruit-juices, are a most convenient and certainly the most appropriate of all foods. It is now almost universally recognized that beef tea and meat preparations of all sorts should be wholly proscribed in cases of fever, as the patient is already suffering from the accumulation of waste matters to such a degree that the addition of even the small amount contained in beef tea or a small piece of meat may be sufficient to give rise to an exacerbation of the disease and lessen the patient's chances for recovery."

THE CAUSE OF BILIOUSNESS.

More than a dozen years ago, Dr. Lauder Brunton, one of the most eminent English physicians, pointed out, in a series of articles published in the *Practitioner*, a prominent English medical journal, the important fact previously to that time only partially recognized, that flatulence and heartburn — symptoms relating to the stomach — are due to the action of germs upon the food, causing fermentation and putrefaction and the development of troublesome gases and poisonous substances of various sorts. Dr. Brunton also called attention to the still more important fact that nervous disorders owe their origin largely to the poisonous substances developed through putrefactive processes which take place in the stomach and intestines. Bouchard, Haig, and others have since clearly shown that biliousness, headache, wandering pains, depression of spirits, and the presence of a reddish, pinkish, or whitish sediment in the urine, indicating either general uric-acid or oxalic-acid poisoning, are almost directly traceable to the use of flesh-meat, and that these symptoms, when present, demand that the use of meat should be discontinued.

Strangely enough, these facts, so patent to every intelligent thinker, have as yet been little known to the laity, and, unfortunately, are not so widely known and recognized by the medical profession as they should be. One who dines upon flesh-foods is simply eating the carcass of a dead animal. Mutton-chop is nothing more or less than dead sheep; beefsteak is likewise simply dead ox or dead cow, as the case may be. The taste of flesh is wholly obnoxious to a perfectly healthy person, — it is indeed unendurable. One who has for several years abstained from flesh food finds the taste and even the odor of either raw or cooked flesh exceedingly repulsive. A physician, who had practised medicine for some time in a large Chinese city, once told the writer that his servants objected very much to the odor of cooking flesh. He said that his Chinese housekeeper, on one occasion when beef was being roasted in the kitchen, came to him and said, "Oh, honorable sir! I can not longer endure the smell of this burning flesh." But to the average American or Englishman, the odor of roasting meat would probably have been appetizing, and might perhaps even have "caused the mouth to water," to use a common expression, just as the lion licks his chops at the smell of blood.

It is time Christian nations began to consider the inconsistency of their dietetic practises. On one occasion when Dr. Barrows was addressing a large audience in a populous city in India, while contrasting the sacredness and dignity of the Christian religion with the absurd practises connected with the worship of Buddha and Brahma, he took occasion to remark, "How ridiculous it seems for intelligent people to get down upon their knees and kiss the tail of a 'sacred cow.'" The challenge thus thrown down was quickly taken up by a smart Hindu lawyer, who replied, "How much better, sir, do you think it would be to kill the cow and eat her?" In the ethics of diet we are far behind the Hindu. If India or China should ever organize a missionary campaign to the United States, without doubt the first point of attack would be the slaughter-house. So long as Christianity tolerates the slaughter-house, we shall continue to see Christian nations engaged in bloody warfare upon one another, each praying to the All-Father for the success of its armies, and offering thanksgiving for victory, although rivers of human blood may have been shed; and so long also we shall continue to see city churches standing with a saloon on one side, a tobacco shop on the other, a gambling-hell in front, and a brothel in the rear. That concentrated selfishness which demands the taking of life to satisfy a perverted appetite is the foundation upon which rest not a few of the evils that afflict modern civilization.

ANSWERS TO CORRESPONDENTS.

Germs in Meat and Eggs — Soap — Fruits — Sugar — Cook Book.— L. M., Iowa, inquires: "1. Why are not the germs in meat and eggs killed in cooking? If they are, why is the food still unfit to eat? 2. What is the best soap for toilet use? 3. Should such fruits as apples and pears, eaten raw, be pared before eating? 4. Are rice and beans healthful foods? 5. In canning fruits, what kind of sugar should be used? 6. Where can I get a cook book giving recipes for health foods? At what price?"

Ans.— 1. They are, if the cooking is done at a sufficiently high temperature, but this is not always the case. A soft-boiled egg and ordinary boiled meats are not exposed to a high temperature for a sufficient length of time to destroy germs.

2. Ordinary castile soap or yellow laundry soap.

3. Yes.

4. Yes, excellent.

5. Use no sugar at all. It is better to combine sweet and acid fruits.

6. "Science in the Kitchen," by Mrs. E. E. Kellogg, published by Modern Medicine Pub. Co., Battle Creek, Mich., at $2.25, oilcloth, $2.50, muslin; or "Every-Day Dishes," by the same author, same publishing company, price, 80 cents.

Brick Dust in the Urine.— Mrs. E. R., Tennessee, wishes to know what causes a deposit of brick-dust sediment in the urine, and if one otherwise in apparently good health should follow a special diet.

Ans.— The indication is that the patient is suffering from uric acid poison, and should at once adopt a strictly fruit, grain, and nut dietary. She should eat very freely of fruit, and drink copiously of water, and live an outdoor life with abundance of exercise.

Hair Preparations.— S. E. R., Massachusetts: "1. What causes the hair to be very dry? 2. Is the frequent use of water injurious? 3. Is 'pomade vaseline' a good remedy? 4. Would you recommend using a little vaseline on the hair every day? 5. Would it be better never to use water, but some preparation to improve and preserve the hair?"

Ans.— 1. An unhealthy state of the scalp, which may involve the whole skin. The cause is most frequently dyspepsia and general malnutrition — a starved state of the body.

2. No, it is beneficial.

3. It may be used advantageously in some cases.

4. No, the scalp must be trained to take care of itself, to manufacture all the oil needed by the hair, which it will do if kept in a healthy state.

5. No.

Dyspepsia.— D. W. D., a telegraph operator in Pennsylvania, has been in poor health for several years, and has tried medicine for every possible ailment, in vain. He has recently begun reading GOOD HEALTH, and is anxious to make whatever changes are necessary in his living. He has already discarded tobacco, after having used it for twenty-three years, also tea, coffee, and all meats, and has begun to use health foods. His breakfast consists of raw fruit, usually oranges and bananas. He drinks the juice of one lemon in a glass of water without sugar the first thing in the morning, and one to three times during the day. He uses vegetables for dinner, and "something light" for supper. He is getting "lighter," and thinks he is feeling better. 1. Is this regimen advisable? 2. When and how should peanuts be eaten? 3. Should lemon-juice be taken clear or in water? 4. What is the best treatment for the blood and a system generally run down? 5. Are eggs wholesome food? If so, how should they be prepared? 6. What would you prescribe for kidney trouble?

Ans.— 1. The regimen is excellent, but may be insufficient. It is especially probable that the amount of fat produced by the dietary is deficient. Nuts furnish an excellent source of fat, and should be freely used.

2. Roasted peanuts are difficult of digestion. Peanuts may, by being boiled for eight or ten hours, be converted into an excellent soup or purée, which is very wholesome. Peanuts and other nuts are also now prepared by various patented processes, and provided in the form of nuttolene, malted nuts, bromose, and other wholesome preparations.

3. Lemon-juice should usually be diluted.

4. A cold morning bath followed by vigorous rubbing, a warm bath two or three times a week, and an out-of-door life.

5. Eggs are not the most wholesome of foods, but are far preferable to meats and milk. The great objections to eggs are the fact that they contain an excess of albumen, and that they undergo decomposition so readily,— in other words, that they spoil so easily. In some persons, eggs decompose in the stomach as readily as outside, producing extreme biliousness, often with violent vomiting, and symptoms of poisoning.

6. Persons suffering from acute Bright's disease of the kidneys require copious water drinking, the hot blanket pack, rest in bed, and a fruit diet. Persons suffering from the same disease in a chronic form should resort to the same measures during an acute exacerbation. In the meantime the diet should consist of fruits, grains, and nuts, the patient should take a hot bath two or three times a week at bedtime, a tepid sponge bath every morning, followed by moderate rubbing, and should engage

in some out-of-door employment requiring moderate muscular exercise, and if possible should live in a dry, warm, equable climate.

Frequent Micturition — Catarrh — Quantity of Food.— U. A. N.: "1. In frequent micturition, is the remedy given in GOOD HEALTH — to raise the foot of the bed — suitable for all ages and either sex? 2. How much higher than the head should the foot be raised? 3. Please give a remedy for offensive catarrh in a girl fifteen years old? 4. What causes the arm to become helpless when thrown above the head in sleep? 5. How much food should a woman weighing one hundred and fifty pounds take at a meal? and what kinds?"

Ans.— 1. Yes.

2. A foot and a half to two feet.

3. The Pocket Vaporizer used as nearly continuously as possible.

4. Compression of the nerves of the arm.

5. From one pound to a pound and a quarter of water-free food. Simply cooked cereals, principally water-breads baked hard, fruits, and nut preparations afford an ample variety of most wholesome and nourishing foods.

Constipation — Somatose — Non-fermentative Foods — Armour's Glycerin Extract of Red Bone Marrow — Horlick's Diastoid. — M. C. G.: "1. Should an anemic, atonic person take cold water for constipation instead of hot? 2. Is there a food that can not ferment? 3. Would you advise Somatose or Fairchild's Panopepton for an ill-nourished dyspeptic? 4. Do you approve of Armour's Glycerin Extract of Red Bone Marrow or Horlick's Diastoid? 5. What dietary would you recommend for one who has tried all these remedies, and also Sanitas nut foods, charcoal tablets, etc., and yet finds no safe, sure relief from fermentation?"

Ans.— 1. Yes.

2. No, there is no food that is not capable of undergoing fermentation or putrefaction.

3. We find no occasion for the use of the remedies named.

4. We think these remedies are entirely unnecessary, especially when rational and physiological measures can be employed.

5. The case probably requires lavage, or washing of the stomach, and the employment of other measures in addition to regulation of diet; but regulation of diet alone will not effect a cure in chronic and obstinate cases. Hydrotherapy, electricity, massage, and various other means combined with a correction of the diet are essential.

Food Elements — Grains — Lemon Peel.— W. H. W., Oklahoma: "1. What food elements besides starch are found in tapioca and farina? 2. Are beans, peas, etc., considered as grains? 3. Can they be eaten with fruit? 4. Does lemon peel contain any poisonous properties?"

Ans.— 1. None, or none in sufficient quantity to be worth mentioning.

2. No, the articles mentioned are legumes; they are seeds closely allied to grains, but strictly speaking are not grains. However, when one speaks of fruits, nuts, and grains as proper dietary, legumes are understood to be included.

3. Yes.

4. Yes, lemon peel should never be eaten.

Vitae-ore.— E. L. P., Missouri: "Do you know anything about this remedy or its maker? Are his claims true, particularly in regard to diphtheria?"

Ans.— No, but the name is strongly suspicious. We should have no hesitation, from the name alone, in condemning the article as a humbug. The circulars describing this article did not reach us, but we have no doubt that they contain ample evidence that this nostrum is a good thing to let alone.

Sterilized Milk and Cream — Honey — Graham Gems — Food Combinations.— H. W., California: "1. Can milk be sterilized so as to kill the germs by setting it in a double boiler and boiling for one-half hour? 2. Which is the more healthful, boiled honey or fruit-juice boiled down to a syrup with sugar? 3. Are graham gems healthful made without yeast or baking-powder, but eaten with cream? 4. Do granola mush with roasted potatoes, or fruit with toasted bread, make good combinations? 5. Are nut butter and plain graham crackers or whole-wheat wafers suitable food for a person with hyperpepsia?"

Ans.— 1. Dangerous germs, such as typhoid-fever germs, germs of consumption, and of various acute maladies, are killed by half an hour's exposure of milk to a boiling temperature. There are many germs, however, which produce putrefaction in milk, and which are not killed by a single boiling, but only by thorough boiling for half an hour for three days in succession. These germs can thus be killed in the majority of cases.

2. This question is very much like inquiring which is worse, swearing or stealing. The answer to the question must depend chiefly upon the quantity taken, the combinations in which the article is taken, etc. We can not recommend either.

3. Persons with sound stomachs can digest the articles named, but for most invalids such a combination would be undesirable. Gems are not the most healthful of all breads. We prefer the hard breads, baked slightly brown.

4. Yes, but such a dietary would be rather monotonous.

5. Yes, but there are many persons who can not digest ordinary nut butter. These are for the most part persons suffering from hypopepsia, but occasionally persons who have hyperpepsia find themselves unable to eat butter made from roasted peanuts without suffering from fermentation. Nuttolene can be recommended without qualification, but ordinary nut butter is not found universally satisfactory as a substitute for butter. This important fact was not at first recognized, but after a year or two's experience it became evident, and nuttolene was devised to take the place of the so-called nut butter.

Green Vegetables — Eggs — Tallow — Nuts. — Mrs. C. McG., Iowa, is anxious for answers to these queries: "1. Are young onions more healthful cooked than raw? 2. Should radishes be eaten raw? If not, how can they be cooked? 3. Do you consider parsnips, cauliflower, asparagus, lettuce, rhubarb, greens, egg-plant, and squash, fit for food? 4. What are lentils? 5. Are hard-boiled eggs healthful? 6. Is it well to use tallow instead of butter for grease in cooking? 7. Can you tell me how to make nut butter from peanuts? 8. Are hickory-nuts healthful if well chewed? 9. What causes small, painful water blisters to rise whenever I cut or scratch my hand?"

Ans.— 1. Yes.

2. No, radishes may be cooked the same as young beets or other greens.

3. The food value of these substances is very small, and some of them are not food at all, as in the case of rhubarb. Rhubarb also contains a poison which renders it objectionable. There are many persons who can not eat vegetable food without injury. These are usually persons suffering from dilatation of the stomach.

4. Lentils are leguminous seeds allied to peas and beans.

5. They are very hard to digest; it is better to discard them from the dietary.

6. No, it is better to discard both tallow and butter and all other forms of grease, and use nuts instead. Nuttolene is a perfect substitute for animal fats of all descriptions.

7. Ordinary nut butter is made simply by removing the shells and skins of the peanuts, roasting, and crushing to a pasty mass.

The crushing can be done with an ordinary rolling-pin or a potato-masher, or the nuts may be ground in a coffee-mill or some other mill adapted to the purpose. Nut butter manufactured in this way, however, is likely to disagree with persons having a weak stomach, because of the high temperature to which the nuts have been exposed. We can not recommend without qualification any preparation designed to take the place of butter, cream, and milk, except such as have been exposed to a high temperature in cooking. Nuts may be prepared for use by boiling alone, provided the boiling is continued long enough; eight to twelve hours is usually required.

8. Yes.

9. Infection.

Nervous Embarrassment.— E. E. S., Massachusetts, gives symptoms of a peculiar case of embarrassment from insufficient cause, and asks: "1. Is it caused by nervousness? 2. Is the heart weak? 3. Is there any rule by which one might overcome embarrassment in speaking? 4. Would marriage have any effect? 5. Would you recommend a nerve tonic?"

Ans.— 1. Yes.

2. Yes, usually, in such cases.

3. The patient is probably neurasthenic, and requires thorough tonic treatment; a cure can usually be effected.

4. Probably not.

5. Yes, but not pill-swallowing. The best nerve tonics are fresh air, plenty of light, exercise out-of-doors, and the cold morning sponge bath.

Tomatoes and Vegetables — Legumes and Fruit.— Mrs. W. T. D., asks: "1. Do tomatoes and vegetables form a good combination? 2. Will dried beans and peas combine with fruits as well as peanuts do?"

Ans.— 1. Tomatoes combine well with beans, peas, cauliflower, and a few other vegetables, but do not agree well with parsnips, potatoes, and other starchy roots.

2. In most cases, yes.

Peanut Coffee — Syrup for Constipation.— A. J. B., Minnesota: "1. Will peanuts roasted, ground, and used in the place of coffee to drink, aid or retard digestion? 2. Would you consider refined amber-cane-syrup or good molasses on toasted bread, taken freely at meals, a proper diet in constipation?"

Ans.— 1. Such a decoction could not aid digestion, and would be likely in most cases to hinder it.

2. Such a diet would be likely sooner or later to produce indigestion. The free use of fruit, granose, and nut foods is a much better means of relief for inactivity of the bowels.

Eczema.— J. A. W., Missouri, has been troubled for a long time with white pimples on the chin. 1. What can be the cause? 2. Would any of the nut foods be beneficial?

Ans.— 1. Probably disturbed digestion.

2. Yes; substitute nuttolene, bromose, and malted nuts for butter, cream, milk, and meat. Nuttose-B and Nuttose-D may also be found suitable.

Sulphur.— F. W. W., Ohio: "1. Is it possible to obtain sulphur in a liquid form without the use of chemicals? 2. If so, is there any efficacy in the preparation of the Sulphume Co., Chicago?"

Ans.— 1. No.

2. It may be good for fumigation purposes. We have not examined it, and would be glad to see a specimen.

Catarrh of the Bowels — Constipation. — M. T. D., California, wishes to know what to do for catarrh of the bowels which has existed fifty or more years, with constipation.

Ans.— Extreme chronic cases of this sort usually require rest in bed, careful treatment, and dietetics for several months. A more definite prescription can not be made without further particulars relating to the case.

Gastric Neurasthenia.— Mrs. B. F. E., Utah, wishes to know what treatment to give for what she thinks must be gastric neurasthenia, the symptoms being staggering, falling sensation, unsteady walking, fear after eating, blurred sight, gas in the stomach and bowels, a little pain in the back.

Ans.— First of all, correct dietary is required. The diet should consist of fruits and grains and suitable nut preparations, especially malted nuts mixed with hot water, cooked for ten minutes, Nuttose-B or Nuttose-D and fresh, ripe fruits. Granose is also especially indicated. We should also recommend a careful study of the little work entitled "The Stomach," published by the Modern Medicine Publishing Company, Battle Creek, Mich.

Urinary Trouble.— G. P. S., Wisconsin, aged eighty-eight years, desires advice for treatment for frequent urination. He is obliged to get up six or eight times every night.

Ans.— Sleep with the foot of the bed elevated one and one-half feet; take a sitz bath at 80° F. for ten minutes every night before retiring; have an examination made by a surgeon to ascertain whether there are stones in the bladder, or disease of the prostate gland or some other affection requiring the personal attention of a physician.

Morning Bath — Appetite — Albumen.— A. F. C., Massachusetts: "1. Of what benefit is the cool morning bath? 2. Is it injurious in case of kidney trouble? 3. How can one get a good appetite? 4. What is the test for albumen in the urine?"

Ans.— 1. It is the best tonic known.

2. In cases of Bright's disease very cold water should not be used. The tepid bath may be employed instead.

3. The cold morning bath is one of the best means of producing an appetite. The inhalation of cold air for fifteen or twenty minutes is another excellent measure. When the stomach is infected, as is indicated by a thickly coated tongue, it should be washed out, and antiseptic charcoal tablets should be used. A fruit diet continued for two or three days will often obviate the necessity of lavage of the stomach, and cure biliousness.

4. The addition of an acid and heating at boiling temperature. The test requires experience and skill, however, to be a decisive one, and should be made only by a qualified physician or a chemist.

Olive-Oil.— W. W. W. wishes to know how olive-oil can be combined with food substances to make it healthful to use.

Ans.— We do not know of any way in which olive-oil can be made entirely wholesome as an article of food. It is a separated fat, and hence is likely to interfere with the digestion of food in the stomach. It is better to take the olive in its natural state. When ripe, the olive is wholesome. Green olives are unfit to eat.

Almonds — Diet.— E. Z. asks: "1. How long should almonds be boiled to make them digestible? 2. Are raw almonds as nourishing as cooked ones? 3. Do you consider a diet of granola and other wheat foods sufficient for a healthy person? 4. Would not milk be a good addition, provided it can be digested? 5. What do you think of malted milk? 6. Have you a table of food combinations?"

Ans.— 1. Almonds are not very difficult of digestion, even if not cooked. Cooking improves them. If in the form of a paste or meal, ten to fifteen minutes' cooking is sufficient; if whole, an hour or so of cooking is required.

2. Yes, for persons who have fairly good digestion.

3. No, some food rich in fat should be added.

4. Although years ago the writer was in the habit of recommending milk as a simple and wholesome article of food, experience has taught him that it is by no means altogether wholesome. Nuts are a perfect and wholesome substitute.

5. Malted milk is somewhat more wholesome than ordinary milk, but is not altogether free from the objections raised to milk in its ordinary state; namely, the production of constipation, sick-headache, biliousness, and various forms of indigestion.

6. The subject of food combinations is a very simple one. When one confines himself to thoroughly wholesome foods, fruits, grains, and nuts always agree. These are the natural, and properly the only, food for man. Fruits and vegetables are very likely to disagree. Milk and meats also disagree with vegetables. Fats in a separate form are likely to disagree with all kinds of foods.

LITERARY NOTICES.

WITHOUT excluding other important topics, the August *Atlantic* is noticeably a fiction number, and contains a group of short stories of great variety and exceeding interest. Morgan Robertson, whose remarkably interesting sea-stories have been widely welcomed, tells in "Where Angels Fear to Tread" of the marvelous adventures of a crew of lake-schooner sailors decoyed into a square-rigged ship for a long ocean voyage; their sufferings, how they punished their tormentors, and what finally resulted; the whole told with the odor of salt water and the touch of rugged truth. "The Tinkling Simlins" by Mary Tracy Earle is a charming and in some ways idyllic sketch of rural life, love, and jealousy, with a little tragedy, all combined with humorous touches and keen characterization that carry the reader without a pause to the end. Mrs. Ritchie's "o'ertrue tale" of Ah Chy, the Chinese merchant, introduces the manners and customs of the Chinese at home, in the streets, in the shops, and in their social and family life. Especially entertaining is her description of the Chinese butlers' method of supplying all table and other deficiencies when unexpected guests arrive.

The August *Arena* presents a remarkably strong table of contents. The leading article, "The United States and the Concert of Europe," by the editor, John Clark Ridpath, is a stirring appeal to Americans to remember their origin, to consider the pit from whence they were digged, and not to place themselves in a position toward the European powers in which they must become a party to the methods of the Concert of Europe.

Other articles of more than usual interest are "The Criminal Responsibility of the Insane," by F. E. Daniel, M. D.; "The Proposed Federation of the Anglo-Saxon Nations," by B. O. Flower; "Japanese Home Life as Contrasted with American," by Chujiro Kochi, a native Japanese living in the United States; "The Extirpation of Consumption," by Lincoln Cothran, M. D., in which the writer advocates the segregation of tuberculous patients in colonies, like the lepers, to prevent the spread of infection; "The American Girl: Her Faults and Her Virtues," by Mrs. Rhodes Campbell. (The Arena Company, Copley Sq., Boston. Price, $2.50 a year; 25 cents a copy.)

The complete novel in the August issue of *Lippincott's*, "The Last Rebel," is by Joseph A. Altsheler, now well known as a writer of war stories. The scene is a lonesome post in the southern Alleghanies, held for the Confederacy by a chivalrous monomaniac after the unpleasantness of 1861–65 had ended. The action deals with the experiences of a northerner who unadvisedly wandered into those parts and found himself a prisoner. The prospects of "The United States as a Colonial Power" are considered by Fred. Perry Powers. Two articles appropriate to the season are "Death in the Woods and Fields," by Calvin Dill Wilson, and "Summer Logging" by Allan Hendricks; each is the outcome of personal observation and knowledge. A bit of old frontier history is given by Elizabeth Wormeley Latimer under the title "In Ohio a Hundred Years Ago." It epitomizes the adventures of Charles Johnston, for some time prisoner among Indians, as recorded by him in 1827.

The August number of the *Art Interchange*, besides a supplement in black and white of designs for the china painter, wood carver, and embroiderer, offers two charming color plates, "Peaches," by George W. Drew, a very dainty piece of still life, and another of orchids, painted by Paul de Longpré.

The number opens with a reproduction of Paul Wagner's "August Days." Other pictorial features are a full-page black and white, after F. r. Úhde, "Suffer Little Children to Come unto Me;" and reproductions of carbon prints of two of Burne-Jones' best pictures. "Art at Yale," the second instalment of "Art in our Universities," biographical papers on Sir Edward Burne-Jones and John Addinton Symonds, appropriately illustrated, are included in the literary contents. There are also articles containing practical hints on water-color painting, photographing on linen, copying photographs in mineral colors, pyrography, and full directions for copying the color prints, besides numerous useful notes for china painters. The Hints for House Decoration department is unusually full and interesting. (The Art Interchange Co., 152 West 23d St., New York. Price, 35 cents a number.)

Success is the name of an excellent monthly, finely illustrated, and edited by Orison Swett Marden. It is supposed to be a boys' journal, but words of appreciation are spoken for it by both old and young. It can not fail to be an inspiration wherever it is read. The July number contains a very entertaining account of how one determined American boy saw Queen Victoria at her palace in London. The intense desire, the hopes and mis-

givings, the trembling courage of his application, the suspense, the assurance of favor, the exuberance, the crowning joy — and he stands before the kind old lady, whose motherliness dispels his embarrassment and sends him forth in triumphant gladnesss. (The Success Co., Cooper Union, New York. $1.00 a year.)

Mr. Theo. R. Mac Clure, chief clerk of the State Board of Health, has prepared a most valuable and attractive souvenir of the quarter-centennial celebration of the establishment of the board. It is in the nature of a review of a quarter century of public-health work in Michigan, and is the result of Mr. Mac Clure's request that he be granted permission to prepare such a document, he having observed, during the decade he has been connected with the board, the unselfish and faithful work of its members.

The document, which comprises forty-eight printed pages, reviews the work of the board since its establishment in 1873, noting the progress made and the various lines of investigation conducted. The important results to the people of the State are set forth, and the successive triumphs scored in the way of stamping out and restricting various dangerous communicable diseases, which have placed the Michigan board in the very forefront of similar bodies in this and foreign countries, are given deserved mention.

The work is embellished with excellent half-tones of the distinguished sanitarians who have gratuitously served the State as members of the board during the twenty-five years of its existence, and attention is directed to the special line of work pursued by each for the benefit of the people of Michigan in particular and the public in general.

No one but a printer knows a printer's troubles. Likewise, no one but an editor or a proof-reader knows what perplexing questions are constantly arising and demanding answers on the spot. It is strange that while the need of help along this line has existed for centuries, few of our scholars and grammarians touch on the points that are most puzzling to the printer. The examples given under rules are always the easy ones, especially in punctuation and capitalization. There are hundreds of queries a proof-reader must settle that are never found in grammar, rhetoric, or punctuation guide.

"The Verbalist," a beautiful book of 140 pages, by Alfred Ayers, is the most satisfactory work of the kind published. Mr. Ayers has answered so many of those perplexing questions that his little book has already found a place in our hearts, as a real comfort amid the trials of editorial work. He has found room, also, to give some very good points on punctuation, but the part on capitalization is too meager. His treatment of *shall* and *will*, *should* and *would*, *is being built*, and the relative pronouns *that*, *which*, and *who*, is especially full and clear. The remarks on non-construction are forcible and sensible. We do not hesitate to recommend this work to every one who writes or edits, as a clear, concise, practical treatise on the use of words. (D. Appleton & Co., New York. Price, cloth, $1.25.)

For nearly forty years Smith's Bible Dictionary has been the acknowledged standard of Biblical research. A new edition has just been published by Fleming H. Revell Co., Chicago, with clear type and good press work. Send to Revell for catalogue and prices.

"On the Farm" is the title of the second book of a series of three, known as "Uncle Robert's Geography," by Colonel Francis W. Parker and Nellie L. Helm. The first of the series is "Playtime and Seedtime," and the third, "Uncle Robert's Visit." All these books belong to the Home-Reading Series, published by D. Appleton & Co., New York.

"On the Farm" deals entirely with the interests and life of children in the environments of the country. The children are real ones, and their experiences find parallels in thousands of other children. Colonel Parker's interest in the public schools has led him to study better and more effectual methods of teaching, and his inventions in this line have been of great benefit. (Price, 42 cents.)

The fiction number of *Scribner's Magazine* has been an institution for a decade. In it have appeared many notable short stories that have made their authors famous. It has also been the occasion for several novel and successful experiments in color-printing. This year the colored cover is one of the four prize designs by Albert Herter, and it is a brilliant example of decorative printing. The most ambitious scheme in color-printing undertaken by an American magazine is the reproduction of eight full-page designs by Henry McCarter which accompany E. S. Martin's noble poem, "The Sea Is His." The way in which the shading of color is attained is mechanically ingenious and artistically effective. It is a novelty in color-printing, even for experts.

SET YOUR LIGHT ON A CANDLESTICK.

EVERY little while we come across encouraging evidences that the principles taught by GOOD HEALTH and exemplified in the life of the Battle Creek Sanitarium are finding advocates in distant places and bringing light to many who have sat in darkness.

Not long ago the *Hamilton Herald*, Ontario, gave a prominent place on its first page to twenty-seven "Health Rules," by Frederick W. Watkins, a former patient at the Sanitarium. These rules were an excellent *résumé* of Sanitarium doctrine. Among them were the following:—

"21. Granose flakes, granola, and zwieback are three of the best-prepared foods, and can be obtained from most of the leading grocers. Two or three tablespoonfuls of granose flakes eaten at the beginning of a meal, masticated thoroughly and no drink taken with the same, will cause the saliva to flow, and are very wholesome, and form an excellent corrective for indigestion. Granola is good eaten with stewed fruit or poached eggs. Zwieback, too, is excellent when used in the same manner.

"23. Particular attention, when eating, should be paid to proper combinations of food. Vegetables and fruits, when eaten at the same meal, are a bad combination, and are likely to produce disturbance of the stomach. Peas, beans, and lentils are classed as legumes, rather than vegetables, and are good when eaten with fruit, or with cereals and fruit. Cereals and fruit form a good combination. Vegetables may be eaten with cereals."

About the same time, the *Iowa State Register* contained a very interesting article by a lady who had evidently seen and thoroughly investigated whereof she spoke. We quote parts of her paper:—

"For years I was so enfeebled that I suffered many things at the hands of many doctors, until life became merely a troublesome existence. Now I am so jubilantly happy over returning physical independence, and life begins to look so rosy again, that I can not refrain from telling some of the Battle Creek principles that I put into life and gain therefrom. In the first place, all warm baths are followed by a dash of cold water in some form. The practical application of this idea takes away your breath at first, until you become used to it. It is to arouse a quick reaction of the nerves. In place of using a towel, a dry sheet envelops the body, and the flesh is dried by simply moving the hand over the sheet. How beautiful for a mother to dry the little children in this manner after bathing. Rub a little cocoa butter or purest white vaseline upon the

hands, and anoint the flesh, following this with a gentle spatting or massage. If you are the happy possessor of a porcelain-lined bath-tub, you can make a nice home electric bath by placing the electrodes in water tempered to 95°, moving the electrodes around so as to get the current across the body in different directions. After remaining in about ten minutes, cool the water before leaving to 85°. Dry cell batteries are more convenient than liquid batteries. . . .

"Not all who are ailing can leave their homes to go to places where they can receive special care, and while I turned the leaves of Dr. Kellogg's book upon massage, I comprehended what a vast amount of information is within its covers, arranged and written in such a clear style that any ordinary nurse by careful study can easily absorb the gist of it. I thought if nursing was my profession I would not for three times its cost be without it. Besides its concise descriptions there are forty-nine plates, one hundred and thirty-nine half-tone engravings, illustrative of the several movements and portions of the body. There is so much in the book that a clever nurse or a mother of a family could absorb into her own practise. I first met it in the hands of the nurses of the Battle Creek Sanitarium, and by continual dips into its contents while waiting my turn for treatment became determined to own a copy. . . .

"Then there are the breathing gymnastics. From these I have obtained great good. All winter I thought of describing them, but I find that Dr. Kellogg has written it all out in a little book entitled 'Physical Culture for the Home, the School, and the Kindergarten,' which is probably printed now.

"I sat in another farmer's kitchen this winter watching the wife and mother doing her housework with stooping shoulders. We were talking of breathing gymnastics, and after trying them she said: 'I have read of such exercises, but I never thought they were for me. Why, they pull clear to the ends of the fingers.' Yes, housework is good so far as it goes, but it will not bring an all-round, even physical development. My friend said, 'When I stand up straight, it rests the stomach.' Indeed it does, and if you desire to acquire a correct physical posture, back up to a door frame, with the heels, hips, and raised shoulders touching it. Bend the head backward, then, holding the position of the body, raise the head and walk away, keeping this position as long as possible. Frequently return to the friendly door-post for a new lesson in muscle training, until a correct carriage is established. But be sure to discard that abomination, the corset, and support all clothing from the shoulders.

"I had always drunk milk freely, but at Battle Creek I learned that persons suffering from flatulency and catarrhal digestive troubles should avoid milk, animal fats, and butter, because these are not absorbed in the stomach, but are passed into the intestines, thus giving them too much work. Granose flakes made of wheat, used freely, are a splendid medicine and food combined, making physics a non-necessity. . . .

"While the physical troubles are not completely conquered, they do not hold the balance of power at present, for I am in the midst of house-cleaning and enjoying the privilege of once more being the moving force in this intensely interesting ceremonial, and can drive alone eight miles to town, do a good deal of shopping, and return the same day without feeling completely exhausted. Battle Creek treatment is not all responsible for the happy change, but it is receiving a great deal of credit for the marvelous improvement of the last six months. None but invalids can appreciate the joy of even a limited physical independence."

SOME of the Sanitas Food Company's nut products received generous advertising on Lake Michigan not long ago. The occasion was the annual outing of the Chicago Vegetarian Society, and the advertising was the result of an accident by which the "non-carnivorous banquet," failed to be deposited at St. Joseph with the banqueters, but was carried on to Benton Harbor, and therefore could not be served until the party was on the boat going home. The strange dishes that composed the repast aroused the interest of the flesh-eating passengers, and no end of questions were asked about nuttose, nuttolene, cereal coffee, etc. An impromptu "question box" was started, and the physician of the party was kept more than busy answering all sorts of questions about vegetarian foods.

PLAN YOUR SUMMER OUTING NOW.—Go to picturesque Mackinac via the Coast Line. It costs only $13.50 from Detroit, $15.50 from Toledo, $18 from Cleveland for the round trip, including meals and berths. One thousand miles of lake ride on new, modern, steel steamers for the above rates. Send 2c for illustrated pamphlet. Address A. A. Schantz, G. P. A., Detroit, Mich.

A PROSPEROUS PEOPLE.—South Dakota farmers are out of debt. They will be lending money to Eastern farmers within a year. Don't stop to sell your old worn-out farm. Let the mortgage take it. Go to South Dakota, and buy a rich black-loam prairie farm for cash or on crop payment plan. No

hills, no stones, no stumps. Good schools, good churches, good water, fine climate, and the best people on earth for neighbors. For railway rates and information regarding lands along the lines of the Chicago, Milwaukee & St. Paul Railway write to H. F. Hunter, Immigration Agent for South Dakota, 291 Dearborn Street, Chicago, Ill. ; or Geo. H. Heafford, General Passenger Agent, Old Colony Building, Chicago, Ill.

A PERFECT SUBSTITUTE.

"You must take off your corset, and have your garments all loose and suspended from the shoulders," is the decree of the hygienic physician to his weak, neurasthenic, and mayhap horrified, patient.

"But what *shall* I do, doctor? My clothes are all made over a corset. I *can't* take it off."

"It must be done, or you can never get well."

And away the corset goes, leaving the poor victim of its barbarity limp and hopeless, with skirt bands cruelly cutting into the waist muscles, and their heavy weight dragging her down, down — to what?

The next morning the doctor declares that the skirt bands will do as much harm as the corset, probably more, and orders a support.

"What kind of a support shall I get?" wearily asks the patient, and is answered by a shrug of the broad shoulders. He does not know what to tell her. There is nothing but the old suspenders, or some "health waist" that is even worse than the discarded corset.

Such has been the experience of many a poor invalid and her honest doctor, but a better time is coming. A substitute has been found for the corset, which is as perfect a garment as the most fastidious could desire. It is the Freedom waist, designed at the dress department of the Battle Creek Sanitarium, and the patterns can be had on application. (See advertisement in this number.)

The Freedom waist is built to fit the natural form, so it is an excellent guide in producing in your own body that form which has been the admiration of the ages in art. It is a natural bust support, and by the proper adjustment of seams to the anatomy of the body, is a reliable means of supporting the weight of all the undergarments.

"I don't see why one can not use the ordinary basque pattern to make the Freedom waist," said a young lady.

"No, it would not do, because the seams do not come in the right place. If you should suspend your skirts from such a waist, you would find yourself very uncomfortable. The weight would come on the back of the neck, instead of on the shoulders. The seams in this waist are adjusted in such a way that the weight of the garments fastened to it is evenly distributed on the shoulders, and so is not felt by the wearer. How much of an advantage this is will be realized only by one who has tried both ways."

Of course, the woman who adopts the Freedom waist will need to remodel her other clothing. As the freed muscles gain strength and begin to realize their restored usefulness, she will find uncomfortable spots ; seams must be let out here and taken up there, gathers must be changed, bands must be lowered in one place and raised in another, as the poise of the body changes ; but the delight of emancipated muscles and organs, the increased vigor of the living machine, will amply repay one for all the trouble of alteration.

To specify : the dress will be too long in front and too short in the back ; the curve in the front of the waist will become convex instead of concave ; and the back seams will lose their posterior curves ; the "waist line" will creep up till it falls over the lower ribs instead of the soft muscles below them.

All these changing conditions are recognized and allowed for in the Freedom waist, and she who dons it with a determination to stick to it till she has grown into its image, will never again consent to the imprisonment of the corset or its imitations. With this waist on, and with all her other garments correspondingly healthful, a woman feels the thrill of life and energy through all her being, for she has the full use of all her bodily organs, and nature is free to carry on its operations for health and happiness.

HOME-SEEKERS' EXCURSIONS.— On the first and third Tuesdays in July, August, September, and October, 1898, the Chicago, Milwaukee & St. Paul Railway will sell round-trip excursion tickets (good 21 days) from Chicago, Milwaukee, and other points on its line, to a great many points in South and North Dakota and other western and southwestern States, at about one fare. Take a trip West and see the wonderful crops and what an amount of good land can be purchased for a little money. Further information as to rates, routes, prices of farm lands, etc., may be obtained on application to any coupon ticket agent, or by addressing the following-named persons : W. E. Powell, Gen'l Immigration Agent, 410 Old Colony Bldg., Chicago; H. F. Hunter, Immigration Agt. for South Dakota, 291 Dearborn St., Chicago; or Geo. H. Heafford, General Passenger Agent, Chicago, Ill.

JUST THE PLACE FOR A BRIDAL TRIP.— Take a cruise to Picturesque Mackinac Island, 900 miles of lake ride, and it costs only $17 from Cleveland, $15 from Toledo, $12.50 from Detroit, round trip, including meals and berth. New steel steamers. Send 2c for illustrated pamphlet. Address A. A. Schantz, G. P. A., D. & C., The Coast Line, Detroit, 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.

A WORD TO OUR CORRESPONDENTS.— Letters of inquiry for our department, "Answers to Correspondents," have come in so fast during the past few months that it is impossible to insert answers in proportionate ratio. These inquiries will receive notice in the order received, and as early as possible.

SPECIAL EXCURSION.— On Sunday, August 14, the D. T. & M. R. R. will run a special excursion from Allegan to Toledo and return. Train will leave Allegan at 5 : 25 A. M., arriving at Toledo at 11 : 25 A. M. Returning, train will leave Toledo at 6 P. M. Tickets will also be good on train leaving Toledo at 7 : 30 Monday morning, thereby giving excursionists ample time to visit the Casino, the ball game, or to enjoy a boat ride to Monroe Piers, one of the most delightful bathing resorts in Southern Michigan. Train will leave Battle Creek at 7 A. M. F. C. Whipple, Gen. Pass. Agt.
