OCTOBER, 1891.

GOOD HEALTH

CONDUCTED BY

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PUBLISHED MONTHLY.
$1.00 A YEAR.

GOOD HEALTH, VOL. 26, NO. 10.

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BATTLE CREEK, MICH. October, 1891.

JAVA MOTHER.

GOOD HEALTH
A JOURNAL OF HYGIENE
MENS SANA IN CORPORE SANO.
VOL. XXVI. NUMBER 10.
BATTLE CREEK, MICHIGAN. OCTOBER, 1891.

INTERNATIONAL HEALTH STUDIES.

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30. — The Argentine Republic.

A CORRESPONDENT of the Delhi *Gazette* describes the horror of a gang of Hindu peasants who saw two British soldiers beat a cow to hasten its transfer from the stock yards to the pasture of the government barracks. Three of the orthodox natives dropped their burdens and began to groan, while their children hugged each other and averted their faces, as if they expected the thunderbolts of Heaven to avenge the sacrilege on the spot.

It would be interesting to know the comments of such Hindus on the proceedings in an Argentine *matanza*, or beef-packery, where hundreds of steers may often be seen huddled together in a corral, while cigarette-smoking butchers lean over the fence cutting the throats of their captives by means of knife blades fastened to the end of long sticks.

On the pampas of the La Plata, cattle-driving, cattle-killing, and cattle-skinning is the staple occupation of thousands of men descended from the adventure-seeking hidalgos of Old Spain. "For six days thou shalt butcher steers, and on the seventh haul the hides to the sea," they burlesque the Sabbath law, and on their occasional visits to Buenos Ayres their wagon masters may spend a portion of their wages in the metropolitan restaurants, but the large plurality of the far-western Gauchos subsist almost exclusively on beef. Fried liver for breakfast, steaks, kidneys, and beef stew with onions for dinner, and fried liver for supper, is the daily *menu* of a well-to-do ranchero, whose cowboys (*vaqueros*) often get nothing but jerked beef, for weeks together. Beef in enormous quantities is also brought to the markets of all the principal cities, and taken all in all, the "sin of carnivorism" is perhaps carried further than in any other country of Caucasian colonists. Bowel complaints naturally prevail, and strange facts might take the place of current theories if statistics on the frequency of dental diseases could be collected in Eastern South America. Millions of fruit-eating Indios, who never used a tooth-brush in their lives, can boast splendid sets of teeth in extreme old age; the frugal Creoles of Brazil and Venezuela are almost equally lucky, in spite of their fondness for sweetmeats and boiling hot chocolate; while the meat-gorged Argentinos are in constant aid of dental surgery.

The Gauchos, or pampa dwellers, share the experience of their city cousins in that respect; toothless crones and middle-aged persons with defective front teeth are as frequent on the prairies as in the shops of Buenos Ayres, but the beneficial influence of outdoor exercise asserts itself even in the *matanza* districts. Boys of ten and twelve get inured to fatigues which few men of Western Europe or Eastern North America would care to share, and before his eighteenth year every able-bodied *mozo* has become a Centaur, expert in horse-breaking and steeple chases after runaway steers. Instead of gunpowder, the native hunters use *bolas*, iron or leaden bullets wrapped up in a little leather bag and fastened to the end of long rawhide ropes. In the use of these primitive weapons the Gauchos acquire a degree of skill which makes it less difficult to credit the record of the times

when a good archer thought it a shame to miss a willow wand at a distance of three hundred yards. In mid-career of a race through bush and brambles, a veteran *bolero* will contrive to entangle a fugitive deer at the first throw, and thinks nothing of catching the wildest bull and dragging him home through the pathless jungle. Ten hours in the saddle is considered a moderate day's work for a Gaucho whose monthly wages rarely exceed ten *pesos*, or about eleven dollars and a half.

In the progress of civilization cattle-herders are almost sure to be distanced by agriculturists; but the pastoral Argentinos have been cultured in their own despite by a rapidly increasing immigration of enterprising foreigners. Natural advantages like those of the La Plata valley cannot be neutralized by the conservatism of orthodox cattle barons. To begin with, their national territory embraces exactly the twenty degrees of latitude most propitious to the development of industrial civilization; viz., the genial weather zone from the forty-first to the twenty-first parallel. Our own border limits extend a little farther up north; but have blizzards not often tempted us to wish that our glorious Republic had let its British neighbors keep at least half of our bleak Northwest States and wrested a better slice of real estate from Spanish America? The Argentinos have their Bostons and Detroits, but also a fair assortment of Havannas and evergreen summerlands, and their area extends far enough west to comprise a round million of square miles — a territory fully as large as France, Germany, and the Austrian empire taken together. The vast extent of arable plains favors railway enterprise, and for commercial purposes the water-ways of the La Plata rival those of the Mississippi, and even of the Yang-ste-Kiang. Travelers taking a river steamer at Montevideo can make an unobstructed trip of two thousand miles to Cuyaba in Southern Brazil, and the water-

RAFT CABIN ON THE PARANA.

masses brought down by the countless tributaries of the great river may be estimated from the fact that at Buenos Ayres, more than a hundred miles from the sea, the La Plata is twenty miles wide.

In spite of wars and party feuds, revolutionary agitators and boodle politicians, the Argentine Republic has thus become a Goshen of home-seekers, attracting immigrants from the Mediteranean shore lands as the United States attracts them from Northern Europe. The shrewd Catalans are the chief proprietors of large mercantile establishments, the French of factories and railways, the Galicians (*Gallegos* as they call themselves) are water-carriers and hewers of wood; the Italians monopolize the skilled trades,

and their *falucas* traffic along the river shores wherever Genoese notions can be bartered for a bundle of wool.

In less than twenty years the population of Buenos Ayres has increased from 130,000 to 565,000. It is a well-built and airy city, but the "Buenos" is a misnomer. The air is not always good, often, indeed, almost unbreathable. When the Spaniards first landed at Montevideo, the plains skirting the rather high banks of the river, were pretty well wooded with willows and mimosa trees, but in less than a century the miserable shiftlessness of the natives has turned those plains into treeless loam deserts, and during the prevalence of a *pampero*, or southwest storm, the heavens are darkened with impenetrable dust-clouds, which more than once have produced an artificial night much blacker than that of London fog and coal smoke combined. And if, as often happens, the *pampero* winds up with a rain-storm, it rains mud; not sootish water, but mud of that indisputable kind scattered by the hoofs of a trotting street-car horse, black-brown, thick smut, coming down from the sky in continuous showers. From November to March the weather gets rather warm, and at that time of the year the strange disease known as the *mal de sicte dias*, "the seven days' evil," carries off thousands of infants. Possibly the flesh-diet of their nurses aggravates the debilitating influence of the sultry air; at all events the mortality of city babies in certain years has assumed altogether phenomenal proportions, and has been observed chiefly in the quarters inhabited by the *Creoles puros*, as distinguished both from the Indian mongrels and the foreign immigrants. Children of eight days and above are comparatively safe, but of younger infants hardly three in ten have a chance in a more than usually warm season to survive an attack of a malady, which, according to the opinion of the most intelligent local physicians, cannot after all be described as an epidemic, being non-contagious, but originating independently from a similarity of predisposing circumstances.

Buenos Ayres has eight large hospitals and needs them all, considering the still greater number of its meat markets and rum shops. It counts several considerable breweries, and a company of Italian specialists run a large factory of mixed wines. *Vino del pays*, country wine, they call their tipples, to discourage the competition of foreign importers, and have started branch establishments in Cordova and Conception. Their agents visit every accessible trading post of the far West, and in the villages of the distant Rio Bermejo settlements the traveler encounters tap-room moralists full of *vino del pays* and maudlin sentiment.

The natives of the less accessible upland provinces have at least the common sense to fuddle with inexpensive poisons. Coca plants grow wild in the eastern foot-hills of the Andes, and in the Province of Salta the narcotic beverage known as *maté*, or Paraguay tea, can be had for the trouble of fetching the raw material from the woods and setting the tea-pot a-boiling. The *maté* plant, *Ilex Paraguayensis*, with a variety of more or less unpronounceable Indian names, is simply a South-American variety of holly, and like the *yule bosk* ("Christmas bush") of Northern Europe, grows abundantly in deep glens and damp highland forests.

SOUTH AMERICAN MAIL-CARRIER.

Its leaves, after being dried on hurdles, are coarsely pulverized, with or without an addition of spices, and are then ready for use. In the border towns of Salta, ten pounds of the dried leaves can be bought for a *pesita* (about 25 cts.), while Chinese black tea would cost at least forty cents a pound. The name *maté* is derived from an Indian word originally applied to the gourd or calabash, in which the boiled infusion of the leaves was handed around. The effects of the beverage closely resemble those of common tea, so much so, indeed, that the two vices are interchangeable. A tea toper can renounce his favorite drink easily enough, if guaranteed an unlimited supply of the equivalent narcotic. Judging from the

estimates of the Buenos Ayres Board of Trade, the *maté* traffic is gradually extending farther south, but the sales of wine and brandy show a corresponding increase, as an additional proof that the introduction of "mild stimulants" can by no means be relied upon to prevent the use of stronger poisons.

The southern pampas form an ocean-like plain, overgrown with thistles and stunted varieties of acacia trees, and near the western border are almost exclusively used for pastoral purposes, though wheat would thrive well, and the foot-hills of the Andes might become an Eden of orchard produce. A few dozen apple-trees introduced by emigrants from Chili have multiplied till they form veritable forests, and it is a strange fact that the wood of those fruit gardens of the wilderness is shipped by thousands of bundles to supply the fuel market of Buenos Ayres.

The western Indians still preserve a good deal of their wild independence. Many of their chiefs (*caciques*) are able to cope with the best militia commanders of the indolent Creoles, and are naturally disinclined to pay a tax in coin so long as they can settle their border quarrels with powder and lead.

The climate of the western highlands is extremely salubrious, and the Province of Tucuman claims to have produced a female Methuselah: the negress Juanna Truxo, who, in 1780, died at the age of one hundred and sixty-five years, yielding the palm of longevity only to the English fisherman, Jenkins (168), and the Bulgarian Peter Czartan, whose age is variously stated at 169, and 171 years. She was the slave of a Spanish physician whose grandfather had made his plantation a nursery of young darkeys, and kept the genealogical record of all his matrons and patriarchs. The doctor himself reached an age of seventy-eight years, and remembered that Juanna was considered the oldest female inhabitant of the neighborhood when he was a mere boy.

The "Dietetic Reform Club" of London, England, a few years ago assembled its converts at the Langham Hotel, where forty different hashes, *ragouts*, and pies, all of horse meat, were served, with such *entremets* as "hippographic sausages," "*cotelets a la Rosinante*," etc., etc. The members of that Association should settle in the Argentine Province of Catamarca, where the Indian word for horse-flesh has become a synonym of "meat" and even of "food." The Indios Vastecos raise large herds of horses for the principal purpose of salting their meat, and can plead the verdict of the Altai Tartars, who reserve mutton for their women, and pronounce horse-flesh the only fit food for an able-bodied man.

(To be continued.)

WOMEN AS SANITARIANS.—To the woman whose destiny it is to remain a large share of the time at home, whose divinely appointed mission it is "to guide the house," a new sphere of usefulness and efficiency opens with the knowledge that in sanitary matters an ounce of prevention is worth a ton of cure. There is nothing in hygiene that she cannot comprehend, and too often does she realize this and begin to study it, when, too late, she stands beside the still form of some precious one, slain by some of those preventable diseases that, in the coming sanitary millennium, will be reckoned akin to murders.

More than four years ago Dr. B. W. Richardson, President of the British Medical Association, said: "I want strongly to enforce that it is the women on whom full sanitary light requires to fall. Health in the home is health everywhere; elsewhere it has no abiding-place. I have been brought indeed by experience to the conclusion that the whole future progress of the sanitary movement rests for permanent and executive support on the women of the country. When, as a physician, I enter a house where there is a contagious disease, I am, of course, primarily impressed by the type of the disease, and the age, strength, and condition of the sick person. From the observations made on these points I form a judgment of the possible course and termination of the disease, and, at one time, I should have thought such observations sufficient. Now I know them to be but partially sufficient. A glance at the appointments and arrangements and management of the house is now necessary to make perfect the judgment. By this glance is detected what aid the physician may expect in keeping the sick in a condition most favorable for escape from death; and by this is also detected what are the chances that the affection will be confined to one sufferer, or distributed to many. As a rule, to which there are the rarest exceptions, the character of the judgment hereupon is dependent on the character of the presiding genius of the home, or the woman who rules over that small domain. The men of the house come and go; know little of the ins and outs of anything domestic; are guided by what they are told, and are practically of no assistance whatever. The women are conversant with every nook of the dwelling, from basement to roof, and on their knowledge, wisdom, and skill the physician rests his hopes. How important, then, how vital, that they should learn, as a part of their earliest duties, the choicest sanitary code."—*Sel.*

THE EVILS OF RESIDENT JANITORS IN SCHOOLS.— The Brooklyn *Medical Journal*, among its editorials, comments upon the above subject as follows : —

"If janitors of schools are ever permitted to reside within the school building, it should only be when there are no children in their families. Time and time again it has happened that contagious disease has attacked the children of janitors, and that several days have elapsed before the patients were removed. During the interval large numbers of children have been exposed, and it is to be presumed that the disease has thus been spread.

"In our judgment, the family of a janitor should reside outside of the school for other reasons as well. The most careful housekeeper knows how difficult it is to prevent the odors of the kitchen from finding their way into parlor and halls ; and those who have much to do with visiting schools where the family of the janitor resides on the premises, have doubtless detected these same odors in the school-rooms.

"Dr. Edson of the New York Board of Health, states that during the year 1890, six instances of diphtheria in the families of janitors living in public schools were brought to his notice. The practice of having janitor's families live in the school is a dangerous one to the public health, and should be discontinued."

NO PLACE FOR DOCTORS.— The natives of the Orkney Islands are said to enjoy excellent health and to live long. For these blessings they are indebted to the bracing climate and their healthful outdoor occupations. A native of one of these islands was asked whether her people were generally long lived. With unconscious *naïvete* she replied, "Yes, they live to a great age ; there is n't a doctor on the island ! "

SPRINGS.— It is an almost universal notion that a spring which issues from the earth "of its own accord," and which generally looks crystal clear, must be pure ; but, though the water has been filtered by passing down through a stratum of earth, it must be remembered that there are two hundred and fifty times as much carbonic acid in the soil as there are in the air, and that the water becomes aerated with it, and that this aids in dissolving various substances, and consequently springs come to have a great variety of chemical constituents in widely varying amounts. The strata through which water passes determine its purity or impurity, and the same want of sanitary care that would contaminate a well, will just as surely pollute a spring. Typhoid fever has been directly traced to contaminated springs.— *Sel.*

OBLIGED TO FOREGO HIS TOBACCO.— A late writer relates the following tobacco incident : "Some years ago, an eminent divine from the Old World was invited to deliver a course of college lectures in the good old-fashioned town of Oberlin, O. Before the course was completed, his supply of chewing-tobacco was exhausted. Making his extremity known to the professor in whose family he was a guest, he requested that a supply might be procured for him.

"As no use of the weed by professor or student is tolerated in Oberlin College, his host was in a predicament. Should he, in defiance of law, himself purchase the forbidden article ? Or, not venturing on this, should he relegate the commission to one of the students ? He finally decided on the only right step. Seeking the apartment of his distinguished guest, he frankly explained that he could not supply his wants without breaking the rule which, from the beginning, had been observed by all the teachers and twenty thousand pupils.

"The doctor made answer that he should not bring dishonor upon the rule while in that pure atmosphere."

SHUT-UP ROOMS.— Having planned to give the rooms the life-giving light, see to it that every one which is to be occupied at night is opened so as to get an unobstructed flood of it during the sunniest part of the day. The murmur comes back, "It will fade your carpets." Very likely, but carpets were made for people and not people for carpets, and any right-minded mother would prefer to see the roses on her children's cheeks than on her carpets, when it comes to a choice between them. There are many houses, occupied by people too busy to use a parlor, where the sunniest corner is occupied by an unopened, unused "best room," which is only the survival of a traditional belief that no house is complete without one. The interest of the money on the carpet and furniture would pay for the services of a stout maid during many of the severest weeks of the year ; the room is the expression of a yearning for and a dream of leisure that never comes ; far better have the reality of aid to lighten household duties, that are much too heavy in all the newer and poorer sections of our land.— *Sel.*

Mr. Fangle (looking over the house he had just moved into) —"I wonder who lived here last ? "

Mrs. Fangle —"I do n't know ; but the lady was a Christian."

"How can you tell ? "

"She left no rubbish in the cellar."— *Lippincott's Magazine.*

PLUTARCH ON FLESH-EATING.

You ask me upon what grounds Pythagoras abstained from feeding on the flesh of animals. I, for my part, marvel of what sort of feeling, mind, or reason, that man was possessed who was the first to pollute his mouth with gore, and to allow his lips to touch the flesh of the murdered being; who spread his table with the mangled forms of dead bodies, and claimed as his daily food what were but now beings endowed with movement, with perception, and with voice.

How could his eyes endure the spectacle of the flayed and dismembered limbs? How could his sense of smell endure the horrid effluvium? How, I ask, was his taste not sickened by contact with festering wounds, with the pollution of corrupted blood and juices? "The very hides began to creep, and the flesh, both roast and raw, groaned on the spits, and the slaughtered oxen were endowed, as it might seem, with human voice." This is poetic fiction; but the actual feast of ordinary life is, of a truth, a veritable portent — that a human being should hunger after the flesh of oxen actually bellowing before him, and teach upon what parts one should feast, and lay down elaborate rules about joints and roastings and dishes. The first man who set the example of this savagery is the person to arraign; not, assuredly, that great mind, which, in a later age, determined to have nothing to do with such horrors.

For the wretches who first applied to flesh-eating may justly be alleged in excuse their utter resourcelessness and destitution; inasmuch as it was not to indulge in lawless desires, or amidst the superfluities of necessaries, for the pleasure of wanton indulgence in unnatural luxuries, that they (the primeval people) betook themselves to carnivorous habits.

If they could now assume consciousness and speech, they might exclaim, "O blest and God-loved men who live at this day! What a happy age in the world's history has fallen to your lot, you who plant and reap an inheritance of all good things which grow for you in ungrudging abundance! What rich harvests do you not gather in! What wealth from the plains, what innocent pleasures is it not in your power to reap from the rich vegetation surrounding you on all sides! You may indulge in luxurious food without staining your hands with innocent blood. While as for us wretches, our lot was cast in an age of the world the most savage and frightful conceivable. *We* were plunged into the midst of an all-prevailing and fatal want of the commonest necessaries of life from the period of the earth's first genesis, while yet the gross atmosphere of the globe hid the cheerful heavens from view, while the stars were yet wrapped in a dense and gloomy mist of fiery vapors, and the sun (earth) itself had no firm and regular course. Our globe was then a savage and uncultivated wilderness, perpetually overwhelmed with the floods of the disorderly rivers, abounding in shapeless and impenetrable morasses and forests. Not for us the gathering in of domesticated fruits; no mechanical instrument of any kind wherewith to fight against nature. Famines gave us no time, nor could there be any periods of seed-time and harvest.

"What wonder, then, if, contrary to nature, we had recourse to the flesh of living beings, when all our other means of subsistence consisted in wild corn or a sort of grass, and the bark of trees, and even slimy mud, and when we deemed ourselves fortunate to find some chance wild root or herb? When we tasted an acorn or beech-nut, we danced with grateful joy around the tree, hailing it as our bounteous mother and nurse. Such was the gala-feast of those primeval days, when the whole earth was one universal scene of passion and violence, engendered by the struggle for the very means of existence.

"But what struggle for existence, or what goading madness has incited *you* to imbrue your hands in blood, — you who have, we repeat, a superabundance of all the necessaries and comforts of existence? Why do you belie the earth, as though it were unable to feed and nourish you? Why do you do despite to the bounteous goddess Ceres, and blaspheme the sweet and mellow gifts of Bacchus, as though you received not a sufficiency from them?

"Does it not shame you to mingle murder and blood with their beneficent fruits? Other carnivora you call savage and ferocious, — lions and tigers and serpents, — while yourselves come behind them in no species of barbarity. And yet for them murder is the only means of sustenance; whereas to you it is a superfluous luxury and crime."

For, in point of fact, we do not kill and eat lions and wolves, as we might do in self-defense — on the contrary, we leave them unmolested; and yet the innocent and the domesticated and helpless and unprovided with weapons of offense, — these we hunt and kill, which Nature seems to have brought into existence for their beauty and gracefulness.

Nothing puts us out of countenance, not the charming beauty of their form, not the plaintive

sweetness of their voice or cry, not their mental intelligence, not the purity of their diet, not superiority of understanding. For the sake of a part of their flesh only, we deprive them of the glorious light of the sun — of the life for which they were born. The plaintive cries they utter we affect to take to be meaningless; whereas, in fact, they are entreaties and supplications and prayers addressed to us by each, which say, "It is not the satisfaction of your real necessities we deprecate, but the wanton indulgence of your appetites. Kill to eat, if you must or will, but do not slay me that you may feed luxuriously."

Alas for our savage inhumanity! It is a terrible thing to see the table of rich men decked out by those layers-out of corpses, the butchers and cooks; a still more terrible sight is the same table after the feast; for the wasted relics are even more than the consumption. These victims, then, have given up their lives uselessly. At other times, from mere niggardliness, the host will grudge to distribute his dishes, and yet he grudged not to deprive innocent beings of their existence!

Well, I have taken away the excuse of those who allege that they have the authority and sanction of Nature. For that man is not, by nature, carnivorous is proved, in the first place, by the external frame of his body — seeing that to none of the animals designed for living on flesh has the human body any resemblance. He has no curved beak, no sharp talons and claws, no pointed teeth, no intense power of stomach or heat of blood which might help him to masticate and digest the gross and tough flesh-substance. On the contrary, by the smoothness of his teeth, the small capacity of his mouth, the softness of his tongue, and the sluggishness of his digestive apparatus, nature sternly forbids him to feed on flesh.

If, in spite of all this, you still affirm that you were intended by nature for such a diet, then to begin with, kill you yourself what you wish to eat,— but do it yourself with your own natural weapons, without the use of butcher's knife, or ax, or club. No; as the wolves and lions and bears themselves slay all they feed on, so, in like manner, do you kill the cow or ox with a grip of your jaws, or the pig with your teeth, or a hare or a lamb by falling upon and rending it there and then. Having gone through all these preliminaries, then sit down to your repast. If, however, you wait until the living and intelligent existence be deprived of life, and if it would disgust you to have to rend out the heart and shed the life-blood of your victim, why, I ask, in the very face of Nature, and in despite of her, do you feed on beings endowed with sentient life? But more than this — not even after your victims have been killed, will you eat them just as they are from the slaughter-house. You boil, roast, and altogether metamorphose them by fire and condiments. You entirely alter and disguise the murdered animal by the use of ten thousand sweet herbs and spices, that your natural taste may be deceived and be prepared to take the unnatural food. A proper and witty rebuke was that of the Spartan who bought a fish and gave it to his cook to dress. When the latter asked for butter, and olive oil, and vinegar, he replied, "Why, if I had all these things, I should not have bought the fish."

To such a degree do we make luxuries of bloodshed, that we call flesh "a delicacy," and forthwith require delicate sauces for this same flesh-meat, and mix together oil and wine and honey and pickle and vinegar with all the spices of Syria and Arabia — for all the world as though we were embalming a human corpse. After all these heterogeneous matters have been mixed, and dissolved, and, in a manner, corrupted, it is for the stomach, forsooth, to masticate and assimilate them — if it can. And though this may be, for the time, accomplished, the natural sequence is a variety of diseases, produced by imperfect digestion and repletion.

Flesh-eating is not unnatural to our physical constitution only. The mind and intellect are made gross by gorging and repletion; for flesh-meat and wine may possibly tend to give robustness to the body, but they give only feebleness to the mind. Not to incur the resentment of the athletes, I will avail myself of examples nearer home. The wits of Athens, it is well known, bestow on us Bœotians the epithets "gross," "dull-brained," and "stupid," chiefly on account of our gross feeding. We are even called "hogs." Menander nicknames us the "jaw-people." Pindar has it that, "Mind is a very secondary consideration with them." "A fine understanding of clouded brilliancy" is the ironical phrase of Heraclitus.

Besides and beyond all these reasons, does it not seem admirable to foster habits of philanthropy? Who that is so kindly and gently disposed towards beings of another species would ever be inclined to do injury to his own kind? I remember in conversation hearing, as a saying of Xenocrates, that the Athenians imposed a penalty upon a man for flaying a sheep alive, and he who tortures a living being is little worse (it seems to me) than he who needlessly deprives of life and murders outright. We have, it appears, clearer perceptions of what is contrary to

propriety and custom than of what is contrary to nature. . . .

Reason proves both by our thoughts and our desires that we are comparatively new to the reeking feasts of *kreophagy*. Yet it is hard, as says Cato, to argue with stomachs, since they have no ears; and the inebriating potion of custom has been drunk, like Circe's, with all its deceptions and witcheries. Now that men are saturated and penetrated, as it were, with love of pleasure, it is not an easy task to attempt to pluck out from their bodies the flesh-baited hook. Well would it be if, as the people of Egypt turning their back to the pure light of day, disemboweled their dead, and cast away the offal as the very source and origin of their sins, we, too, in like manner, were to eradicate bloodshed and gluttony from ourselves and purify the remainder of our lives. If the irreproachable diet be impossible to any by reason of inveterate habit, at least let them devour flesh as driven to it by hunger; not in luxurious wantonness, but with feelings of shame. Slay your victim, but at least do so with feelings of pity and pain, not with callous heedlessness and with torture.— *Plutarch, 120 A. D.*

JAPANESE PHYSICIANS AND MEDICINES.

BY ERNEST W. CLEMENT.

IN the January number of GOOD HEALTH, I gave an outline of "Japanese Massage," and incidentally treated of moxa and acupuncture. I wish now to write of Japanese physicians and medicines, more especially from our own experience. But it is advisable, by way of introduction, also to refer briefly to the old-style doctors of Japan. The Japanese *amma*, or *masseurs*, were, in fact, the only physicians called, by many, particularly the lowest classes; but there were also "regular" physicians, employed by the well-to-do and wealthy classes.

Dr. Griffis says, in his "Mikado's Empire," that "the *materia medica*, system, practice, and literature of the healing art were borrowed from China; but upon these, as upon most other matters, the Japanese improved." This does not speak well for the Chinese system; for with all the "improvement," the Japanese doctors of former times were quite incompetent, and had not nearly so much scientific knowledge of the human body as had the blind *masseurs*. Charles Peter Thunberg, "a Swedish physician, naturalist, and traveler," who visited Japan, is reported, in Hildreth's "Japan As It Was And Is," as saying: "The Japanese . . . knew nothing of anatomy or physiology. They were ignorant of the circulation of the blood, feeling the pulse for a quarter of an hour, first in one arm and then in the other, not knowing that both beat alike." Physicians, like priests, were distinguished from other persons by the style of hair-dressing." Thunberg says that in one place "they shaved the whole head; in another, they had the option of retaining all their hair, like the boys and women." "Of surgery, they knew next to nothing."

Many of the old-style medicines and methods were decidedly curious, and open to the charge of basing their efficacy on the ignorance and superstition of the patient as well as of the doctor. Referring again to Hildreth's valuable work, we read of a village "famous for the sole manufacture of a medicine of great repute, found out by a poor but pious man, to whom the god *Jacusi* [*Yakushi*], the protector of physic and physicians, revealed in a dream the ingredients, which are certain bitter herbs growing upon the neighboring mountain. This story helped the sale of the medicine, by which the inventor soon grew very rich, so that he was not only able to build a fine house for himself, but also a small temple, opposite his shop, and highly adorned in honor of the god who had given him the recipe." Dr. W. E. Griffis once analyzed the famous *dosha* powder, "which was said to cure various diseases, and to relax the rigid limbs of a corpse," and found it "nothing but unefficacious quartz sand, mixed with grains of mica and pyrites." This "pious fraud" was manufactured and sold only by the priests of a certain Buddhist sect, and "might cause, but not cure, a headache."

According to a paragraph in a recent American paper, the Japanese doctors used to make a tonic out of oyster-shells. "When these doctors wanted to give a badly run-down patient a tonic that would make him feel as vigorous as a base-ball pitcher in the first inning, they carefully broke up an old oyster shell, steeped the pieces in water for half an hour, and gave a tablespoonful of the water three times a day. When assisted by a robust imagination and a rhubarb pill, these potent doses were never known to fail. At least, so the Japanese grandmothers declare."

Their medicines were not so numerous but that they could be carried about by the doctors in a

black lacquer box, comprising three or four drawers, capable of being pushed out from either end.

It would seem that the Japanese were accustomed, like ourselves, to joke about the doctors taking their own pills; for they had a proverb, "The doctor does not keep himself well." Compare, "Physician, heal thyself."

But we must now refer to some of our own experiences. We lived in the interior, in a city of about 25,000 inhabitants, among whom we were the only foreigners. When we first went there, we often wondered what we should do in case of sickness; for, although there were several doctors in the place, we had not been favorably impressed with their training and skill. During the first year or more, fortunately, with the exception of slight malarial troubles, we kept in good health. Not long after we were settled in our new home, a physician came there from Tokio, to take charge of the public hospital. He was a graduate of the Medical Department of the Imperial University, and had, therefore, been under the instruction of German professors. He was a middle-aged man; prepossessing in appearance (better looking in European than in Japanese costume), quite vivacious in society, energetic in his practice, and highly recommended by many of our friends as the best *o-isha-sama* ("honorable physician Mr.") in the city. After awhile, we had occasion to call this doctor, who was neither awkward nor blundering, and proved more kind and tender than we had supposed a Japanese doctor could be. After that we banished our anxiety, and put great confidence in our jovial friend, whose light-heartedness alone was almost enough to drive away aches and pains!

When he came to vaccinate our baby, he did it thoroughly, too thoroughly, by piercing each little arm five times. Five of the ten pricks, three on one arm and two on the other, "took," and have left big scars, which will to a certain extent bar the style of short-sleeved dresses, when she becomes a lady! But, as safety is more important than beauty, especially in that country of cholera, small-pox, etc., we ought not to complain.

AN OLD-STYLE JAPANESE DOCTOR.

Our good doctor was possessed in a strong degree of a certain trait which is a national characteristic. This is a complete freedom from care, anxiety, or worry, an utter *sang-froid*, which is revealed in feeling and in action. This national trait is both vexing and refreshing: vexing, because it seems to indicate a lack of interest and energy; refreshing, because it is in marked contrast to the rushing, whirling, worrying, fretting life of America. Let me illustrate this trait by two or three anecdotes of our worthy doctor.

One evening, as a member of our family was suffering from cholera morbus, we sent for some medicine to give immediate relief. Our cook was dispatched to the doctor's with instructions that it was unnecessary for him to call, that he need only send more of the

medicine formerly prescribed in that case. When cook reached the house, he found a large company assembled there, and, having delivered his message, was informed that the doctor would call soon! Cook again stated that medicine only was needed; but the doctor repeated that he would come immediately to the house. That may have been about 8 o'clock; 9 o'clock, no doctor; 10 o'clock, no doctor; so we all went to bed and to sleep. By morning the pain had vanished, but about 9 o'clock the doctor came and apologized for his non-appearance the evening before by saying that he "had company," and could not get away! It seems that he had just moved into a new house, and, according to Japanese custom, was entertaining the friends who called to congratulate him. I don't like to misjudge any one; but I have a lurking suspicion, that, after "entertaining" awhile, he had drunk too much *saké* to be in a proper condition to make a professional call! But it was surely a queer excuse he offered for failing to call as he had agreed. What would you think of your physician, if he should find it impossible to leave guests for the sake of making a call or even a prescription?

Again: one of us was suddenly seized one morning with *la grippe*, which was then epidemic in Japan. I called at the doctor's house, received a prescription, and was told that he would call in a little while, as he was going to Judge ———'s on the next street. The entire morning passed, but no doctor came; and during the day I incidentally learned that he had gone to a town some fifteen miles away, to attend one of the members of the Imperial Diet!

On another occasion, I was myself "down" with a high fever, severe headache, and sore throat, and in the evening sent for the doctor. I have forgotten the reason why he could not come, and sent instead his assistant or pupil; but I can remember that I was decidedly vexed at his seeming lack of interest in a pretty bad case of influenza. Of course, not one of these cases was serious; but all might have been dangerous. It may be that he holds the "Christian Science" idea that pain is only imaginary; it is after all true that sometimes, but not always, the *laissez faire* method is sufficient.

Although there are drug stores, each physician ordinarily has his own apothecary department, where he fills his own prescriptions. The system of prescriptions is, in general, the same as ours; but it differs in the method of administering liquid medicines. These are generally put up in bottles, marked on the outer surface with some short and some long raised lines, which indicate the quantity to drink at once. For instance, an adult and a child may drink the same medicine from the same bottle; but, while the adult drinks the quantity between two long lines, the child will drink the smaller quantity between a long and a short line. It is also the case that all the medicine in the bottle is to be taken within a certain period, say two or three days, but need not be taken at regular intervals. It may be used, now and then, more or less at a time, according to the feeling of the sick person; and I presume that, if the patient feels very bad, he may drink it all at once! Patent medicines are used very extensively; in 1874, they numbered, according to Dr. Griffis, nine hundred and forty-four different kinds in use.

Japanese doctors also give theoretical instruction to nurses; but they often fail to supplement or illustrate their teachings by affording practice-work under inspection. As a general thing, they decline to call to see sick children, who, unless they are dangerously ill, must be carried to the doctor.

But I would not have you think that Japanese physicians are only a target for ridicule. The old-school doctors are, of course, more given to reprehensible practices, and are more inclined to prey on the ignorant and superstitious than are the new-school physicians. The younger and modern class, thoroughly instructed in Western medical science, are capable and successful. In Tokio, the most skillful and trustworthy surgeon is a Japanese; and there are many native doctors who are as good as foreign physicians. The fact is, that medical missionaries, so important a factor in other fields, are unnecessary in Japan, except so far as a few may be able to find employment in the open ports by practicing among foreigners.

The Japanese physicians are generally so successful that they are able to lay up considerable money, and to live in fine houses, sometimes the finest in the place. This they do from fees which are ordinarily small, although the charges are usually proportioned to the financial condition of the patient. A Dr. Matsumoto has stated in the San Francisco *Chronicle*, that Japanese doctors do not present a bill, even to the wealthy, and treat the poor gratuitously. The latter kindness is in accord with a Japanese proverb, which says: "When the twin enemies, poverty and disease, invade a home, then he who takes aught from that home, even though it be given him, is a robber." Dr. Matsumoto says: —

"When a rich man calls in a physician, he does not expect that he will be presented a bill for medical services. In fact, no such thing as a doctor's bill is known in Japan, although nearly all the other modern

practices are in vogue there. The doctor never asks for his fee. The strict honesty of the people does not make this necessary. When he is through with a patient, a present is made to him of whatever sum the patient or his friends may deem to be just compensation. The doctor is supposed to smile, take the fee, bow, and thank his patron."

Being a Japanese, Dr. M—— ought to know the facts, and is probably stating the general truth. But our Japanese doctor did not carry out that practice toward us, our servants, and some of our friends; he always sent in carefully itemized bills, made out and receipted according to Japanese business forms.

A large number of the common people in Japan are, of course, still sunk in ignorance and superstition, and cannot, therefore, appreciate scientific methods of healing. They still rely upon prayers and offerings to idols; powders, tickets, and charms purchased at temples; such silly practices as, in case of sore eyes, rubbing the eyes of an idol, and then their own eyes, or posting up at the shrine of a certain god tablets inscribed with the character *me* (eye). But even in civilized and Christian America we may find the exact counterpart of these heathen beliefs in the so-called "Christian Science" and "Faith Cure" doctrines. Let us hope, that, as the Japanese advance in civilization and knowledge, they may find the safer reliance in "Science Cure" and "Christian Faith."

THEY BELONG TOGETHER. — At a certain railway station, an anxious engineer came to the door of the baggage car, and said, "Is there anything for me?" After some search among boxes and trunks, the baggage-master dragged out a demijohn of whisky.

"Anything more?" asked the man.

"Yes," said the temperance baggage-man, "here's a gravestone. It must surely belong to you; for it ought to go with that liquor."

A YANKEE doctor caused a patient to sleep sweetly for years by the nightly administration of a sugar-coated dried whortleberry, which the patient supposed to be an opium pill.

OBSERVATIONS ON FLESH DIET ONE HUNDRED YEARS AGO. — One of the proofs that the taste of flesh is not natural to man, is the indifference which children exhibit toward it, and the preference they give to vegetable foods, such as milk-porridge, pastry, fruits, etc. It is of the last importance not to *denaturalize* them of this primitive taste, and not to render them carnivorous, if not for health reasons, at least *for the sake of their character*. For, however the experience may be explained, it is certain that great eaters of flesh are, in general, more cruel and ferocious than other men. This observation is true of all places and of all times. . . . All savages are cruel, and it is not their morals that urge them to be so; this cruelty proceeds *from their food*. They go to war as to the chase, and treat men as they do bears. . . . Homer represents the Cyclops, who were flesh-eaters, as frightful men, and the Lotophagi (lotus-eaters) as a people so amiable that as soon as one had any dealing with them, one straightway forgot everything, even one's country, to live with them. — *Jean Jacques Rousseau, 1778.*

THE stuff that dreams are made of — heavy, late suppers.

CARDINAL NEWMAN defined a gentleman as "one who never inflicts pain."

STRONG drink, tobacco, and impurity are the three great sifters of the human race; and alas! how few are the survivals that are in no wise marred by these relentless mills that grind out death and destiny! — *Frances E. Willard.*

A FACETIOUS college professor, who believed in the value of pure air, when a change of classes took place in his recitation room, used to remark to the janitor, "Please open the windows, and let the remains of the senior class pass out of the room!"

A REMARKABLE CALCULATION. — Canon Sydney Smith, equally celebrated as a *bon vivant* and a wit, at the termination of his life, writes thus to his friend, Lord Murray: "You are, I hear, attending more to diet than heretofore. If you wish for anything like happiness in the fifth act of life, eat and drink only about *one half* what you could eat and drink. Did I ever tell you my calculation about eating and drinking? Having ascertained the weight of what I could live upon so as to preserve health and strength, and what I did live upon, I found that, between ten and seventy years of age, I had eaten and drunk *forty-four wagon-loads of meat and drink more than would have preserved me in life and health!* The value of this mass of nourishment I consider to be worth seven thousand pounds sterling. It occurred to me that I must, by my voracity, have *starved to death fully a hundred persons.* This is a frightful calculation, but irresistibly true."

HEALTH, GRACE, AND BEAUTY. — TENTH PAPER.

Walking.

WALKING in the open air is one of the most healthful of exercises when properly executed. Walking is a perfectly natural exercise, a knowledge of which it would seem should be intuitive with man, as with lower animals. Nevertheless, it is a fact, of which any intelligent observer can readily assure himself, that good walkers are very rare. Among women especially, few really good walkers can be found. Grace and strength are so mutually dependent and so constantly associated with healthful activity, that it may be considered as an axiom that to be a good walker a person must first of all have a good muscular development, which means not only strength but symmetry of development. One may possess the strongest of legs without being a good walker.

To walk well, one must be able to carry the body erect, and to balance it well while executing movements with the legs, and to some extent also with the arms. In walking, one should appreciate the fact that the whole body is occupied with the movement. Not only are the muscles of the legs energized, but almost every muscle of the body is brought into activity. Free movement occurs only in the legs, but an energized condition is necessary in the muscles of the trunk, in order to preserve a proper poise, while slight movements are executed by the arms synchronously with the legs to aid in preserving the balance. The cardinal points to be observed in walking, are —

1. To maintain a correct poise, such as has frequently been described in these articles. In walking, the tendency will be to let the body fall out of poise, either forward or backward, or to allow the momentum of the forward movement to impart to some other part of the body undue amount of movement. In the correct walking poise, the chest and head will be carried well forward, so as to keep the weight of the body balanced over the balls of the feet, when the feet are together, or at a point midway between the balls of the feet when one foot is in advance of the other. The hips must be carried as far back as possible without bending the trunk forward. The stride should not be long, and the heels of the advanced foot should not strike the ground much before the toes. It is impossible to walk as some trainers direct, placing the toes before the heels.

2. The whole body should be energized, the skeleton not being allowed to assume the irregular movements naturally imparted to it by the springing action of the feet in throwing the body forward.

3. The lungs must be kept well inflated in walking, — taking deep, slow respirations, well expanding the chest.

4. The step should be elastic, but care should be taken to avoid a teetering or swaggering gait. A stiff, unelastic step is always fatiguing.

5. In walking for exercise, one should avoid a loitering or strolling gait. One often sees people upon the street taking a constitutional, walking with a slow, measured pace, and an air which suggests a funeral procession. Such a mode of walking is exhausting rather than invigorating.

The accompanying cuts are intended to illustrate a healthful style of walking. A careful study of the poise and action of these figures will serve to impress the correctness of the above rules.

Next month we will continue this subject, and give a number of illustrations showing bad modes of walking. We will also devote some space in future articles to a further consideration of the advantages of this form of exercise.

EXERCISE FOR AGED PERSONS.

ACTIVE exercise is necessary for the old as well as for the young. This fact is frequently overlooked by those who have passed the age of active usefulness in business. The retired merchant, lawyer, clergyman, or farmer, not infrequently settles down to a life of inactivity resulting in a speedy development of disorders which render life a burden, encourage the encroachments of age, and in many instances bring to a speedy termination a life which might have been prolonged for many years.

The change from life-long habits of active movement in the open air to the inertia of life in town, we have frequently recognized as the principal cause of disease and decrepitude in cases of men who had retired from active agricultural pursuits to enjoy the fruits of their labors.

Bodily activity is necessary for the maintenance of health at all periods of life, and at no period is it more important than in that of old age. At this period the normal activity of the vital functions is lessened, and attention to all the rules of hygiene is more essential for the maintenance of a physiological equilibrium than in earlier life, when the body still possesses a considerable amount of vital reserve. Certain physiological changes naturally occur in the old, which render the advantages derived from active muscular exercise indispensable. The most important of these changes belong in one of two categories:—

1. A lessening of the sensibility of the nerves and nerve centers, so that the nervous reflexes between the various vital organs, and between the external and internal structures upon which the normal activity of the automatic functions of the body depend, are interfered with. It is this lowering of the nerve sensibility which obtunds the sense of smell, dulls the

hearing, dims the eyesight, and lessens the sensibility to heat and cold, as well as to such general sensations as hunger, thirst, fatigue, etc. The octogenarian is less alive than when at youthful twenty, or a mature man of forty. He hears, sees, smells, tastes, and feels less than men at younger age. He enjoys less; he suffers less. This is Nature's mode of reconciling man to the relinquishment of his hold upon life when the hour of dissolution arrives.

Another class of changes of still greater significance involves the heart and blood-vessels. Early in life and up to middle age, the pulmonary artery, or large blood-vessel which conveys the blood from the heart to the lungs, exceeds in size the aorta, the vessel by which the blood is distributed from the heart throughout the body. As age advances, this disparity in size decreases by the shrinkage of the pulmonary artery, until at middle age its size is barely equal that of the aorta, and from this time onward, the decrease in the size of the pulmonary artery continuing, the aorta exceeds it in size, and to a degree which increases with advancing age. The same shrinkage in the blood-vessels appears also in the capillaries, which undergo a sort of withering, by which a large proportion of the small blood-vessels are obliterated. It is this change in the blood-vessels which causes the impairment of nutrition in the old, and the general shrinkage in the volume of blood. This lessening of the number of channels through which the blood flows from the tissues is one reason why the nutritive functions are lessened in activity in the old, since a restriction in the distribution of the blood supply throughout the body necessarily results in a lessened activity in the processes of growth and repair. The lessened size of the pulmonary artery also interferes to some degree with the aeration of the blood. Experiment has shown that the carbonic acid gas is exchanged for oxygen in the lungs much more rapidly when a high pressure is maintained in the blood-vessels of the lungs. As the pulmonary artery is lessened in size, the relative pressure between the blood in the lungs and other parts of the body is lessened, so that the exchange of carbonic acid gas for oxygen is more and more impeded. This fact is the occasion for the venous state of the blood in the old, which has long been recognized as one of the conditions of senility.

The changes resulting from age, above described, have most important relations to the hygiene of exercise in elderly persons. Habits of regular muscular exercise are in the highest degree conducive to the healthful activity of all the vital functions. Such exercises encourage circulation, through prompting the heart to increased activity, and aiding the return flow of blood, which is, to some degree, impeded by the narrowing of the pulmonary artery. They give increased appetite, and through increasing the activity of the muscles which carry on the act of respiration, they aid in the aeration and purification of the blood. Exercises which bring into active play the respiratory muscles are particularly beneficial, since they encourage the exchange of gases in the lungs and the absorption of oxygen, and this antagonizes one of the natural tendencies of old age.

Both active and passive movements are of great value for aged persons. Of first importance is discretion in the employment of exercises of any sort. Violent exercise must be strictly forbidden in persons of advanced age. It is especially important to insist upon this, since the lessening of nerve sensibility involves the danger that a man of advanced years may subject himself to an excessive amount of exercise without being aware of the fact until great mischief has been done. The young man may exercise so violently that he falls to the earth with exhaustion, and the next day find himself in readiness for another effort equally severe, and may repeat such efforts with apparent impunity; but with the aged man this is impossible. The sense of fatigue, Nature's danger sentinel, by which she crys "Enough" when there is danger of mischief from over-exertion, does not appear so promptly in the aged as in persons of younger years. Hence the man of sixty may exert himself beyond his strength without being aware of it at the time, but some hours or days later he finds himself in a state of exhaustion as the result of his effort, and the lessened activity of the reparative forces of the body renders recuperation slow and imperfect.

The rule for the aged person, then, should be, as regards the amount of exercise, to stop short of fatigue. The exercise should not be carried to a point of experiencing the slightest symptoms of fatigue; but the elderly man should cease to exercise even while he feels still full of energy and vigor, and able to put forth even a greater amount of effort than has already been made. This point is one of very great practical importance, and its neglect is a frequent cause of unwise abstinence from exercise, in consequence of attacks experienced by unwise efforts in this direction.

Violent exercise is often productive of great mischief in aged persons. The lessened size of the pulmonary artery renders it impossible for blood to be aerated with the same rapidity as in the young, while the increased muscular effort creates a power-

ful necessity for a great increase in the rate of blood purification by the elimination of carbonic-oxide and the absorption of oxygen. The narrow calibre of the pulmonary artery also tends to the accumulation of venous blood in the heart, by which its movements are interfered with, so that the active muscles will not be supplied with the amount of blood required by their activity.

Next month we will give some suggestions regarding exercises especially designed for persons in advanced years, together with some illustrations showing the advantages of such exercise.

PROPORTIONS OF THE HUMAN FIGURE. — Dr. Giovanni of Milan, has recently published in Italian, a remarkable work on the *morfologia* of the human body, which promises to work quite a revolution in the study of disease. Among other interesting facts presented by this eminent investigator are the following respecting the proper proportions of the ideal human figure : —

1. The height of a person is equal to the greatest stretch of the arms ; that is, the distance between the tips of the middle fingers when extended laterally as far as possible.

2. The circumference of the chest is equal to one half the height.

3. The length of the sternum, or breast bone, is equal to one fifth of the circumference of the chest.

4. The height of the abdomen, measuring from the pubic bone to the end of the sternum, not including the ensiform cartilage, is two fifths the circumference of the chest. The umbilicus marks the middle point between the pubic bone and the lower end of the sternum.

5. The greatest distance between the large bones of the pelvis is four fifths the height of the abdomen.

Represented in inches these measurements are as follows for a man and a woman who closely approach the ideal type : —

	Man.	Woman.
Height	68.8 in.	64 in.
Extreme stretch of arms	68.8 "	64 "
Circumference of chest	34.5 "	31.8 "
Length of sternum	6.8 "	6.4 "
Height of abdomen	12.9 "	12 "
Width of pelvis	10.4 "	10.1 "

BENEFITS OF PHYSICAL DEVELOPMENT. — The awards of the Smyth mathematical prize in Bowdoin College for the past six classes present a remarkable, if not a representative, phenomenon. This prize of $300 is based on a course in mathematics extending over two years, and is the most important college prize. Of six consecutive recipients of this prize the first was the winner of the quarter-mile run ; the second was the pitcher of the college base-ball nine ; the third was the most brilliant performer on the trapeze ; the fourth was a man of good physical development without special athletic attainments ; the fifth was the catcher of the college base-ball nine and the best general athlete in college ; the sixth is a candidate for a position on the college boat crew, and will next year be a member of the foot-ball eleven. — *President Hyde in June Forum.*

THE PERILS OF EXERCISE. — Every one who engages in the practice of gymnastics should understand that all kinds of exercise are not to be regarded as healthful. Such violent exercises as base-ball playing, rowing matches, and many forms of athletic sport are by no means conducive to health. Dr. Morgan has recently been collecting statistics bearing upon this point. He found of thirty-two athletes, members of a New York club five years ago, three are dead of consumption, four or five have become lop-shouldered, and five have to wear trusses. According to the *Canada Health Journal*, Dr. Patton of the United States National Soldiers' Home, has found that eighty per cent of the five thousand soldiers in the Home are suffering from some kind of heart disease due to forced exertion in the military campaigns.

AN old gentleman not abreast with the times as regards physical training, passing a suburban school for young women, and looking at the grounds, saw fourteen girls running in Indian file up a driveway. Each wore a loose blouse and short skirt of dark blue, black stockings, and low, flexible shoes. They had their heads up, their shoulders down and well back, and kept their mouths closed. On they ran rapidly, following an instructor, who led the way along the winding road until they disappeared.

"Bless my soul ! " exclaimed the astonished man. "Who and what are they ? "

"That 's the running class," was the reply. "Almost any fine morning you can see these girls start out for a mile and a half spin. The teacher of gymnastics is always with them, and sees that no one overtaxes herself."

"HENRY is a great head worker," said a fond but ignorant mother. "He won several prizes at college for *sculling*." — *Washington Star.*

THE IMPROVED-DRESS MOVEMENT.

BY E. L. SHAW.

THE Chicago society for the promotion of physical culture and correct dress, as represented by Mrs. Frank Stuart Parker, in her able addresses delivered at Chautauqua this season, exhibits the general attitude of enlightened women upon this subject. Feeling the need of direct, aggressive effort, and realizing that little could be accomplished in the way of dress reform so long as the people's standard of beauty in the human figure continued to be a wasp waist and a body tilted out of plumb, this club has constantly kept the work of changing or modifying this standard in view. To this end, "line upon line, and precept upon precept" in the way of lectures and discussion upon he laws of physical culture and relative proportion have been instituted, which soon or late are sure to have their effect upon the masses. Referring to the way in which this educational effort is sometimes met by the class which it is intended to benefit, Mrs. Parker says: —

"I once showed a picture of Juno to a woman who had come to me for lessons in Delsarte. She was laced very tightly, and I told her it would be impossible for her to practise the exercises without some change in her manner of dress; that a first essential to grace was freedom of movement. She said, in a most decided manner, that she could not think of putting on the 'reformed dress' as she called it. She disapproved of it wholly and entirely; she was very much too large. I held up a photograph of Juno, remarking that there was a rather large woman who did not consider it necessary to wear a corset. I wish you could have seen the expression on her face as she said, 'O, I would not like to look like *that!* I do not think it is pretty; my husband would not like it either.'"

The improved dress as introduced by Mrs. Parker before the Chautauqua Assembly, is directly in the line of the reform which GOOD HEALTH has advocated for years, and does not differ radically from many of the improvements introduced by woman's clubs throughout the country. Its main points of departure from the ordinary outfit are in the underwear, the position of the waist line, and the reduction in the number of garments worn. The entire underclothing is in three pieces. Over this is the dress proper, which completes the number — four pieces in all.

Mrs. Parker says, "Fourteen years ago, I wore *thirteen* pieces when dressed; now I wear only *four.*" These four garments are the "combination suit," the "shapes," the "dress form," and the "dress."

The combination suit is identical with the union underwear so widely known. "Shapes" is a new article, combining stockings and drawers in one, reaching from soles to waist, and secured there by a loose drawstring. These, drawn over the combination suit, never slip down nor wrinkle when made the proper size. The "dress form" is a sleeveless waist and skirt united, over which is worn the dress, draped upon it in the manner best in accord with the wearer's figure, style, position, occupation; its length being, as we suppose, a matter of taste and convenience. Mrs. Parker's various costumes donned in succession upon the lecture platform at Chautauqua, simply cleared the floor.

One undoubted reason for the present agitation on the subject of dress is the great demand upon woman's strength in the public character of her work. She is coming in direct competition with men, and therefore cannot afford to unduly hamper herself. She is beginning dimly to see that if she would stand any chance whatever in the race with her male competitors, she must arrange to have, with them, equal freedom of muscle and limb. Thus, innovations which, a few years ago she would have spurned, she now welcomes, or at least "takes to" very kindly. But what we are apt to term innovations in woman's dress is only *evolution,* after all, according to Mrs. Parker's showing: —

"In looking over a book of costumes of the twelfth century, I found a great similarity between the dress

of the women and the men; in fact, I could not tell a man's dress from a woman's without looking at the name written underneath the picture. I looked on through the book, and found that by and by changes began to creep into the men's dress, while the woman's remained the same. The skirts began to shorten, the sleeves began to grow less voluminous, lace, ruffles, necklaces, and bonneted plumes began to disappear; in fact, the whole dress became more and more sensible; a dress that one could work in better; that interfered less and less with the ordinary pursuits of a useful human being. The priest's robe and the lawyer's gown still held and do hold. Precisely the same experience is coming to women to-day. They are broadening their sphere so rapidly that instinctively they are dropping all hinderances. In the book of costumes mentioned, the first radical change was a shortening of the skirt. It is a remarkable coincidence that the first change advocated in woman's dress was a shortening of the skirt."

Little, however, has as yet been conceded in this last regard. The fact still continues to be practically ignored that woman is a bifurcated being; that God intended her to walk, not flounder and trip; and still she works on from day to day at a fearful disadvantage; going up and down stairs, climbing in and out of carriages, street cars, railway cars, with yards of clinging drapery wrapping about her feet, to the constant impeding of her movements and the infinite peril of life and limb. Long flowing robes properly belong to the *boudoir* and the drawing-room; to the women of sheltered, luxurious lives; but to the woman bread-winner of to-day, forced as she is to give a purely business reason for her very existence, they can only be a physical snare and peril.

Woman's need in this direction will sometime reach a pitch where it will demand a working dress affording free play to every muscle and limb of the body.

A CRUEL EXPERIMENT.— Dr. Lucy M. Hall, of Brooklyn, N. Y., proposes an experiment upon a North American Indian which would doubtless subject her to prosecution by the Society for the Prevention of Cruelty to Animals if she should undertake to carry out her idea. Here is a description of the experiment: —

"Put him into the garb of woman — feeble, delicate, gossamer woman — (who, by the way, has greater powers of endurance than any other animal on earth) into the tight corsets, which would jam his elastic ribs into his pendulous liver, his writhing stomach up against his wobbling heart and gasping lungs, his whole nutritive apparatus upward, downward, sidewise, anywhere, so that nineteen inches of steel and whalebone would compass his twenty-five-inch middle; add the dozen or more articles, with their aggregation of bands, strings, buttons, hooks, loops, clasps, and pins; place about him zone after zone of tight bandages, from which are suspended dozens and dozens of yards of gathered, puckered, plaited, and festooned material; tilt his body all out of plumb by fastening under his heels a wooden peg two inches high, and crush his toes into the space of a good-sized thimble. Weigh him down with a long, heavy outside wrap, perch a bonnet upon his head and stretch a dotted veil over his eyes, put his hands into tight kid gloves, and into these a pocket book and an umbrella; then send him out for business or for pleasure on a moderately wet morning or afternoon; let him keep his long, flapping skirts, his shoes and his ankles dry and clean, his feathers and bangs in curl, and his temper unruffled. Then ask him when he gets back to you,— if he lives to do so,— which he would rather be,— a lovely civilized woman or a howling savage,— and see what he will say."

MISS FRANCES E. WILLARD, in some of her late utterances from the lecture platform, very sensibly urges her sister women to forever discard high-heels, long, "wallowing" skirts, as well as the present style of fashionable head-gear, which in her felicitous style she aptly characterizes as being "neuralgia catch-alls behind and platform hide-alls in front."

MR. RUSKIN, in his "Letter to Young Girls," says: "Dress as plainly as your parents will allow you, but in the best materials; that is to say, in those which will wear the longest. When you are really in want of a new dress, buy it, or make it, in the fashion; but never quit an old one merely because it has become unfashionable. And if the fashion be costly, you must not allow it. You may wear broad stripes or narrow, bright colors or dark, short skirts or long (in moderation), as the public wish you; but you must not buy yards of useless stuff to make a knot or a flounce of, nor drag them behind you over the ground. And your walking dresses must never touch the ground at all. I have lost much of the faith I once had in the common sense and even in the personal delicacy of the present race of average English women, by seeing how they will allow their dresses to sweep the streets, if it is the fashion to be scavengers."

THE HOUSE ON SEVENTH STREET.

At first sight, it was not very unlike the houses in which the majority of young people with moderate means set up housekeeping. It was a two-story cottage, tasteful and modern without, and with an interior even more attractive, embodying, as it did, Mrs. Wilford's exquisite taste. Not that the furnishings were particularly luxurious, but the most artistic eye could find no false effects or unfortunate combinations in all its dainty completeness. In short, it was one of those homes which seem to impart to every creature blessed enough to come within their charmed atmosphere, something of their own serene harmony.

But if the house on Seventh street was in no wise remarkable in the city of Weston, the same could not be said of its mistress, Louise Wilford. She was a delicate, sweet-faced woman, whose clear gray eyes had the faculty of spying out a hidden sorrow, and offering their unobtrusive sympathy in one comprehensive glance. Her mother said of her, "Louise always had the most extravagant notions about the duty of everybody to everybody else. If marriage does not cure her, nothing will." And Mrs. Wilford soon made it evident that marriage had not altered a peculiarity which was, indeed, a fundamental characteristic of her nature.

Her honeymoon was hardly over when what her friends called "Louise's oddity" began to assert itself.

"Fred," she remarked placidly one evening, as she and her husband sat together in their cosy parlor, a suggestive picture of domestic comfort, "Fred, do you know, I want to take a boarder."

Mr. Wilford dropped his book, and looked at his wife with an expression of the utmost consternation.

"You know, dear," she resumed, "they say Mr. Maxwell is trying to leave off drinking."

Mr. Wilford nodded. He, with all good citizens of Weston, was interested in the attempted reformation of this brilliant young lawyer, who had come so near total shipwreck. But, with the obtuseness common to mortals, Fred failed to see how this fact was related to his own personal comfort.

"And I have been thinking," Louise went on earnestly, "that he must meet a great deal of temptation, boarding at the hotel. And his wife can't come till September, Fred; he told me so himself. And I'd like to have him here with us that little while."

Mr. Wilford made a wry face. "Of course I admire your feeling, my dear girl; but don't you think it is a little fanatical, and — morbid, to sacrifice your home for other people in that way?"

"O Fred! It's because my home is so dear to me that I want to use it partly for others. You know we are not to sacrifice that which costs us nothing; and I want to offer Him the best I have."

Mr. Wilford gently kissed his wife's cheek. "You are right, Louise; I think you are always right. But I don't see," he added with a smile, "just how you're going to work your scheme on Maxwell. You can't say you want to reform him."

"Oh, I'll manage that," answered Louise confidently. And she did manage it, with a diplomacy strictly feminine. Mr. Maxwell was invited to tea one evening, and, under the enchantment of the social atmosphere, he himself hesitatingly made the proposition his hostess was so anxious to have him make. And if Louise ever thought regretfully of the pleasant evenings she and Fred had passed alone together, she felt more than paid for her sacrifice when, three months after, the lawyer's wife looked her in the face and said, "Mrs. Wilford, I owe you all one woman can owe another. I believe that my husband's safety is due to you." And then the two women, strangers before, kissed and clung to each other as sisters might have done.

The next guest at the house on Seventh street was little Mary McIntyre, whom Louise found in the third story of a tenement house, struggling with a persistence pitiful to see, to finish some heavy sewing. The girl was recovering from a fever, and the lassitude of sickness was still upon her. She made a pathetic picture with her pale face and languid eyes, bending over the work her strengthless hands could hardly hold

Mrs. Wilford looked at her gravely. "My child, you are not well enough to be at work," she said, laying her gloved hand upon the trembling fingers.

Mary answered this remonstrance with a wan smile. "But, you see, I must live, ma'am," she said simply.

"Certainly! and that is why you must n't work at present," answered Mrs. Wilford. She took the girl's unresisting hand in her own. "I want you to come home with me," she said, "and make me a visit until you are better."

Just what that visit meant in Mary Mc Intyre's life, even Mrs. Wilford never knew. The girl's starved nature drank in the beauty about her as a flower drinks in the dew and sunshine. Her soul and body alike gathered strength in this new atmosphere of kindness and tranquillity. For months it had seemed to the child that she was too busy, or else too tired, to pray. But now on her knees she begged God to give her an opportunity of doing something for this new friend. Modern cynicism to the contrary, gratitude is a flower that takes root as strongly as ever in the human heart, and blossoms as beautifully, if only the right seed be sown.

Once, indeed, Weston was aroused when it was rumored that a fallen woman, who wished to escape from her evil life, had for several days been sheltered at Mrs. Wilford's home. People said indignantly that really Mrs. Wilford carried things to excess, and asked what would become of the safeguards of society if every one followed her example. But before the calm candor of Louise Wilford's gray eyes, and in the presence of her womanly dignity, even ill-natured gossip was fain to lay its finger on its lips. And after a time Weston came to think and to say indulgently that Mrs. Wilford was really different from other people, and could do what no one else would think of doing.

The full history of the house on Seventh street has never been written. No record has been kept of the tempted boys who have found at Mrs. Wilford's an attraction that was a safeguard to their unwary feet; of the homesick girls who have there forgotten their loneliness; of the heavy hearts its beauty has cheered; of the lives its influence has made better. But the house on Seventh street, like a city of old, is walled about by the prayers that rise in behalf of it, daily, from many grateful hearts.—*Sel.*

Spare a Day for the Children.—Among the myriad pressing social duties, as well as those of church and charitable work often undertaken by wealthy and popular women, there is great danger of starving the home life of the children. The resolve of one woman when she grew to realize this, is worthy of imitation by all mothers similarly situated. How it came about she tells in this way:—

"One day my little daughter Constance, who is twelve years old, came into my room as I was hurriedly dressing to drive to a directors' meeting of one of the several charities in which I am interested. Her birthday had been the day before, and she had a game, one of her presents, in her hand. 'O mamma,' she cried, full of eagerness, 'this is the loveliest game! do try it with me.'

"Her request, in my haste and absorption, seemed in the highest degree trivial. 'Nonsense, Connie, you know I cannot,' I replied, sharply; 'this is board day at the hospital, and I am already shockingly late.'

"I was standing in front of the mirror, and I saw in the glass how her face fell, and the light died out of it. 'I wish,' she said wistfully, 'you would sometimes have a day for me, mamma.' The child's speech went through me like a knife. I had never received so stinging a rebuke. Was it possible that in pursuit of other duties I was neglecting the one which should be chief? My drive to the hospital that morning was full of serious introspection, and Connie has had one of the days out of each week, ever since."

The Martyrdom of Vice.—The martyrs to vice far exceed the martyrs to virtue, both in endurance and numbers. So blinded are we by our passions that we suffer more to insure perdition than salvation. Religion does not forbid the rational enjoyments of life as sternly as avarice forbids them. She does not require such sacrifices of ease or ambition, or such renunciations of quiet, as pride. She does not murder sleep, like dissipation; or health, like intemperance; or scatter wealth, like extravagance or gambling. She does not embitter life like discord, or shorten it, like duelling; or harrow it, like revenge. She does not impose more vigilance than suspicion, more anxiety than selfishness, or half as many mortifications as vanity.—*Hannah More.*

Do the editors of the daily and weekly press ever feel that they are responsible for a certain portion of the prevalent vice and crime? Newspapers are an immense power for good or evil, according as they are directed by those of high or low purpose.

PATENT MEDICINES IN AMERICA.

Dr. John S. Billings, librarian at the Army Medical Museum, Washington, D. C., has recently prepared an interesting paper on the subject of patent and proprietary medicines in America, in which he gives some interesting statistics respecting the patent-medicine business, and other allied forms of quackery. We quote the following abstract of Dr. Billings's paper from the *Bulletin of Pharmacy* : —

"From a report made by the Commissioners of Patents in 1849, it appears that eighty-six patents for medicines had been granted up to that date. The greater number of patents for medicines were granted between 1850 and 1860, and from 1880 to 1890 the number of patents granted for medicines was 540. This, however, applies only to 'patent medicines,' properly so-called, the claims for which are presented by simple-minded men who know little of the ways of the world. By far the greater number of the owners of panaceas and nostrums are too shrewd to publish their secrets in the manner required for obtaining a patent, since they can attain their purpose much better under the law for registering trade-marks and labels, designs for bottles and packages, and copyrights of printed matter, which are less costly and do not reveal the *arcanum*. It is these proprietary medicines that constitute the great bulk of what the public call 'patent medicines.' The trade in these articles has been, and still is, an important one. The Americans are a pill-and-bitters-taking people, and the demand for such medicines is general. Dr. Billings believes that the chief consumption of them is by women and children, with a fair allowance of clergymen, to judge from the printed testimonials; but so far as he knows, only one complete system of medicine has been really patented in the United States; viz., the steam, cayenne-pepper, and lobelia system known as Thomsonianism, for which a patent was granted in 1836. The right to practice that system was sold by the patentee, with a book describing the method, for $20, and the preparations used were known as composition powder and 'number six,' the latter of which was essentially a concentrated tincture of cayenne-pepper.

"According to the census of 1880, there were in the United States 592 establishments devoted to the manufacture of drugs and chemicals, with an invested capital of $28,598,458, and the annual value of their products was $38,173,658, while there were 563 establishments devoted to the manufacture of 'patent medicines,' their invested capital being $10,620,880, and the annual value of their products $14,682,494. These data will suffice to show the extent to which the American system of copious advertising has the effect of inducing people to believe in and pay for secret medicinal preparations that are generally sold at a price nearly ten times as great as their cost. For the further promotion of their sale, an automatic doctor has been proposed upon the principle of 'put a quarter dollar in the slot, and take out the pill which suits your case.'

"Dr. Billings regrets that he has been unable to obtain definite information as to any direct benefits which inventions of this kind have conferred upon the public in the way of curing disease or preventing death. He can only say that he knows of but *four* secret remedies that have been really valuable additions to the resources of practical medicine. The composition of these is now known, and they are all powerful and dangerous remedies, that should be used only on the advice of a skilled physician. Most of the other remedies of the kind are described as having little value as curative agents, and some of them are prepared and purchased almost exclusively for immoral or criminal purposes.".

ABOUT THE ELECTROPOISE.

MR. K. F. BROWN, of Baltimore, writes as follows under date of September 12 : —

"DR. J. H. KELLOGG : —

"I have read with great pleasure your monthly exposures of quack nostrums and medical frauds in GOOD HEALTH, and in the September number, I note with interest your remarks on the electropoise, and am pleased that you will take it in hand and have it thoroughly investigated. I take the more interest in this especial device from the fact that I recently became acquainted with its inventor, and found him to be, to all appearances, a man of high attainments and thoroughly sincere and honest in his claims, and not in the slightest way related to even the most refined and accomplished charlatan.

"The electropoise, which is being sold throughout the South and elsewhere, is *not* the instrument made by the inventor, and I am satisfied by actual investigation that the company who are selling this imitation article, or at least those members of it with whom I have come in contact, are not only ignorant of anatomy and the laws of physiology and hygiene, but know nothing whatever of the underlying principles of the electropoise, and are charlatans of the worst type.

"Dr. Hercules Sanche, the discoverer of this means of cure (if it be a means), is, I am sure, a scholar and a gentleman, and thoroughly imbued with the idea of the correctness of his method. I suppose you are fully aware of his claims, which in brief are that by means of this little instrument oxygen is induced into the system through the skin, the vital force being thereby greatly increased, and the disease or abnormal process arrested, and health restored in nature's own way.

"Now whether this be a fact, or whatever the merits or demerits of this system are, will doubtless be brought out by your investigation (provided you get hold of the orginal), but one thing seems certain ; viz., that the electropoise when properly applied *does* produce an effect on the body ; but whether benign or otherwise, my experience with it does not yet warrant an opinion."

We have never had the pleasure of meeting Mr. Sanche, but have had under treatment a number of very intelligent gentlemen who had met him and purchased instruments from him. The impression received by these gentlemen was the same as that indicated in the above letter, and it was this impression which led them to place confidence in the electropoise. Nevertheless, when they submitted the article to careful test, they were thoroughly convinced that the inventor, if honest, was certainly deceived. The samples of the electropoise which we have in our possession were made by Mr. Sanche himself, or under his supervision. At any rate they were obtained directly from him, and consequently cannot be considered as worthless imitations. The claims made by Mr. Sanche are so preposterous, and so utterly at variance with known physical laws, and at the same time so wholly unsupported by actual facts, that it seems not unkind to suppose that the inventor of the electropoise is a man of unsound mind, who has succeeded in turning to good account his unfortunate mental condition as a means of enriching his pocket.

We have recently encountered a number of persons from the South who have been imposed upon by the electropoise, and we understand that the instrument is being sold very widely in all parts of the country. The description of the article which we have given, the inventor and manufacturers have doubtless seen, and ought to be prepared to say whether or not it is correct. The committee appointed at a public meeting of the Sanitarium patients to investigate this matter, have been making very careful and scientific experiments with the instrument, having employed an electrician to assist them, and a report as to its merits will doubtless soon be forthcoming.

A WICKED ADULTERATION. — There is no form of food adulteration which may be more properly denominated as absolutely unscrupulous and fiendish than the adulteration of milk. Cow's milk constitutes the sole food of infants in many instances, and the chief diet of thousands of children and invalids. Its adulteration with useless or poisonous substances must be regarded as a most despicable fraud. The following *exposé* of one of the most recent attempts of this sort of adulteration was recently published by the secretary of the State Board of Health of Michigan, to whose vigilance in looking after matters pertaining to the public health, the people of Michigan owe a greater debt than most of them are aware of. Our space is so crowded this month that we are not able to publish the report of an investigation recently made of this adulteration. It will appear next month.

GOOD HEALTH
J. H. KELLOGG, M. D. EDITOR.
BATTLE CREEK, MICHIGAN.

CARDIAC ECCENTRICITIES.

To a person who has never made a careful study of the subject, the peculiarities which are recognized by scientific physicians, particularly by specialists in diseases of the heart, must appear almost incredibly remarkable. Most people are familiar with such variations from the normal mode of action as are indicated by an irregular pulse, as intermittency, or dropping a beat now and then, or palpitation, or excessively strong and rapid action of the heart. But few, even among physicians, are fully acquainted with the varieties of irregularity exhibited by the heart, which are recognized by the skilled specialist.

One of the forms of disturbed heart rhythm least commonly known is extreme infrequency, resulting most commonly from fatty degeneration of the heart, malarial poisoning, jaundice, and brain injuries. The pulse rate is sometimes diminished as the result of the causes named, to thirty or forty beats a minute, about half its usual rate. Simple slowness of the pulse is, however, not always to be regarded as necessarily a matter of great gravity.

A more serious indication is intermittency, or that form of irregularity in which the heart seems to drop a beat now and then, either regularly or irregularly. The most common causes of this form of disturbances are the use of tobacco or tea and coffee, loss of sleep, night work, overwork, grief, anxiety, and various forms of mental shock. Intermittency is very frequent as the result of dyspepsia, especially when the patient is lying down. This form of heart irregularity, when accompanying a very strong pulse or violent heart action, is a very serious symptom, as it indicates disease of the valves of the heart. It is also a very serious symptom when it comes on suddenly, after violent exertion, indicating possible damage to a heart valve, due to unusual strain brought upon the heart. What is technically known as *irregularity*, in which the heart beats at an uneven rate, and with considerable force, is most frequently due to dyspepsia, the use of tea, coffee, or tobacco, and violent emotions. These symptoms also associate with disease of the walls or valves of the heart. Palpitation, or very great frequency of the beat of the heart, is most frequently the result of dyspepsia; accumulation of gas in the stomach, causing pressure upon the heart, is the most common form. If the force of pressure is constantly present, it is frequently the cause of a serious nervous disorder known as Grave's disease. Displacement of the kidney, a frequent result of tight-lacing, or the wearing of heavy skirts, is a frequent cause of paroxysms of palpitation. Palpitation is by no means always an indication of disease of the heart itself, but sometimes accompanies organic disease of the heart.

Arterial palpitation, although not exactly a heart disturbance, is of kindred nature, and so little understood that it is well worth mentioning. The most frequent form of this disorder is palpitation of the aorta, which is most commonly felt as a beating just below the lower end of the sternum. The throbbing in the temples experienced in certain forms of headache is of a similar nature, and in a few instances cases have been observed in which there was also a pulsation of the veins of the hands and forearms, due to the pulse wave traveling through the capillaries, and appearing in the veins.

These functional disturbances of the heart and vessels, while not usually indicating any immediate danger or serious disorder existing in the heart and vessels, are doubtless not infrequently the premomitory signs of grave disorders of various sorts, which, when fully established, are incurable in character, such as fatty degeneration and calcareous changes, which predispose to apoplexy and its dire consequences. By judicious treatment, these changes may be prevented, or perhaps recovered from, if the case is taken in

hand at a sufficiently early period; hence the importance of recognizing early symptoms, and submitting the patient to such a course of treatment and regimen as his case may require.

"Paroxysmal hurry" of the heart is a form of functional derangement more seriously significant. It most frequently occurs in persons who have suffered from rheumatic fever, or some grave specific disease. The vascular excitement in these cases is excessive. The writer obtained a sphygmographic tracing in a case of this sort some years ago, in which the heart beat more than three hundred times per minute. Cases are sometimes observed in which there is a curious want of synchronism, or coincidence of rhythm, in the two sides of the heart. Cases have been observed in which, while the right side of the heart acts regularly, the left side of the heart makes every other beat, and a still more curious observation has been made, in which it was found that the two ventricles acted in alternation. These curious variations in heart rhythm are doubtless due to some disturbance originating in the nervous system.

NEW FACTS ABOUT DIPHTHERIA.

RECENT studies of diphtheria show that there are either two distinct diseases commonly known by this name, or two distinct varieties, one of which has been termed diphtheria, and the other pseudo-diphtheria. A membrane occurs in both forms of the disease, but in one form the attack is likely to be followed by paralysis, albuminaria, and other grave symptoms, which are present either during the disease or after the subsidence of the acute symptoms. Pseudo-diphtheria rarely has a fatal termination, while the graver form of the disease is frequently fatal. Pseudo-diphtheria most frequently occurs in connection with scarlet fever and the measles.

Genuine diphtheria has been found to be due to a specific microbe, whereas pseudo-diphtheria presents no such characteristic.

Lawrence and others have made observations and experiments which show that cats are subject to a form of diphtheria practically identical with that suffered by human beings, and it seems to be very certain that cats are not infrequently the means of communicating disease from one family to another. In one case, "A little boy had fatal diphtheria, and vomited on the first day of his illness. A cat licked the vomited matter from the floor, and soon after the boy's death it was noticed to be ill, and its suffering and symptoms so closely resembled those of the dead boy that it was destroyed by the owner. During the first part of its sickness the cat was allowed to go out in the back yard, and a few days subsequently the cat of a near neighbor was observed to be ill. This cat had also frequented the back yard. The second cat was nursed during its sickness by three little girls, all of whom took diphtheria."

In another case, "Three kittens were allowed to remain with five children sick with diphtheria. The kittens sickened and died, and a *post mortem* examination revealed the presence of diphtheritic pseudo-membrane in their throats."

It is found that birds are also subject to diphtheria, and there is reason for suspicion that the disease is sometimes communicated to human beings from this source.

That diphtheria is sometimes communicated by milk has also been quite thoroughly established. In an outbreak of diphtheria which was traced to the milk supply, it was found that "the cows furnishing the milk drank water which contained sewage from a neighboring farm. The investigation showed that the milk, when boiled, was harmless, since the boiling destroyed the germs, but when used unboiled, the disease was communicated. The cows were removed to another pasturage, where the water supply was different, and the epidemic ceased. It was believed by those who investigated these cases that the germs which caused the disease passed from the stomach of the cow into the system, and were excreted in the milk."

It is not probable that the germs were transmitted in the manner suggested, since it has been proved that the germs of this disease are not capable of invading the tissues. In patients who die from diphtheria, the fatal result is occasioned by the absorption in the circulation of the virulent poison produced by the germs.

In the case last cited, we think it probable that the germs found entrance to the milk through the excreta of the cows. The germs having been propagated in the alimentary canal, they were expelled, and afterwards found their way into the milk by means of the fragments of excreta which fall from the body of the cow in the process of milking. We hav long held the opinion that typhoid fever is propagated in this way, and see no reason why the same principle may not apply to diphtheria, and perhaps also to a number of other contagious maladies.

The great vitality of diphtheria germs is well illustrated by the following facts: —

"A girl, in a locality where here was no diphtheria, examined the clothes worn by her mother, who had died of this disease two years previously, the clothes having been in a chest during this time. After about the usual incubative period, she was attacked with diphtheria. A brush used for swabbing the throat of a child having diphtheria was wrapped in paper and laid aside. Four years subsequently, a man having simple sore throat made an application to it with the brush, and his fauces soon after became the seat of a diphtheritic exudate. A severe and fatal epidemic of diphtheria occurred in a Norman village. Twenty-three years had elapsed, and no recent case of diphtheria had occurred in or near the place, when excavations were made in the graveyard, and the bodies of those who had died of diphtheria, nearly a quarter of a century previous, were disturbed. The son of the grave-digger, who had collected the bones of the victims of diphtheria, and had piled them together, was immediately afterward attacked with this disease. He was the first patient in the epidemic which followed."

THE GERMAN MUMPS.—Borbes recently reported the discovery, in the blood of a patient suffering from mumps, of a peculiar bacillus, or microbe, which he claims to be the cause of this well-known contagious malady.

OFFICIAL INCONSISTENCY.—Dr. Echo, in the *Journal D'Hygiene*, calls attention to a patent inconsistency which exists in his country, which, nevertheless, we should be happy to recognize in our own land. In France the manufacture and sale of tobacco is under the control of the government, nevertheless, the Inspector-General of Public Instruction seems to have presided at the last general term of the *Société contre l'abus du Tabac* (Anti-Tobacco Society). The critic well says that if there is crime and danger in tobacco, one may say it is the State and even the law which makes crime and which prepares the danger, since the culture, fabrication, and the commerce in this perverse plant are regulated by law and supervised by the agents of the public treasury.

TRANSMISSION OF SCARLET FEVER.—In an outbreak of scarlet fever which recently occurred in New York, all the cases which occurred, some twenty-four in number, were traced to the use of milk from a single dairy. Investigation showed that the probable cause of infection was the washing and wiping of the milk cans with white flannel cloths taken from a quantity of rags left in the barn by a rag peddler. Cases have frequently been reported in which scarlet fever and other contagious diseases have been propagated by ragmen.

The incubation period of scarlet fever has recently been found to be much shorter than was formerly supposed. In one instance, the period of incubation was shown to be not more than sixteen hours, although the usual time which elapses after exposure, before the first symptom of the disease, is forty-seven hours. A case was recently reported in which scarlet fever, measles, and diphtheria occurred simultaneously in a single patient, each disease making its appearance before the disappearance of the preceding. Measles frequently occurs in connection with scarlet fever, and diphtheria not infrequently makes its appearance in connection with measles or scarlet fever; but the occurrence of the three maladies simultaneously in the same patient is certainly a very extraordinary instance.

PEPSIN.—The amount of pepsin swallowed by dyspeptics in the United States alone, if carefully estimated, would doubtless be found to amount to some tons. The increasing debility of the American stomach gives rise to an enormous demand for artificial digestive agents, which are swallowed with avidity by scores of thousands, in the hope that thereby the flagging energies of the stomach may be recuperated, so as to permit a continuation of the dietetic abuses by which the gastric forces have been exhausted. Recent researches upon the subject, have shown, however, that pepsin is really of little or no account as a remedy in these cases. The stomach always contains a sufficient amount of pepsin. The thing lacking is organic acid, commonly supposed to be hydrochloric acid, which Lenhartz found to be diminished in quantity in nearly fifty per cent of three hundred and ninety patients suffering from dyspepsia, whose gastric juice he carefully examined.

One of the most important functions of hydrochloric acid is to destroy the germs which enter the stomach with the food. It has been found that the germs of typhoid fever, cholera, and tetanus die in less than half an hour, when introduced into a healthy stomach with food; but in a stomach in which the amount of hydrochloric acid is deficient, which is the case in the majority of persons suffering from dilatation of the stomach, these germs and others producing microbes, live and flourish, and give rise to a great share of the well-known symptoms accompanying indigestion and dyspepsia.

A WEAK ARGUMENT.

In a recent article in the *Sanitary Inspector*, entitled "Fallacies of Vegetarianism," Dr. C. R. Drysdale offers the following "Anatomical Argument" against vegetarianism. As this is the only argument offered by Dr. Drysdale, and as his article is quite lengthy, we conclude that it is the only one he has to offer. Here it is: —

"Vegetarians are wont to allege that the position of man in the animal kingdom makes it probable that he was intended to live solely on vegetable diet. And this seems to have been the opinion of Cuvier. But if we examine the intestinal canal of man and of the *herbivora* and *carnivora*, we find that the canal is of enormous extent in most herbivorous animals, being in the sheep about twenty-eight times the length of the body. In the purely carnivorous animals, on the other hand, it is comparatively short, being in the lion only about three times the length of the body. In man it is only about six times the length of the body. It would, therefore, appear that the digestive organs of civilized man are suited to a mixed diet. While again, in the *herbivora*, the digestive organs constitute from fifteen to twenty per cent of the weight of the body, and in the *carnivora* from five to six per cent, the intestines of man constitute only from seven to eight per cent of the weight of the body."

The points in this argument are two. First, the alimentary canal is, in herbivorous animals, twenty-eight times the length of the body; in carnivorous animals, three times the length of the body. In man it is only about six times the length of the body, consequently man is part carnivorous and part herbivorous, and much more closely allied to the carnivorous than to the herbivorous class.

The second argument is that the weight of the digestive organs in man, when compared with the weight of the entire body, agrees more nearly with the *carnivora* than the *herbivora*. Granting the accuracy of any *data* given, the argument is absolutely worthless, since Dr. Drysdale wholly ignores the important fact so constantly pointed out by vegetarians, that man is not an herbivorous animal, but belongs to a frugivorous class. Herbivorous animals subsist upon very coarse food, which has great bulk with a small proportion of nutriment; consequently they require a very extensive and complicated digestive apparatus to enable them to extract the small amount of nutriment contained in the grass and coarse herbs upon which they feed. The diet of carnivorous animals is much more concentrated; consequently their digestive apparatus is simpler in character, and the alimentary canal smaller in extent. In the *frugivora*, represented by the ape, the animal most closely allied to man in his anatomical and physiological characters, we have a class of animals, very discreetly ignored by Dr. Drysdale, whose food consists of substances much more concentrated in character, such as nuts, fruits, soft grains, etc. As the result, we find the alimentary canal of these animals comparatively proportioned to the diet upon which they are by nature intended to subsist. The length of the alimentary canal in the anthropoid apes is twelve times the length of the body. These animals are frugivorous. We should expect, then, in the case of man, to find the alimentary canal corresponding in length to that of the ape, but according to Dr. Drysdale, the alimentary canal in man is six times the length of the body, or only one half that of the ape.

Let us examine as to the correctness of Dr. Drysdale's *data*. The alimentary canal in man is stated by the anatomist to be thirty feet in length, the average height is between five and six feet. Taking the minimum figure, which is less than the average height of the human race, we have thirty divided by five, which equals six. This would seem to confirm Dr. Drysdale's statement, but unfortunately we have made a grave oversight. In measuring the length of the lion, the ape, and the sheep, we have measured from the end of the nose to the end of the backbone; in measuring man, we have taken his total height, which includes the length of his legs. In order to put the figures on the same basis for man as for the lion and the sheep, we must put man on "all fours" to measure him, or at any rate, we must exclude the length of his legs. To include the legs in the case of man would be just as sensible as to add the length of the hind legs to the length of the trunk in the measurement of the sheep or the lion. The legs, as is well known, are, on the average, exactly one half the length of the body, so we must multiply our result by two. In other words, we find the porportion of the length of the body to the length of the alimentary canal to be twice six, or twelve; exactly that which we find in the anthropoid ape. It is evident, then, that Dr. Drysdale's "Anatomical Argument" proves precisely the contrary of what he intended it to prove, and since in bringing this argument forward, he has admitted its validity, he has evidently stultified himself, and proved the very contrary of the proposition which he desires to sustain.

NEW FACTS ABOUT STERILIZED MILK.— For some months we have conducted experiments with sterilized milk for the purpose of determining some means by which milk can be perfectly sterilized without the use of expensive or cumbersome apparatus. As explained in a recent number, we have found that boiling milk in well-stopped bottles, placed in a saturated solution of salt, will raise the temperature of the milk to about 230°, a temperature sufficient to destroy all germs, as proved by the fact that milk thus sterilized will keep for any length of time without spoiling. We have to-day eaten milk that has been kept for six weeks, and is still perfectly fresh, and would doubtless keep an indefinite length of time.

Another fact we have observed, which is the one to which we wish now to call attention, is, that milk sterilized in this way, being heated under pressure, and without exposure to air, seems not to have undergone the changes easily recognized in milk boiled in the ordinary way. The scum which rises to the surface of boiled milk is formed of coagulated albumen or lacto albumen, which is said to be thus rendered indigestible, and to have a tendency to produce inactivity of the bowels. When the milk is boiled under pressure, no surface scum is formed, from which we conclude that although the milk is subjected to a higher temperature, the fact of non-exposure to the atmosphere in some way modifies the changes which take place, and in a manner which renders the milk more wholesome.

Another fact we have observed; namely, that milk sterilized in the manner described is almost entirely free from the ordinary flavor of scalded milk, and has the sweet and palatable taste of fresh milk.

In sterilizing milk, the bottles may be boiled in an ordinary kettle without breaking, by wrapping them with a cloth so as to prevent the glass from coming in direct contact with the bottom of the kettle. It must be remembered that the bottles should be left in the salt solution until cooled.

VEGETARIAN DIET VERSUS GASTRIC ULCER. — Von Sohlern has been investigating the frequency of ulceration of the stomach, in Russia and Bavaria, and finds it is exceedingly uncommon in these countries. There is only one condition of life which is common to these people, as the climates of the countries in which they live, their occupation and their character are very different, and this is found in the fact that they subsist almost exclusively upon vegetable foods. It has also been observed that grass-eating domestic animals rarely have ulceration of the stomach, from which he concludes that the use of flesh food is conclusively productive of ulceration of the stomach. This, we presume, is due to the fact that the use of flesh foods occasions much greater labor for the stomach than the use of vegetable foods, and also subjects the stomach to the irritating action of the gastric juice to a greater degree and for a greater length of time.

CAPACITY OF THE STOMACH.— M. Le Gendre has shown by the *post mortem* examination and careful measurement of sixty stomachs, taken without selection, that the average capacity of the stomach is about two and one half pints. In twelve cases of dilatation of the stomach, made by examination before death, the measurement of the stomach was found to be from three to seven pints.

When full, the lower border of a healthy stomach should fall at a line about halfway between the lower end of the sternum and the umbilicus. In dyspeptics, the lower border of the stomach is commonly found as low as the umbilicus, and sometimes several inches lower. We have in several instances, observed cases in which the lower border of the stomach approached the pubis.

DR. KLEIN'S DISCOVERIES RESPECTING DIPHTHERIA.

For some time past, Dr. Klein, the eminent English bacteriologist, has been making extensive researches respecting the cause of diphtheria. Some of these results are thus stated by our English contemporary, *Health* : —

"In diphtheria, regarded as an actual disease, Dr. Klein's difficulties began with the discovery that he had to deal not with one germ, but with many ; a case paralleled somewhat by that of scarlet fever itself. Yet he has now succeeded in isolating one rod-shaped microbe, or bacillus, which is constantly present in every membrane which forms as a characteristic feature of diphtheria. Furthermore, this special germ can now be identified and labelled, as it were, for due recognition by bacteriologists. There is present in diphtheria a second germ, formerly confused with the first-named microbe, but experiment has shown that the one germ grows at a temperature at which the other refuses to multiply ; while, when milk is used as the fluid in which the germs are cultivated, the one form exhibits special and noteworthy differences from the other. The gist of this research is of a highly important character in reference to public health.

"Milk, as is well known, is undoubtedly the medium through which diphtheria germs are usually conveyed to mankind. Now, Dr. Klein has proved that the second germ above noted, if sown in milk at the ordinary temperature, does not multiply at all ; whereas, if the first germ (that Dr. Klein considers to be the true diphtheria bacillus) be placed in milk, it grows rapidly, and appears to thrive well in that fluid. This point, we repeat, is of great public importance ; for it proves that the suspicion which attaches to milk as a medium for diphtheritic infection is well founded ; and the lesson is one which should not be thrown away, either upon medical officers of health, or upon dairymen themselves. Curiously enough, and fortunately also, the true diphtheria germ is one of those forms which do not multiply by means of spores.

"These latter correspond, in a way, to the seeds of germs, and are produced within ordinary microbes with great rapidity. The spores of germs are infinitely more difficult to destroy than the adult microbes, so that disinfection as regards germs liable to produce spores must always be a matter of greater care and precision than in the case of sporeless micobes. Dr. Klein finds that an exposure of the diphtheria germ to a temperature of 60° centigrade (140° F.) for five minutes, suffices to destroy it. In plain language, if milk be boiled before use, we escape risk of diphtheria infection ; and this is only a confirmation of a piece of advice which medical men have for years been giving to the public as a means of preventing more diseases than diphtheria itself. It is an unfortunate thing for humanity that the sporeless germ can flourish in milk at a low or ordinary temperature ; but we have at least a counterbalancing feature in our favor in respect of the immunity we may enjoy from infection by boiling the milk we consume."

A Strange Remedy. — A German physician, who has been experimenting upon himself, recommends sauer-kraut as the best remedy for nervous dyspepsia. One can hardly imagine how so nauseous and indigestible an article could be beneficial to a disordered stomach under any circumstances, unless it be upon the principle which one bacteriologist has suggested as being available as a method of combating disease ; namely, that one set, or class, of germs may be destroyed or driven away by another set. The symptoms of nervous dyspepsia are well known to be due to the development of microbes in the stomach, and to the poisons formed thereby. It is quite possible that the germs of sauer-kraut are so much more virulent, or active, in character, that they are able to subdue and oust from their preëmpted territory the mischief-making germs which are present in this form of stomach disease.

Jaundice. — Recent studies of this disease show that it is sometimes contagious, or, at any rate, that there is a form of contagious or infectious jaundice which apparently attacks several persons almost simultaneously, and spreads with considerable rapidity.

Incontinence of Urine in Children. — An excellent remedy for this very unpleasant affection is sponging of the spine with hot water, or alternate sponging with hot and cold water. The remedy should be applied just before going to bed. In bad cases, the child should be wakened once in the middle of the night, and the sponging renewed for ten or fifteen minutes. The child should sleep upon a rubber or hair pillow instead of a feather pillow, and should lie upon a hard hair or cotton mattress instead of a feather bed.

THE PREVENTION OF BLINDNESS. — It is a lamentable fact that the great majority of all cases of blindness is due to neglect. This fact has been recognized by the legislatures of two States, those of Maine and New York. The following is a copy of an act recently passed by the legislature of Maine, and made a law by the signature of the governor, a similar act having been passed last year by the legislature of New York: —

"SECTION 1. Should one or both eyes of an infant become reddened or inflamed at any time within four weeks after its birth, it shall be the duty of the midwife, nurse, or person having charge of said infant, to report the condition of the eyes at once to some legally qualified practitioner of medicine of the city, town, or district in which the parents of the child reside.

"SECTION 2. Any failure to comply with the provision of this act shall be punishable by a fine not to exceed one hundred dollars, or imprisonment not to exceed six months, or both.

"SECTION 3. This act shall take effect on the first day of June, eighteen hundred and ninety-one."

Statistics show that from twenty to thirty per cent of all cases of blindness are due to neglect of proper treatment of the eyes in new-born infants. By the employment of proper treatment after the birth of an infant, this may be prevented and the sight of hundreds saved. The efficiency of preventive treatment is shown by the fact that after Credé had devised his method of preventing this malady, he had, according to *Science*, "only two cases in 1,600 infants, whereas, before he practiced his method, he had 10.8 per cent of the infants affected with it, which in this instance would be equal to 160 infants, some of whom would become blind in spite of the best treatment then known. By Credé's method of prophylaxis and treatment for this disease, no infant need become blind. This means the prevention of an enormous amount of misery and the saving of an enormous amount of productive energy in the United States, estimated at not less than $7,500,000 each year. This enormous loss of wealth to the United States is due to the ravages of a disease as surely preventable as any in medicine. Dr. Burnett of Washington, estimates that the disease costs the country more in ten years than all the epidemics of yellow fever and cholera for the past hundred years.

"To itemize this account, we find that the cost of keeping a single blind person in our best-managed institutions is $132 a year. This makes the cost of sustenance of our blind from this one disease alone about $2,000,000. If we add to this sum what these blind persons would produce if they were not dependents, and reckon their productive wealth at $1 per day on an average, we have the enormous sum of $7,500,000. Maine having about one-fiftieth of the blind of the United States, shares about one-fiftieth of the misery and loss of productive energy from this disease, which equals $150,000, according to this estimate."

TO RELIEVE PAIN IN THE EAR. — One of the best remedies is a one-per-cent solution of atropine. Saturate a piece of absorbent cotton with the solution, and pack it into the ear. Atropine is much more efficient than cocaine for application in this way. Painting the surface of the skin behind the ear with a preparation consisting of equal parts of camphor and chloral will often give great relief. Small boils in the canal of the ear should be opened early. The atropine solution may be applied afterwards. When the inflammation about the ear is general, not being confined to a single spot, hot water is the best remedy. A stream of hot water should be allowed to flow into and about the ear, at a temperature as high as can be borne, the application being continued fifteen or twenty minutes every hour or two, or even longer and more frequently if necessary. It is wise in many cases to place a little cotton deep in the canal of the ear, to prevent the water from entering when the inflammation is confined to the outer portions of the ear.

STARCH AS AN INFANT DIET. — The fact that the so-called infant foods are chiefly composed of starch, renders the following observation of very great importance and significance: Gillet recently reported a careful study of the digestive powers of the pancreas in infants, which indicates that the digestive fluid produced by the pancreatic juice, although, in adults, very active in the transformation of starch into glucose, in young infants, acts scarcely at all in this manner. The pancreatic juice does not become active in the conversion of starch into sugar until the teeth make their appearance, so that starchy foods may be masticated. The saliva becomes active in the conversion of starch, at about the same time. The impropriety of feeding young infants largely upon starchy foods before the occurrence of dentition, is thus apparent. Doubtless thousands of infants have been starved by the attempts of mothers to nourish them by such food as arrow-root gruel, and similar preparations. Thin barley or oatmeal gruel will sometimes be advantageously used as an addition to milk in the feeding of young infants, but are improper for exclusive diet.

ANSWERS TO CORRESPONDENTS.

PAIN IN BACK OF HEAD — STIFF NECK — INDIGESTION, ETC. — This correspondent is a young man twenty years old, and of exceedingly nervous temperament. Has no bad habits except use of tobacco, which he uses in moderation. General health is not good. Suffers greatly from indigestion. For the past two years has been troubled with a pain in the back of head, just above the neck. Used always to be troubled with stiff neck; every time he took cold it settled there, but lately it has settled in the head. Also suffers frequently from neuralgia in face, caused by decayed teeth. He would be grateful for any advice as to treatment.

Ans. — First of all discard tobacco. There is no such thing as using tobacco "in moderation." It is a poison in small doses. Your symptoms clearly indicate chronic poisoning, in part the result of tobacco-using probably, and partly the result of indigestion. Our advice in such a case can only be general in character. We say, Stop the use of tobacco at once. If there is indigestion, find out what foods are indigestible and discard them. Probably, there should be more exercise in the open air, and more attention to baths and habits of life in general.

GELATINE. — Mrs. S. A. F., Minn., asks, "1. Of what is gelatine made? 2. What is its use?"

Ans. — 1. Gelatine is made from the bones and hoofs of animals. 2. It is used in the arts of making glue, various cements, sizings, etc. A very fine form of gelatine is sometimes used in cookery, but considered from a dietetic standpoint, it is of doubtful value.

SMOKING AND HEART DISEASE. — J. W., Nebraska, a new subscriber, has been troubled for years with palpitation, shortness of breath, continued pain just below heart, nervousness, and double vision — all of which his physician informs him are undoubted proofs of heart disease, and advises him to retain the habit of smoking; for should he break off, the physician says, he would be liable to drop dead at any time. J. W. asks, "Can it be true that it would jeopardize my life to stop the use of tobacco?"

Ans. — We should say emphatically, No, as tobacco is a heart sedative and depressant, and its disuse could in no way affect the heart injuriously. If the patient would be in danger of sudden death after discontinuing the use of tobacco, he is in still greater danger while continuing its use.

CHRONIC DISEASE OF THE STOMACH. — Mrs. F. S. Mc G., Iowa, writes in reference to a trouble of the stomach, which comes on at irregular intervals. Symptoms are a "goneness," difficult breathing, pain in region of heart, eructations, pain in back, and pressure on upper chest — all worse just before meal-time. Will often be taken in the night with severe cramping pains in region of stomach. An attack, combining all of these symptoms, will sometimes last for weeks. Has catarrh with constant dropping of mucus in throat, and is habitually constipated. Eats meat once a day. Would like to know what the disease is, and its cause, and would be grateful for any advice as to treatment.

Ans. — The patient is suffering from chronic dyspepsia, and probably has occasional attacks of subacute gastritis. The cause does not appear from the brief history of the case given. The patient ought to be placed under the care of an experienced and wise physician. The case is one not likely to be relieved by simple measures, such as it would be prudent to recommend without a further knowledge of the case.

TENDER SCALP — FALLING OF HAIR — BLACKHEADS, ETC. — Miss M. P., Colo., wishes to know: "1. What treatment is good for a sore and tender scalp, where the hair falls out badly? 2. What is the best remedy for blackheads? 3. What would you recommend for tan and sunburn? 4. Is catarrh always curable?" This correspondent has an attack of sick-headache nearly every day. She asks, "5. Would you think catarrh to be the cause? Please give advice."

Ans. — 1. Shampoo the scalp with good Castile soap and soft water three times a week, and after thoroughly removing all crusts, apply the following ointment: Zinc ointment 2 oz., naphthol 1 dram. The hair should be kept cut short during the treatment. 2. See directions for the treatment of comedones in the "Home Hand-Book," page 1267. 3. For sunburn apply zinc ointment, which can be obtained from any druggist, or the following lotion: Subcarbonate of bismuth 3 drams; water 4 oz. For tan, bathe the surface with the following lotion: Lemor juice 2 oz.; powdered boracic acid 1 dram. 4. The discharge can be stopped, but some of the results of catarrh are more or less permanent, and are curable only by the aid of a surgical operation. 5. No. The patient is probably suffering from dilatation of the stomach.

SCIENCE IN THE HOUSEHOLD.

CONDUCTED BY MRS. E. E. KELLOGG.

SANITARY KITCHENS.

BY MRS. E. E. KELLOGG.

IT is a mistake to suppose that any room, however small and unpleasantly situated, is "good enough" for a kitchen. This is the room where housekeepers pass a great portion of their time, and it should be one of the brightest and most convenient rooms in the house; for upon the results of no other department of woman's domain depend so greatly the health and comfort of the family as upon those involved in this "household workshop." The character of a person's work is more or less dependent upon his surroundings; hence is it to be greatly wondered at that a woman immured in a small, close, dimly-lighted room, whose only outlook may be the back alley or the woodshed, supplies her household with products far below the standard of health and housewifely skill?

Every kitchen should have windows on two sides of the room, and the sun should have free entrance through them; the windows should open from the top to allow a complete change of air; for light and fresh air are among the chief essentials to success in all departments of the household. Good drainage should also be provided, and the ventilation of the kitchen ought to be even more carefully attended to than that of a sleeping room. The ventilation of the kitchen should be so ample as to remove thoroughly all gases and odors, which, together with steam from boiling and other processes, generally invade and render to some degree unhealthful every other portion of the house. It is the steam from the kitchen which gives a fusty odor to the parlor air, and provides a wet-sheet pack for the occupant of the "spare bed." The only way of wholly eradicating this evil, is the adoption of the suggestion of the sanitary philosopher who places the kitchen at the top of the house.

To lessen the discomforts from heat, a ventilator may be placed above the range, that shall carry out of the room all superfluous heat, and aid in removing the steam and odors from cooking food. The simplest form of such a ventilator is an inverted hopper of sheet iron fitted above the range, the upper and smaller end opening into a large flue adjacent to the smoke flue for the range. Care must be taken, however, to provide an ample ventilating shaft for this purpose, since a strong draft is required to secure the desired results.

Undoubtedly much of the distaste for, and neglect of, "house work," so often deplored in these days, arises from unpleasant surroundings. If the kitchen be light, airy, and tidy, and the utensils bright and clean, the work of compounding those articles of food which grace the table and satisfy the appetite, will be a pleasing task, and one entirely worthy of the most intelligent and cultivated woman.

It is desirable, from a sanitary standpoint, that the kitchen floor be made impervious to moisture; hence, concrete or tile floors are better than wooden floors. If wooden floors are used, they should be constructed of narrow boards of hard wood, carefully joined, and thoroughly saturated with hot linseed oil, well rubbed in to give polish to the surface.

Cleanliness is the great *desideratum*, and this can be best attained by having all woodwork in and about the kitchen coated with varnish; substances which cause stain and grease spots, do not penetrate the wood when varnished, and can be easily removed with a damp cloth. Paint is preferable to whitewash or calcimine for the walls, since it is less affected by steam and can be more readily cleaned. A carpet on a kitchen floor is as out of place as a kitchen sink would be in a parlor.

The elements of beauty should not be lacking in the kitchen. Pictures and fancy articles are inappropriate; but a few pots of easily-cultivated flowers on the window ledge or arranged upon brackets about the window in winter, and a window box arranged as a *jardinière*, with vines and blooming plants in summer, will greatly brighten the room, and thus serve to lighten the task of those whose daily labor confines them to the precincts of the kitchen.

The furniture for a kitchen should not be cumbersome, and should be so made and dressed as to be easily cleaned. There should be plenty of cupboards, and each for the sake of order, should be devoted to a special purpose. Cupboards with sliding doors are much superior to closets. They should be placed upon casters so as to be easily moved, as they are thus not only more convenient, but admit of more thorough cleanliness.

Lack of sufficient table room is often a great source of inconvenience to the housekeeper. To avoid this, arrange swinging tables or shelves at convenient points upon the wall, which may be put up or let down as occasion demands. For ordinary kitchen uses, small tables of suitable height on easy-rolling casters, and with zinc tops, are the most convenient and most easily kept clean. It is quite as well that they be made without drawers, which are too apt to become receptacles for a heterogeneous mass of rubbish. If desirable to have some convenient place for keeping articles which are frequently required for use, it might be an advantage to arrange small shelves about and above the range, on which may be kept various articles necessary for cooking purposes.

One of the most indispensable articles of furnishing for a well-appointed kitchen is a sink; however, a sink must be properly constructed and well cared for, or it is likely to become a source of great danger to the health of the inmates of the household. Earthen-ware is the best material for kitchen sinks. Iron is very serviceable, but corrodes, and if painted or enameled, this soon wears off. Wood is objectionable from a sanitary standpoint. A sink made of wood lined with copper answers well for a long time, if properly cared for.

The sink should, if possible, stand out from the wall, so as to allow free access to all sides of it for the sake of cleanliness, and under no circumstances should there be any inclosure of woodwork or cupboards underneath, to serve as a storage place for pots and kettles and all kinds of rubbish, dust, and germs. It should be supported on legs, and the space below should be open for inspection at all times. The pipes and fixtures should be selected and placed by a competent plumber.

SOME SEASONABLE RECIPES.

Granola Fruit Mush.—Sprinkle a pint of granola into a quart of boiling water, and cook for two or three minutes. Add, when done, a large cupful of nicely steamed, seedless raisins. Serve hot with cream.

Graham Apple Mush. —Prepare a smooth apple sauce of rather tart apples. Sweeten it slightly, and thin with boiling water. Have this mixture boiling, and sprinkle into it Graham flour sufficient to make a well-thickened mush. Cook, and serve hot with cream.

Traveling Lunches. —In putting up a lunch for traveling, it is desirable that it be not composed of articles of a "mussy" character, neither those liable in any way to offend the senses of the lookers-on. An exchange very sensibly suggests that "to avoid lunch odors there should be two or three baskets or packages. Every article should be carefully wrapped in clean, soft, white paper." Of course there should be plenty of knives, forks, spoons, and napkins, that the food may be handled and eaten in a dainty and creditable manner. The basket, when opened, should be a picture of order and neatness, and this should be preserved throughout, so far as may be. In order to facilitate this, one individual of the party should be elected to have sole charge of the putting up and giving out of the lunch; no one being suffered to "dive" promiscuously into the basket for anything he or she may happen to want. Each time after the dealing out of the food, this same person should carefully re-arrange the lunch.

How to Serve Fruits for Breakfast.— The *Housekeeper's Weekly* gives the following concise instructions as to what is good form in serving fruits at breakfast:—

"Serve peaches pared, sliced, and with sugar and cream.

"Serve muskmelons with some chipped ice in each hemisphere, and with salt, sugar, and knife, fork, and teaspoon at each plate.

"Serve sweet apples pared, sliced, dusted with sugar, and deluged with sweet cream.

"Serve pears pared, sliced, and with sugar and whipped cream.

"Serve bananas sliced, and with cream and powdered sugar."

The work of replacing a broken pane of glass may be greatly simplified by running a hot iron around the old putty, which loosens it, when it may be easily scraped off, and the broken pane removed.

LITERARY NOTICES.

ALL who have read and enjoyed Max O'Rell's former book will be glad to learn that a new volume of this author's travels among us, entitled "A Frenchman in America," will shortly be issued by the Cassell Publishing Company, New York. This witty Frenchman possesses such fertility of mind and resource that he seems never to be at a loss what to say of this, to him, wonderful nation. The style of the forthcoming book is said to be as fresh and racy as the first. He gives the humorous side of his experiences as a lecturer among us, which will no doubt be very entertaining reading, and has a good deal to say about the people, interesting and uninteresting, whom he has met. Mr. E. W. Kemble makes the illustrations for the book.

NOTHING has as yet been achieved in any line or department of woman's work, which is paramount in importance to the showing which she will have in connection with the World's Fair at Chicago. The *Woman's News*, published at Chicago, being fully in touch with this movement, and having correspondents on the spot, has the best of facilities for making elaborate reports of the work done in this direction. The October number of this valuable monthly contains a full report of the session of the Board of Lady Managers, just closed. A special feature of future issues will be a series of sketches embracing the prominent women connected with the Woman's Department of the World's Fair, the Woman's Building, and the architect of the same,— also a woman,— Miss Hayden. Those interested in the subject of woman's progress and advancement would do well to subscribe for this magazine. Address *Woman's News*, Chicago, Ill.

THE *Century Magazine* will celebrate the 400th anniversary of the discovery of America by publishing a Life of Columbus written especially for that magazine by Emilio Castelar, the famous Spanish orator, statesman, and author. Other articles dealing with the discovery of America are in course of preparation for the same magazine. Miss Alice M. Fletcher, of the United States Interior Department and the Peabody Museum, Cambridge, will also contribute to the *Century* in 1892 the results of her studies of the American Indian in a series of illustrated papers to be called, "The Indian's Side."

THE October number of *Good Housekeeping* has an unusually rich and varied table of contents. It has as frontispiece a beautiful poem, "Twice a Child," illustrated with an engraving of a waterfall; then follow articles on the morning work of the kitchen, by Miss Parloa, on the care of the skin, on life in a city flat, on company giving and receiving, with something about living on one's friends,— altogether a wide range of topics that each finds admirable treatment in the pages of this valuable magazine. Clark W. Bryan & Co., Publishers, Springfield, Mass.

Our Little Men and Women under its present admirable editorial direction is attaining a wide popularity. The piquant *nom de plume* of "Sophie Scissors," behind which its editor retreats, while it hides personality, yet entirely fails to conceal the rare talent and happy knack of amusing and entertaining the children, and such a felicitous combination of simple, enjoyable fun with an excellent literary style as these same little stories and sketches afford. Indeed, we would suggest the placing of the pretty *Babyland* under the same cover with *Our Little Men and Women* and under the same managing hand. There is a fresh field and an undoubted measure of financial success awaiting just such a venture. D. Lothrop Company, Publishers, Boston.

THE opening article of *Scribner's Magazine* for October, the fourth in the series on "Great Streets in the World," is by the eminent American sculptor, W. W. Story, and treats of the famous and historic Corso of Rome, recalling its mediæval glories, and giving many personal reminiscences of the writer's long sojourn in that city, with picturesque descriptions of the street as it exists at the present day. The illustrations, which are very full and fine, are by Ettore Tito, a Roman artist. Among other important articles we notice "The New Lake in the Desert," by Major J. W. Powell, Director of the U. S. Geological Survey, an account of the origin and probable effects of the new lake in the Colorado desert, and "Carlyle's Politics," by Mr. Edwin C. Martin. In this article, the writer discusses especially Carlyle's attitude toward democracy. The "Point of View" — always an enjoyable department — treats its usual number of timely subjects. Charles Scribner's Sons, New York.

PUBLISHERS' DEPARTMENT.

THE Sanitarium family spent an evening very pleasantly and profitably last week listening to a lecture on Assyria by Miss Attah, a native Assyrian lady who is traveling through this country, engaged in the work of interesting philanthropic people in missionary work in her native country.

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IF you are in health and wish to keep well, or if you are an invalid and wish to get well, one of the best means of accomplishing your desire will be the using of the palatable health foods manufactured by the Sanitarium Food Co., of this city. Among the preparations of this company, which we can especially recommend, are granola, avenola, zwieback, and whole-wheat wafers.

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ANY one who wishes to purchase anything in the line of Sanitary medical supplies, such as hot-water bottles, spine bags, family batteries, healthful garments, etc., should address the Sanitary Supply Co., of this city. This company keep constantly in stock a list of articles which can be obtained from them at any time, and which can be depended upon as being exactly what they are represented to be, and the very best that can be had.

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THE Sanitarium family have had several very pleasant visitors during the last month, among whom should be mentioned Mrs. Kate Brearley Ford, whose long residence at the Sanitarium made her face familiar to a large number of those who, like herself, were seeking health, all of whom we are sure will be glad to know that Mrs. Ford is to-day the picture of healthful activity, and able to engage as enthusiastically as ever in earnest work for the uplifting of humanity.

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THE Sanitarium family of medical students occupying the Sanitarium Medical Students' Home at Ann Arbor University, report themselves in high spirits, hard at work at their studies, and enjoying greatly the fine accommodations the Sanitarium has provided for the young men and women who are preparing themselves for foreign medical missionary work under the auspices of the Sanitarium. Twenty more young men and women are wanted to begin a course of preparatory studies with a view of entering a medical school one year from the present time.

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OUR agents continue to pour in subscriptions for this journal at the rate of several hundred each week. It is very encouraging, indeed, to the publishers of GOOD HEALTH, that its subscription list has more than trebled since the beginning of the year. Nevertheless, our ambitions are by no means satisfied. We shall not be contented until we see a copy of GOOD HEALTH in at least one hundred thousand families, in this and other English-speaking countries. The managers and editors have been at a considerable outlay of expense and labor in their efforts to make this journal the best of its kind ever published, and the success which has been attained, has placed it in the front rank of all publications of the sort. There probably never was a time in the history of the world when public attention was being aroused upon the question of health culture so generally as at present, and there are doubtless many thousands of homes in which GOOD HEALTH would be welcome, if introduced, and all that is lacking is intelligent men and women to act as agents to place the journal in the hands of the general reading public.

THE guests at the Sanitarium are just now enjoying one of the beautiful Indian summers for which Michigan is famous. The air is cool enough to be bracing, while the bright sunshine invites one to outdoor exercise. There is no season of the year more favorable for health gaining than this, and no climate just now offers better attractions. A few of the summer patients are gone, but their places are being rapidly filled by new-comers, many of whom are old patients, who have come back to enjoy the present autumn weather and special advantages offered by the Institution.

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THE new electric street railway, the construction of which has been in progress in this city for some months back, is being rapidly pushed to completion. The road bed, which is being constructed in a most thorough manner, has now nearly reached the Sanitarium. The huge boilers and dynamos for furnishing motor power are being put in position, and it is hoped that the road will be in full running order in a short time. The convenient and comfortable electric cars which are being placed on this road will be much appreciated by Sanitarium patients, as they will afford an opportunity for a ride a distance of several miles through pleasant streets and beautiful scenery, for the small sum of one dime.

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THE editor and Mrs. Kellogg recently spent a few days in visiting the orphan asylums and other charitable institutions in New York City and vicinity, which in part accounts for the lateness of this number. They were accompanied by Mr. and Mrs. Tyszkiewicz, who are preparing themselves for work in connection with the James White Memorial Home for Orphans and Aged Persons. Mr. and Mrs. Tyszkiewicz remained a week or two longer, and continued their investigations, visiting in all some thirty different institutions, from which they gathered much useful information. It is inspiring to those interested in philanthropic work to note the methods of those who labor in the interest of their fellow-men. There is always an opportunity to learn much from the experience of others, even though there may be an essential difference in the lines of work, or in the purposes for which the work is undertaken.

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PURE GLUTEN BISCUIT. — Among the most recent and valuable foods produced by the Sanitarium Food Co., we would especially mention a gluten biscuit, which represents the first successful effort ever made in this country to produce pure gluten in a palatable and eatable form. A person suffering from diabetes, chronic indigestion, or impoverished blood, or persons who are convalescing from a wasting disease, will find this biscuit admirably adapted to their condition. They have for some time been prepared according to the directions of Dr. Kellogg, for the use of Sanitarium patients, but are now offered to the public. Any one whose condition requires the use of gluten or food free from starch will find this biscuit superior to anything else which has ever been offered for this purpose. The biscuits are made in two styles. No. 1, absolutely pure gluten, 50 cents per pound. The price seems high, but it requires nearly 50 biscuits to weigh a pound. No. 2 gluten biscuit contain a small portion of starch, but is, nevertheless, sufficiently non-farinaceous to be suitable for any but the worst cases of diabetes. Both are really very toothsome, but the No. 2 biscuit is somewhat more palatable than No. 1. They are put up in half pound or pound packages. A sample will be sent on receipt of a two-cent stamp.

PUBLISHERS' DEPARTMENT.

OUR ADVERTISEMENTS.— It has doubtless been a matter of remark by the readers of this journal that our columns are not full of questionable advertisements, or crowded with meretricious articles. The editor and publishers of this journal consider themselves responsible for the character of whatever appears in its advertising columns. They do not accept the advertisement of any article or enterprise in which they have not full confidence. This fact necessarily greatly restricts not only the character, but the number of articles which appear in our advertising pages; nevertheless, it greatly enhances the value of those which do appear, both to our readers as well as to the advertisers, and we therefore take pleasure in calling attention to some of the leading advertisers whose cards appear in this journal.

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MR. BALDWIN, the photographer whose familiar face has often been seen at the Sanitarium during the last fifteen years, has been spending a few weeks at the Institution, taking pictures of the grounds, buildings, and people. A short time since, he might have been seen mounted on a high step-ladder, taking a bird's-eye view of a wheel-chair sociable being held upon the lawn, at which there were present some thirty out of the forty or fifty wheel-chair invalids at present inmates of the Institution. Mr. Baldwin is an adept in his art, and takes great pride in making the finest pictures in Michigan. He declares the landscape views about the Sanitarium and the beautiful vistas on its grounds, furnish him material for some of the finest pictures he has been able to make anywhere. The pictures which he has taken this summer, and which are doubtless the finest he has ever made here, are now on sale at the Sanitarium post-office.

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AMERICAN PUBLIC HEALTH ASSOCIATION. — The 19th annual meeting will be held at Kansas City, Oct. 20 to 24, 1891. The Local Committee of Arrangements announces that all the Railway Passenger Associations of the country have granted a one-and-one-third fare rate for the round trip on the usual certificate plan, that is: —

(1.) Procure a certificate of attendance from the agent at the starting point by paying full fare to Kansas City.

(2.) Have the certificate of attendance signed by the proper officer of the Association at Kansas City. This certificate will then procure return ticket for one-third fare. All the leading hotels of Kansas City will give special rates to delegates. Arrangements are being perfected for an excursion into Kansas, as one of the features of the Association on Entertainment. For any information as to the meeting, address, Dr. E. R. Lewis, chairman, or Dr. Joseph Sharp, secretary, local committee of arrangements, Kansas City, Mo.

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ELDER FRANK HUTCHINS and wife are spending a few weeks at the Sanitarium, preparatory to their departure for the Bay Islands, where they expect to engage in medical missionary work. Mr. Hutchins and wife both spent several months last winter pursuing studies in connection with the Medical Missionary Class at the Sanitarium, and are now taking further instruction to complete their preparation for the missionary work which they are about to undertake, under the auspices of the International Health and Temperance Association and the Foreign Mission Board. From our acquaintance with these workers and a knowledge of their interest in health principles, and especially in all branches of sanitary and hygienic reform, we have great confidence that their efforts will be attended by success; and as they are to be pioneers in this line of missionary work, we shall watch the results of their labors with very great interest, and will doubtless be able to report in future numbers of the journal some interesting accounts of their experiences. The Bay Islands, as most of our readers know, are a small group located east of British Honduras, in the Gulf of Honduras. There are already quite a number of persons on these islands who are interested in the principles advocated in this journal, and hence our friends who are going there will doubtless find many who are interested in the subjects which they have to present, and we have no doubt that such good results will follow their efforts at the Bay Islands and other islands which they expect to visit, as will be an encouragement to others to go and do likewise.

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ANY one wishing a folding bath-tub will be pleased with the New Self-heating Folding Bath-tub manufactured by the Folding Bath-tub Co., of Marshall, Mich. We have one of these tubs in use, and are very much pleased with it.

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A NEW MEDICAL JOURNAL.— We are informed that next month there will appear a new medical journal, entitled *The Bacteriological World and Modern Medicine*, published by the Modern Medicine Co., Battle Creek, Mich. Favorable terms will be offered for clubbing this journal with GOOD HEALTH.

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CHEAP EXCURSION RATES TO CHICAGO EXPOSITION. — The Chicago & Grand Trunk Railway announce very low excursion rates to Chicago and return, for the Exposition. The round trip rate from Battle Creek, including one admission to the Exposition, is only $4.50. Tickets will be sold on Tuesdays, September 22, 29, October 6, 13, and 20, good going on date of sale and good to return up to and including, Monday next following date of sale.

* *
*

ANY one who wants an elastic stocking, shoulder-brace, artificial leg or arm, or anything of the sort, can find no more reliable house than that of Sharp & Smith, 73 Randolph St., Chicago, Ill. We have purchased hundreds of dollars' worth of instruments, apparatus, etc., from this house within the last fifteen years, and have been uniformly pleased, not only with their goods, but with their methods of doing business, and can cheerfully recommend them as a thoroughly well-established and reliable house.

* *
*

PEROXIDE of hydrogen is unquestionably one of the most efficient germicides known, and it has the further advantage that it is not poisonous, as are the great majority of germicides. It is on this account exceedingly useful in diphtheria and other diseases, as well as in the dressing of wounds. The best preparation of peroxide of hydrogen is Marchand's, which is for sale by all leading druggists, and is manufactured at 10 W. Fourth St., New York City, by Charles Marchand. We have used this excellent preparation for a number of years, and would not be without it.

CH. MARCHAND'S

PEROXIDE OF HYDROGEN.

(MEDICINAL) H_2O_2 (ABSOLUTELY HARMLESS.)

Most powerful bactericide and pus destroyer.
Endorsed by the medical profession.
Uniform in strength, purity, stability.
Retains germicidal power for any length of time.
Taken internally or applied externally with perfect safety.

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DR. GEO. B. HOPE, Surgeon Metropolitan Throat Hospital of New York. "Some Clinical Features of Diphtheria and the Treatment by Peroxide of Hydrogen." *N. Y. Medical Record.*

DR. J. MOUNT BLEYER, of New York. "Some Practical Hints in connection with Intubation of the Larynx and a resumé of 206 cases of Diphtheria operated on from 1886 to 1888." *N. Y. Medical Journal.*

DR. DAVID PHILLIPS, of New York. "Hydrogen Peroxide in Diphtheria." *N. Y. Medical Journal.*

DR. G. F. ADAMS, of Pulaski, N. Y. "Hydrogen Peroxide in Diphtheria." *Medical Era* of Chicago, Ill.

DR. W. F. WAUGH, of Philadelphia, Pa. "Scarlatinal Diphtheria." *The Times and Register*, Philadelphia, Pa.

NOTE.—Avoid substitutes—in shape of the commercial article bottled—unfit and unsafe to use as a medicine.

Ch. Marchand's Peroxide of Hydrogen (Medicinal) sold only in 4-oz., 8-oz., and 16-oz. bottles, bearing a blue label, white letters, red and gold border, with his signature. Never sold in bulk.

PHYSICIANS WILLING TO PAY EXPRESS CHARGES WILL RECEIVE FREE SAMPLE ON APPLICATION.

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☞ Mention this publication.

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★ ★ ★

Which is just the thing for a Valuable and Entertaining *Christmas Present* for the Young Folks. The following are the titles of the principal sections of the work:—

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Some Strange People,
Dame Fashion and Her Slaves,
The Habitations of Men,
The World's Bill of Fare,
Health and Temperance Miscellany,
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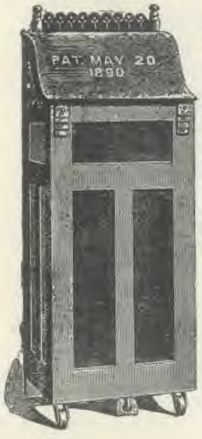

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Cincinnati, Jackson & Mackinaw
RAILROAD.

W. H. BROWN, Receiver.

Time Schedule of Passenger Trains, in effect July 8, 1891.

Going North and West.			STATIONS.	*Going South and East.*		
	P.M.	P.M.			A.M.	P.M.	
.....	1.30	8.15	Ar....Allegan.....Lv	.....	7.40	2.35	.....
A.M.	A.M.	P.M.			A.M.	P.M.	A.M.
1.45	11.45	6.45	Ar..Battle Creek..Lv	.....	9.14	4.12	5.45
P.M.	A.M.					P.M.	P.M.
6.30	7.35	.....	Lv.....Toledo.....Ar	.....	.....	8.35	12.10
		A.M.	P.M.		A.M.	P.M.	
.....	.....	12.13	3.11	Ar.....Bryan.....Lv	6.20	1.32	.....	.....
		P.M.	A.M.		P.M.	P.M.	
.....	.....	5.00	7.30	Lv...Cincinnati...Ar	1.45	8.55	.....	.....

Direct connections at Cincinnati with all roads diverging. Trains arrive and depart at Grand Central Depot, Cincinnati.

F. B. DRAKE, *Gen. Manager.*

T. C. M. SCHINDLER, *Gen. Pass. Agt.*

TOLEDO, OHIO.

Chicago & Grand Trunk R. R.

Time Table, in Effect May 10, 1891.

GOING WEST.						STATIONS.	GOING EAST.					
	p m	a m	p m				a m	p m		p m
...	3.00	9.00	7.00	.....	.....	.....Boston.....	.....	8.30	9.50	.....	7.30
	p m	p m	p m				p m	a m	p m	p m	a m
...	5.00	6.00	8.00	.....	.....	.....New York.....	.....	9.55	7.40	5.07	10.10
	a m	a m	p m				a m	p m	a m	a m	p m
..	6.00	6.50	1.00	.....	.....	.....Buffalo.....	.....	8.55	5.00	4.20	8.30
	a m	a m	p m				a m	p m	a m	a m	p m
.....	7.45	7.35	2.45	.....	.....	....Niagara Falls....	.....	7.30	3.17	3.10	7.10
				p m					a m	p m	p m
.....	.....	.....	.....	1.00	.....	.....Boston	.....	8.30	9.50	.....	7.30
	p m			p m				p m	a m		a m
.....	8.40	.....	.....	11.55	.....	.....Montreal.....	.....	8.10	7.45	.....	7.45
				p m				a m	p m		p m
.....	.....	.....	.....	1.00	.....	..... Toronto	.....	8 42	5.30	.....	7.40
							p m		a m		a m
.....	.....	.....	.....	.....	.....	.....Detroit.....	9.50	.....	7.45	.....	11.55
Chi. Pass.	B. C. Pass.	Lmtd Exp	Pacific Exp.	Pacific Exp.	Mail Exp.		Mail.	Lmtd Exp.	Atlte Exp.	Day Exp.	Prt.H Pass.
am	pm	pm'	pm	pm	am	Dep. Arr.	pm	am	am	pm	am
5.59	4.14	12.13	8.59	7 24	7.16	..... Port Huron	10.31	12.31	7.35	8.21	10.45
7.28	5.40	1.20	10.10	8.55	8.31	.....Lapeer.....	8.55	11.15	6.17	7.01	9.17
8.05	6.27	1.48	10.43	9.45	9.05	.....Flint.....	8.0	10.45	5.40	6.27	8.35
8.48	7.24	2.14	11.28	10.30	9.35	..... Durand.....	6.5	10.20	5.03	5.55	7.40
10.00	8.25	3.00	12.33	11.30	10.30	.....Lansing	5.37	9.30	4.00	5.05	6.35
10.37	8.58	3.25	1.06	12.05	11.00	.....Charlotte.....	4.58	9.01	3.25	4.37	6.02
1.00	10.00	4.10	2.00	1.00	11.50	....BATTLE CREEK....	4.05	8.20	2.35	3.55	5.15
1.48	pm	.....	2.50	1.48	12.30	.....Vicksburg	2.55	7.43	1.48	.....	am
1.58	.....	.....	.....	1.58	.....	.....Schoolcraft.....	2.42	.....	1.33	.....	.....
2.52	.....	5.25	3.48	2.45	1 22	.....Cassopolis.....	1.50	7.00	12.45	2.35	.....
3.40	.....	6.00	4.25	3.35	2.10	..... South Bend.....	1.00	6.20	12.00	1.57	.....
.....	.....	.....	.....	.....	.....	Haskell's.....	.....	.....	.....	.....	.....
5.15	.....	7.21	5.55	5.10	3.40	.....Valparaiso.....	11.25	5.00	10.30	12.40	.....
p m	.....	9.30	8.05	7.30	5.50	.....Chicago.....	8.40	3.00	8.15	10.40	.....
.....	.....	pm	am	am	pm	Arr. Dep.	am	pm	pm	am	

Where no time is given, train does not stop.
Trains run by Central Standard Time.
Valparaiso Accommodation, Battle Creek Passenger, Port Huron Passenger, and Mail trains, daily except Sunday.
Pacific, Limited, Day, and Atlantic Expresses, daily.
Meals served in C. & G. T. Dining Cars on all through trains.

W. E. DAVIS,
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MICHIGAN CENTRAL

"The Niagara Falls Route."

Corrected June 28, 1891.

EAST.	†Mail.	†Day Express.	*N. Shore Limited.	*N. Y. Express.	*Atl'ntic Express.	‡Eve'g Express.	†Kal. Accom'n
STATIONS.							
Chicago.....	am 7.05	am 9.00	pm 12.20	pm 3.10	pm 10.10	pm 9.25	pm 4.55
Michigan City	9.10	11.10	2.00	4.48	am 12.25	11.25	7.00
Niles.....	10.20	pm 12.43	2.53	5.50	1.45	am 12.40	8.25
Kalamazoo	12.00	2.20	3.55	7.04	3.35	2.17	pm 10.05 / am 6.40
Battle Creek...	pm 12.55	2.59	4.25	7.37	4.29	3.04	7.27
Jackson.....	3.05	4.25	5.32	8.52	6.25	4.45	9.05
Ann Arbor.....	4.42	5.25	6.22	9.45	7.45	6.05	10.19
Detroit.....	6.15	6.45	7.20	10.45	9.20	7.30	am 11.25
Buffalo.....	am 3.00	am 3.00	am 3.00	am 6.25	pm 5.05	pm 5.05	pm 7.00
Rochester.			5.50	9.55	8.10		10.00
Syracuse			8.00	12.15	10.20		am 1.00
New York.....			pm 3.45	pm 8.50	am 7.00		7.45
Boston.....			5.40	11.05	10.45		10.45
WEST.	†Mail.	†Day Express.	*N. Shore Limited.	*Chicago Express	*Pacific Express.	†Kal. Accom'n	†Eve'g Express.
STATIONS.							
Boston.....		am 8.30	pm 2.15	pm 3 00	pm 6.45		
New York.....		10.30	4.50	6.00	9.15		
Syracuse		pm 7.30	11.55	am 2.10	am 7.20		
Rochester.....		9.35	am 1.45	4.20	9.55		
Buffalo.....	pm 11.00	11.00	2.40	5.30	11.50	am 8.45	
Suspen. Bridge			3.25	6.25	pm 12.50		
Detroit	am 8.20	am 7.40	9.25	pm 1.20	9.15	pm 4.45	pm 8.00
Ann Arbor.....	9.35	8.39	10.19	2.19	10.30	5.52	9.18
Jackson.....	11.25	9.40	11.18	3.17	11.50	7.15	10.45
Battle Creek ..	pm 1.00	11.12	pm 12.22	4.25	am 1.23	8.47	am 12 05
						pm 9.30 / am 6.00	1 10
Kalamazoo. ...	2.17	11.55	12.59	5.00	2.17		
Niles.....	4.15	pm 1.12	2.08	6.17	4.15	7.40	3.10
Michigan City	5.37	2.14	3.08	7.20	5.45	8.55	4.30
Chicago.....	7.55	3.55	4.50	9.00	8.05	11.15	6.50

*Daily. †Daily except Sunday. ‡Daily except Saturday.

Accommodation train for Jackson and all intermediate points leaves Battle Creek at 6.16 P. M., arriving at Jackson at 7.55 P M., daily except Sunday.

Accommodation train for Niles and all intermediate points, leaves Battle Creek at 7.53 a. m. arriving at Niles at 10.05 a. m., daily except Sunday.

Trains on Battle Creek Division depart at 8.03 a. m. and 4.35 p. m., and arrive at 12.40 p. m. and 7.00 p. m., daily except Sunday.

O. W. RUGGLES,
General Pass. & Ticket Agent, Chicago.

GEO. J. SADLER,
Ticket Agent, Battle Creek.

HEALTH FOODS.

In the effort to meet the necessities of a large Sanitarium, with its great variety of patients, we have produced a number of food preparations adapted to different diseased conditions, the merits of which are such as to secure for them a very large and increasing sale, not only to persons belonging to the invalid class, but those who wish by "good living" to avoid disease. The following are the leading preparations:—

	Cts. per lb.		Cts. per lb.		Cts. per lb.
Oatmeal Biscuit	12	White Crackers	10	Wheat Granola (bulk 10)	12
Medium Oatmeal Crackers	10	Whole-Wheat Wafers	10	Avenola (bulk 10)	12
Plain Oatmeal Crackers	10	Gluten Wafers	30	Granola (bulk 10)	12
No. 1 Graham Crackers	10	Rye Wafers	12	Gluten Food No. 1	50
No. 2 Graham Crackers	10	Fruit Crackers	20	Gluten Food No. 2	20
Plain Gr'h'm Cr'kers Dyspeptic	10	Carbon Crackers	15	Infant's Food	40

Sample Packages containing Specimens of each of our Foods sent postpaid for 50 cents. Selected Samples, 25 cents.

All grain preparations can be supplied in large or small lots, as we keep a fresh supply constantly on hand of goods, which are largely made expressly for us, of a superior quality of grain. Address—

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