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(From La Tour du Monde.)

GOOD HEALTH
A JOURNAL OF HYGIENE
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INTERNATIONAL HEALTH STUDIES.

BY FELIX L. OSWALD, M. D.

Author of "Physical Education," "The Bible of Nature," Etc.

51. — Colorado.

THE arbitrary boundaries of our central States have their advantage from a surveyor's point of view, being often defined by a line running due north or west for hundreds of miles, but that arrangement is apt to combine regions with a rather slight pretense to a natural congruity of soil and climate.

As a striking instance of that disparity, topographers could mention the mathematical square representing the limits of the State of Colorado and comprising districts as dissimilar as Switzerland and Western Russia. The traveler who crosses the plains of Kansas in a westerly direction, and passes the point where Butte's Creek enters the valley of the Arkansas, needs a map to persuade himself that he has reached the famous mountain State of the West, the romantic Sierra land of Pike and Fremont. The general appearance of the country is still that of a "hummock-prairie;" as far as the eye can reach the expanse of the fallow plain is broken only by ripples of drift sand and depression indicating the course of shallow streams, many of them shrinking in dry weather to a string of brackish pools.

Fifty miles farther west the ripples gradually swell into ridges, the current of the Arkansas becomes less sluggish, and on clear days, the faint outline of a blue mountain range can be discovered on the southwestern horizon.

As we approach those mountains, the physical geography of the country undergoes a marked change. Rocks peep from the seams of the hills, the brooks seem to have awakened from their torpor; bunchgrass, shrubs, and at last trees line their banks, and swarms of birds attest the fact that we have passed the desert of the bleak central plateau. In the neighborhood of Denver, though still at a considerable distance from the foot of the Sierras, gardens flourish near every water course, the acclimatized trees of the Atlantic slope have taken deep root, and thrive as in their native soil. Is it possible that this oasis of the midland plains can claim an elevation of more than five thousand feet, equal nearly to the highest summits of the Adirondacks? How can we account for the fact that altitude, combined with distance from the sea, has failed to stunt the vegetation?

The fact is that there are exceptions to the rule which makes "elevation above the sea level" a test of climatic conditions. About a hundred years ago a Swiss geographer elaborated a formula, making "one thousand feet of vertical altitude equivalent to 200 miles of greater distance from the equator." In other words, observations of thermal conditions at various levels of the western Alps, seemed to prove that if a valley dweller should remove his residence to a mountain five thousand feet higher than his former home, he would find the climate just as much colder as if he had settled one thousand miles farther north. The general belief in the correctness of that rule was first shaken by the establishment of the fact that on the tablelands north of the Himalaya Mountains the snowline is nearly three thousand feet *higher* than in the highlands of Hindostan. On isolated

peaks on the borders of Nepal, the reign of eternal winter begins at an elevation of 15,000 feet, while on the Thibetan plateau, many hundred miles farther north, hardy fruits and cereals can still be raised at an altitude of 18,000 feet. It seems, then, that on extensive tablelands, Nature, as it were, begins a new count, accepting the general level as a starting point, with a considerable disregard of the absolute elevation above the surface of the sea.

The latitude of Denver is nearly that of Cincinnati, O., and Baltimore, Md.; and according to Haller's formula its climate ought to be that of Labrador, a thousand miles farther north. The only perceptible difference, however, is that of humidity. The winters are mild, compared with those of New England, and the genial warmth of the Indian summer lingers as long as anywhere in the valley of the Ohio.

In less than thirty years, Denver has shot up into a stately metropolis, with shady avenues, fountains, and garden suburbs,— not of the St. Petersburg glass-roof type, but with outdoor shrubberies and ivy-mantled pavilions. The promenades and parks are well patronized, and last fall, when a prominent American temperance association proposed a convention in the Rocky Mountains, a western member of the society urged them "not to let the lateness of the season change their purpose, because in Denver and Manitou, November was still a picnic month."

CATHEDRAL PEAK, "GARDEN OF THE GODS," COLORADO.

South of Denver (still to the east of the highlands proper) nature has met the park makers half way, and the township of Colorado Springs on the road to Pueblo is really a triumph of landscape gardening: turrets and marble terraces gleaming amid a wilderness of trees, at least half of them evergreen coniferes. Colorado Springs, by the way, is a prohibition town, a "temperance oasis in the midst of King Alcohol's domain," as a local patriot describes its contrasts from the contiguous cowboy strongholds.

The remarkable absence of fogs has made the Colorado foothill region a favorite resort of consumptives, and the occasional disappointment of such health seekers may have something to do with the sandstorms which invade the borders of the highlands at the dryest time of the year, *i. e.*, at the end of October, just after the arrival of a plurality of invalids from the East. On windy days, that grievance is not strictly confined to the foothills, for the explorers of the highlands often witness the fantastic dance of sand-whirls on the plateaus of the central Sierras.

But another, and much more frequent, cause of delay in the hoped-for progress of recovery, is the self-delusion of patients who persist in the habits that have resulted in the development of their disorder, and trust to the mere geographical proximity of a high mountain range to absolve them from the penalties of manifold sins against the health

laws of nature. "I might as well have staid at home," wrote a victim of that illusion, who had contracted a chronic lung complaint in a prairie town of Western Missouri, and tried in vain to cure it in the bracing atmosphere of a Colorado health resort; "I might as well have flung the price of my railway tickets into Spring River, and saved myself the worry of the long journey. Altogether this foolish trip has cost me something like $300, and the only visible improvement is in the bank account of the Colorado hotel keeper." I afterward learned that he had slept and passed ten out of twelve daylight hours in a room filled with the fumes of strong cigars, and protected against open windows whenever the thermometer sank below sixty degrees Fahrenheit. A sublime snow-covered mountain range was visible from one of those windows, but the invalid had limited his excursions to the post-office of the little highland town and the smoking-room in the basement of the hotel.

The State of Colorado has doubled its population in the course of the last fifteen years, and the most remarkable progress has been achieved in the Sierra counties, where good-sized towns have sprung up at an elevation of seven and eight thousand feet above the level of the sea. They are mining towns, popularized by the directness of the opportunity for the acquisition of precious metals, but in spite of their great altitude make no pretense to a high rank as health resorts, meat and strong stimulants being comparatively cheap, and fruit dearer than almost anywhere within the borders of our national territory. The dairy industry of the great mountain State is as yet in its cradle, though experts pronounce the highland pastures equal to the best of the European Alps. "What is Switzerland noted for?" asked a teacher of the primer class. "Sweitzer Kase." "Well, yes, but something much more grand and awe-inspiring." "Limburger!" shouted a youngster, who must have been a native of the Colorado mining districts, where highly spiced comestibles as well as beverages are in great request; but from a sanitary point of view it would hardly be an advantage if the success of a Colorado cheese factory should encourage imitators.

Railways stick to the water courses that have opened ready-made gaps through the mountains, and many highland towns have been founded in deep glens, where the sun rises late and sets early, and the obstruction of air-currents would make the noon hours often unpleasantly warm if the lingering chills of the long night did not preclude that risk.

But still higher up, in the heart of the Sierra Madre, there are districts which fully deserve the admiration of their visitors. The name of the Colorado "Parks" is appropriate chiefly in the original sense of an enclosure. They are valleys or mountain basins inclosed by high ridges that break the force of the winter winds, but their width insures them the full benefit of every ray of sunlight; the grassy slopes alternate with groves of somewhat stunted, but thrifty trees, and in sheltered glens aromatic herbs diffuse their fragrance as late as November, though the enormous altitude is attested by glimpses of neighboring snow peaks. The flora of these parks includes plants found nowhere else on this continent, and in a dell of the Pagosa Range in Rio Grande county, I came across specimens of the Alpine mayflower and of a variety of whortleberries abounding on the Jutland (Danish) heather, but rarely seen farther south. Mineral springs are somehow rarer than in the foothills, but the spring water is the very antithesis of the ditch fluid which, in the lowlands, is not altogether reserved for washing purposes, and the apostles of the frost cure could find no better locality for testing their panacea. In a good many of the summit valleys, where the mercury

GRAND CANYON, COLORADO.—LOOKING EAST FROM TO-RO-WEAP.

at noon may rise to 85° in the shade, night frosts nevertheless occur in *every week* of the short summer, and become pretty severe after the end of September, though by 10 A. M. the sun has generally licked the rime off the herbage of all but the deepest glens.

Nor can the visitors of the "parks" complain of one of the chief grievances of many of the fashionable summer resorts of the Old World — the lack of natural pastimes. Colorado, with its sparsely settled plains and inaccessible rock solitudes, is a ready-made game preserve, and even on the prairies the passengers of the railway trains every now and then get a glimpse of an antelope herd or a prowling coyote, not to mention grouse and long-eared rabbits. The foothills still shelter deer, and in the highlands game is still as abundant as the companions of Daniel Boone found it in the southern Alleghanies, or the followers of the pious Æneas in the coasthills of Italy. Trout-streams, too, abound in the Sierras of the "Great Divide," where a narrow plateau often sends one brook to the Pacific, and another to the Gulf of Mexico. A ramble on these ridges is a promenade on the roof of a continent — a privilege which here and there can be enjoyed without the trouble of a preliminary break-neck climb, on the heights of Marshall's Pass, for instance, where the Denver and Rio Grande Railroad crosses the Sierras near the borders of perpetual snow and several thousand feet higher than the pinnacles of the White Mountains and North Carolina Alleghanies. Trains halt near the summit point, and the traveler can taste the water of springs as cold as the ice pools in the depth of the rock clefts, or walk out to the brink of the ridge and let his eyes wander over square leagues of grassy slopes, where frosts and droughts have done the work of a lawn roller, and clipt down the turf as smooth, and almost as short, as velvet. Firs resembling the umbrella pines of the upper Alps grow in copses, and suggest the possibility of roughing out the winter without the aid of imported fuel.

Even the signal officer stationed at the meteorological observatory on Pike's Peak, does not seem to have shared the experience of lighthouse keepers, who, as a rule, find the hardships of their job far in excess of their expectations. In summer the "Stem winder" tramway brings visitors within a short distance of the summit; letters, newspapers, and provisions arrive at regular intervals, and the winter, though rather lonesome, is not half as vigorous as the great altitude (13,400 feet) might seem to imply. Blizzards, of the "ice tornado" type, for one thing, are actually less frequent than on the western prairies; there is always more or less wind astir, but the atmospheric conditions do not favor the development of hurricanes. It would be interesting to collect statistics on the pulmonary effect of that rarified atmosphere, though, judging from Old World analogies, a protracted sojourn at the summit station would probably tend to relieve chronic catarrh, and to aggravate asthmatic affections.

(To be continued.)

MUSIC AND DISEASE. — Dr. Blackman, a medical practitioner of considerable note, contributes to the *Medical Magazine* an interesting and rather curious article on the subject of music as a medicine. His theory is that the effect of music is impressed by a reflex action on the nerves which govern the supply of blood. The effect of music is to dilate the blood-vessels so that the blood flows more freely and increases the warmth of the body. By this increased blood supply nutrition is affected. As the improvement of the health depends upon nutrition, the musician may be of great assistance to the work of the physician. Says Dr. Blackman: —

"The physiological effects of music have been studied by Dogiel, a Russian, and as the result of numerous experiments he concludes that, 1. Music exhibits an influence on the circulation of the blood; 2. The blood pressure sometimes rises, sometimes falls; 3. The action of musical tones and pipes on animals and men expresses itself for the most part by increased frequency of the beats of the heart; 4. The variations in the circulation consequent upon musical sounds coincide with changes in the breathing, though they may also be observed quite independently of it; 5, 6, 7. The variations in the blood pressure are dependent on the pitch and loudness of the sound and on the tone color; 8. In the variations of the blood pressure, the peculiarities of the individuals, whether men or lower animals, are plainly apparent; and even nationality in the case of man has some effect."

The idea of the employment of music in disease is, however, by no means new. More than thirty years ago it was tried with satisfactory results in asylums for the insane. Yet in some instances music has not only inspired, but even increased, madness, seldom forms of violent aberration. The case of the unhappy king of Bavaria, who went mad over Wagner's music, will be recalled. The concord of the sweet and sonorous sounds of that composer, forever haunting the chambers of his brain, had disordered it. — *Baltimore Catholic Mirror.*

HEALTHY HOMES.

VII.

HELEN L. MANNING.

WATER SUPPLY.

"FILL again to the brim! again to the brim!
For water strengtheneth life and limb.
To the days of the aged it addeth length;
To the might of the strong it addeth strength:
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light.
So, water, I will drink naught but thee,
Thou parent of health and energy."

The poet Johnson thus beautifully expresses a plain truth as to the value of water, since it is the second essential to the maintenance of life, air, of course, coming first. Tanner and others who have kept prolonged fasts, have indulged freely in the internal and external use of water, and have taken pains to be much in the open air. In order, however, to make sure that water shall be the "parent of health and energy," we must see that it is pure, else it may become the "parent" of disease and death instead.

A large proportion of the water which goes to sustain the human system is a component part of our food, the percentage being very high in fruits, green vegetables, milk, meat, and eggs. The purity of these asticles must be looked to, as well as of water taken in its simple form. Cooking renders innocuous almost everything which is liable to taint the food supply, and drinking water which is at all suspicious, should be "cooked" likewise.

The source of water supply in cities is generally a lake or river, and its wholesomeness is usually questionable unless boiled or filtered. In villages and farming districts, wells of various kinds are in general use, although cisterns are used somewhat, and in mountainous regions, living springs are often found available. Spring water is generally regarded as the most desirable, or else the water from an artesian well, which is really an artificial spring. Shallow wells, those say from ten to twenty-five feet deep, are rarely safe, being mostly fed by surface water. A deep bored or driven well can generally be depended upon to furnish pure water. The well should be covered with a very tight double platform, and the earth beneath the platform rounded up with care so that the immediate drainage is *from* the well, not toward it.

Every well acts as a drain to an inverted cone of earth, the bottom of the well being the apex of the cone, and its base a circle with the mouth of the well for a center. The diameter of this circle will vary with the porosity of the soil. With a very compact clay, free from seams, it may be only from three to four rods; but with porous sand and gravel, it may be ten or fifteen rods or even more, if the well is very deep. In the Lausen epidemic of typhoid fever, it was proven conclusively that the infectious substances were carried nearly a mile by percolation through the soil, before reaching the well. Any foul material which gets into this drainage area, tends to find its way into the well. As the water filters downward through the ground, it gives up all suspended insoluble matter and much that it holds in solution. But the capacity of the soil as a disinfectant is limited, and it may become, after a time, so thoroughly saturated with sewage matter that any additional amount will pass on unchecked into the water vein.

While driving in the country, the writer stopped at a farmhouse one day and asked for a drink of water. A glass of saffron-tinted fluid was brought, at which I looked a little askance, tasted cautiously, and felt my thirst leave suddenly on the most approved mind-cure plan. The girl who brought the water divined my suspicions, and explained that it was "soft water with a mineral flavor from the windmill tank." The water may have been "soft," and its peculiar hue due to "mineral" solutions, but the sight of a remarkably filthy barnyard in close proximity to the windmill, kept me from drinking for mere politeness' sake. The debris and filth of years seemed to have been allowed to accumulate undisturbed around the barns. It was just after a hard rain, and in all the spots where a little shoveling had been done and in other depressions, vile water had filtered through the decomposing mass, and collected into offensive puddles. Yet many and many a well in the country is located in or near a barnyard more or less vile, that it may be convenient for watering stock as well as for household uses; and many and many a well in villages and small cities, is situated within the immediate drainage area of the still more dangerous filth of vaults and cesspools. No wonder that typhoid fever and diphtheria become epidemic under such circumstances.

The disadvantages of cistern water are numerous. Dust and other impurities of the air are brought down with the rain, and in manufacturing or mining

regions, this is considerable. The roofs of the houses are also dust covered, and, in addition, the excrement of birds is liable to be deposited thereon. Whether or not cistern water is used for drinking purposes, the conductor pipes should be so arranged that the first part of a rain fall is diverted from the cistern in order to avoid gathering in the various impurities from the air and the roof. A cistern should never be built in the cellar; the air above the water when so located, is close and impure, and the periodical cleaning apt to be neglected. An iron pump is to be preferred to a wooden one, for wood quickly rots and adds its contaminating influence to the water. Cistern water used for drinking purposes needs first to be filtered and then boiled in order to be safe. Filtration alone is insufficient, as it is an undisputable fact that after having been used awhile, the filters themselves become culture chambers for germs. Water from shallow wells and from tanks pumped from lake or river, should always be boiled for drinking and domestic purposes.

The State Board of Health of Michigan publishes the following simple test for ascertaining whether or not water is pure. It should be applied, not once, but frequently, where there is the least reason to question the purity of water.

"Fill a perfectly clean two-quart bottle two thirds full with the water; dissolve in this a teaspoonful of the cleanest white sugar, cork the bottle, and set it away in a warm place for two days: if it remains clear and bright, you need fear no evil; but if it turns milky-white and gives off any offensive gases, beware how you drink the dirty stuff."

Water always contains germs, especially that from a public water supply, but they are not apt to do much harm unless present in great numbers, and then the water necessarily contains putrescent matter upon which they may thrive and multiply. The philosophy of the above-given test is that sugar furnishes the germs, if present, with a substance upon which they can feed, but not upon which they can grow, since albuminous and nitrogenous products are necessary for that. Any turbidity of the water evidences the presence of a multitude of germs, and an offensive gas indicates that the sugar has been decomposed by them into carbon dioxide. All chemical tests of the purity of water are, however, of only secondary value; the microscopist alone is able to determine the presence of dangerous germs.

None of the water pipes in common use are without objections, though iron offers the least of any; for the effect of red rust upon water is not dangerous. A German inventor has provided the only ideal water pipe, viz., iron lined with glass. Galvanized iron is merely iron with a thin coating of zinc. Serious cases of poisoning sometimes occur from this source. Poisoning from the use of lead pipes is still more dangerous, and drinking water should never be allowed to run through them.

THE TONSILS. — The interesting facts which are given below, quoting from a contemporary, should not be considered as a reason for retaining these organs in the throat when they have become diseased. A tonsil which has been the subject of repeated attacks of inflammation, has lost its power to defend itself against the attacks of microbes, and become filled with pockets in which the secretion is retained. It affords an opportunity for harboring germs which grow and develop, and hold themselves in readiness to produce an outbreak of some specific malady, such as diphtheria or a new attack of tonsilitis, whenever the individual takes a slight cold, or as a result of some other provoking cause.

The facts given are interesting as an answer to the query which must have arisen in the minds of many mothers, "Why is the body provided with organs which are a source of so much trouble and annoyance?"

"Late researches by Dr. Lovell Gullard have developed some interesting facts about them, which ought to change opinion from skeptical curiosity to grateful welcome. The tonsils are, it seems, glands in which the white blood-corpuscles are developed.

"Now, the white blood-corpuscles are the natural enemies of malignant microbes and bacteria, attacking them wherever encountered, and always coming off victorious. It will be seen that a workshop for the manufacture of white corpuscles is a valuable plant, and its location just at the junction of the mouth and the nasal passage, two sources of disease-germ supply, is only another evidence of the admirable economy of nature. While the larger portion of the white corpuscles created by the tonsils pass right on into the circulation, patrolling and protecting the entire blood system, many more remain on the tonsil surfaces to catch the insidious bacillus at the very threshold as he has stolen through the mouth or slipped in by way of the nostrils. By the time the invading germ has passed the tonsil quarantine, it is harmless, and thus, equally with the blood, are the throat, stomach, and lungs protected."

TEA-DRINKING IN IRELAND.

BY FRANCIS HOPE.

THE city of Belfast is noted for its tea-drinking capacities. The returns for 1892 show that during the last year they have consumed no less than five million pounds, to the value of $2,500,000. This gives an allowance of twenty pounds to each man, woman, and child in the city. Estimating it at the low average of 2 s. per pound (for even the poorest insist on having *good* tea, and many the best at 4 s.), we have £2 spent by each individual for tea. In most poor families there are six souls (sometimes twenty-four), so that these poor families spend £12 a year on this worse than useless article. Add to this the amount spent on tobacco and drink, and on the total amount the city could actually be supported and well fed, and starvation a thing of the past.

As one passes through the squalid streets where the poor live, and views the abject poverty, the real suffering from want, the dirt and degradation, the sight is overwhelming. One's heart is wrung for the misery of these poor souls. Yet the remedy is in their own hands, and how different it might all be if they only "knew how," and would practice a little self-denial, instead of looking for help to such a broken reed as Parliament, and listening to the frothings of the paid agitator! Poor souls! they perish for lack of knowledge. Is there not some one who will teach these people how to live, and show them a more excellent way?

SOME SINS OF PIOUS PEOPLE. — The burdens and anxieties which we compel others to bear because of our thoughtlessness and selfishness are among the sins of which we rarely repent, because we so rarely recognize them. Many conscientious people often, by overwork or through disobedience of the laws of health, bring on illnesses which impose burdens on others for a greater or less period of time, and see the error of their ways only when it is too late; for when physical suffering calls a halt on the activities, they are forced to consider others. The selfishness of good and intelligent people is hard to understand and hard to bear, because there seems no reason for the blindness that is leading them to the personal disaster which compels others to suffer both in body and mind — in mind because of sympathy with suffering; in body because of the exhaustion which is the result of anxiety and care as well as of physical weariness. Wives will ignore every symptom that indicates exhaustion, refuse to rest for lack of time, and yet know that at no distant date they will be laid aside, not only useless, but a cause of anxiety and suffering to others. Husbands will refuse to consider their physical condition until disease has laid them aside, and what should have been days of rest become weeks or months of suffering and anxiety. Sons and daughters too old to be controlled like little children, will, by excess of work or pleasure, or both, turn the house into a hospital and the inmates into nurses before they realize how far they have violated the laws of health and of ethics.

When we realize how closely every home, especially every intelligent home, is connected with the world of work and of progress, and that the interruption of illness affects as many circles as there are interests represented in the family, we begin to value properly not only the health of the individual, but that of the family, and there comes to us a sense of the closeness of the tie, the dependence that is inseparable from the fact that we are links in a chain. Our tendency is to consider ourselves units. We are units in a moral sense, but in a moral sense only. In every effort of life except in that of the development of personal character we are bound together so closely that the smallest relation of affairs is linked to a past and a future,— not only our past and future, but that of all having the remotest connection with our affairs.

Health is oftentimes a matter of moral perception. It is the full realization of the necessity of a sound body if one would have a sound mind, for it is the sound mind that keeps a moral balance, and sees the true relations of men, of things, of efforts. Overwork is more often the sin of zeal without knowledge than of intelligence; it is the blindness of selfishness that fails of recognizing the rights of others. — *Christian Union.*

PLAIN ADVICE. — "Doctor," said the patient, "I believe there's something wrong with my stomach."

"Not a bit of it," replied the doctor, "God made your stomach, and he knows how to make stomachs. There 's something wrong with the stuff you put into it, may be, and something wrong with the way you stuff it in and stamp it down; but your stomach is all right," and immediately the patient discharged him. — *Medical Review.*

Food and Feeding. — In a late number of the *Home and Country Gentleman*, Julia Ray Howard discourses at length on the above subject, from which we take the following paragraphs: —

"There are few subjects deserving of more careful consideration and study than that of food, — its elements, preparation, and effects upon the human system; and yet there is none that really receives so little thought as the process of converting nourishing substances into complex animal tissues, brains, and muscles.

"The true science of food should be thoroughly studied, that people may understand what properties enter into it, what elements the system demands in order to repair waste and to rebuild, by what kinds the necessary elements are best supplied, and how to prepare them so that the least possible demand upon the digestive and assimilating functions may be made.

"But it is not only the effects of food upon the body that should be learned, but also those it exerts upon the moral and mental faculties. A person's temper and the character of his actions depend largely upon the kind of food and drink that has entered into his stomach, and the manner in which it was prepared.

"The work of building muscles and brains goes on constantly. There is a very old saying embodied in the counsel given a young wife, to the effect that she must 'knock at the door of a man's stomach with the fryingpan' if she would gain entrance to his heart. I think that modern science would somewhat change this proverb by making the missile of attack a broiler instead of that dyspepsia-breeder, the fryingpan.

"It is unquestionably a fact that the highest standard of health, the greatest longevity, the purest morals, the best temper, the most intelligent brain work, can be attained and performed when the animal man has been nourished on the best foods most scientifically prepared. And by 'best' I do not mean the richest or most costly, but simply those containing the elements that are best adapted to supply the mental, moral, and physical needs of the system.

"If moral reforms are ever to be successfully inaugurated, if the world is to be made purer, sweeter, and better, man's moral nature uplifted, the temperance cause receive the impetus it should, and intellect attain a high average standard, — all will be accomplished in a large measure through the instrumentality of proper food."

The Conquests of Modern Science. — Surely I have established my thesis that dirt is only matter in the wrong place. Chemistry, like a thrifty housewife, economizes every scrap. The horse-shoe nails dropped in the streets are carefully collected, and reappear as swords and guns. The main ingredient of the ink with which I now write was probably once the broken hoop of an old beer barrel. The chippings of the traveling tinker are mixed with the parings of horse's hoofs and the worst kinds of woolen rags, and these are worked up into an exquisite blue dye, which graces the dress of courtly dames. The dregs of port wine, carefully decanted by the toper, are taken in the morning as seidlitz powder to remove the effects of the debauch. The offal of the streets and the wastings of coal gas reappear carefully preserved in the lady's smelling bottle, or are used by her to flavor blanc-manges for her friends. All thrift of material is an imitation of the economy of nature, which allows no waste. Everything has its destined place in the process of the universe, in which there is not a blade of grass or even a microbe too much, if we possessed the knowledge to apply them to their fitting purposes. — *North American Review.*

TOOTHACHE.

To have it out, or not — that is the question:
Whether 't is better for the jaws to suffer
The pangs and torments of an aching tooth,
Or to take steel against a host of troubles
And, by extracting, end them? To pull — to tug —
No more; and by a tug to say we end
The toothache, and a thousand natural ills
The jaw is heir to — 't is a consummation
Devoutly to be wished. To pull — to tug —
To tug! perchance to break — ay, there's the rub;
For in that wrench what agonies may come,
When we have half dislodged the stubborn foe,
Must give us pause; there 's the respect
That makes an aching tooth of so long a life;
For who would bear the whips and stings of pain,
The old wife's nostrum, dentist's contumely,
The pangs of hope deferred, kind sleep delay,
When he himself might his quietus make
For one poor shilling? Who would fardels bear
To groan and sink beneath a load of pain,
But that the dread of something lodged within
The linen twisted forceps, from whose pangs
No jaw at ease returns, puzzles the will
And makes it rather bear the life it has
Than fly to others that it knows not of?
Thus dentists do make cowards of us all;
And thus the native hue of resolution
Is sicklied o'er with the pale cast of fear;
And many a one whose courage seeks the door,
With this regard, his footsteps turn away,
Scared at the name of dentist. — *Ex.*

VEGETARIAN DIET.— In a leaflet by Mrs. Le Favre, organizer of the Chicago, New York, and Boston Vegetarian societies, also well known as a writer, she says: "I feel like proclaiming vegetarianism from the house-tops to suffering humanity. Upon the meat diet I was reduced to seventy-four pounds, with an alarming aggravation of all my ailments and the appearance of new ones. Death stared me in the face. With my adoption of a vegetarian regime, I now maintain a weight of 129 pounds (the correct weight for one of my height,— five feet, three and one half inches), with constantly improving health, and mental and moral strength. I can now work fourteen hours a day without headache and the other evils attendant upon a flesh diet.

"Ladies who want to look pretty and be charming should religiously avoid flesh foods. The high pressure of activity generated by meat is uglyfying and of a low order, and tends to make the temper hasty, the face shiny and sticky. They should eat grains for growth and strength, lettuce and other greens for cooling the blood, and fruits for cooling and purifying the blood and giving animation.

"The fashion of flesh eating more than anything else retards the higher evolution of our race; the soul nature demands the aromatic fruits, seeds, and herbs, and the vital food principle as found only in the vegetable kingdom."

WHAT TO DO IN EMERGENCIES.— When an accident happens, there is too often valuable time lost in frantic rushing hither and thither, or in hasty application of unsuitable remedies that do more harm than good. A little self-possession and the exercise of a certain amount of common sense, will enable one to be of the greatest use at such times, and perhaps even the means of saving life itself.

Every household should have a store of simple remedies, and also antidotes for some of the more common kinds of poisons. They should be kept where they are easily accessible,— not in a locked closet, of which the key is sure to be lost at the very moment when it is most needed,— and in a place well known to each member of the family.

In very severe cases of burns or scalds, the nervous system is so prostrated by the shock there is often less suffering than when the injury is slighter. The pulse will be small and quick, and a stimulant should be administered without waiting for the doctor.

The whole theory of dressing is to exclude the air. The more effectually this is done, the greater will be the relief afforded. When only a small surface is injured, an artificial skin may be formed with flexible collodion; or if that is not at hand, common mucilage or gum arabic dissolved in warm water will answer. As one layer dries, another should be painted over it.

An excellent remedy for burns and scalds is a mixture of lime-water and sweet or linseed oil in equal parts. Another excellent one is bicarbonate of soda. The common kind used for cooking purposes may be employed. A thick layer should be spread over the part, and covered with a light wet bandage, keeping it moist and renewing it when necessary.

When the clothing takes fire, it is well if the victim have presence of mind to stand perfectly still. Motion fans the flame, and causes it to burn more quickly. He may throw himself on the floor and roll over and over, but never move from place to place seeking help. A woolen shawl, a piece of carpet, or a rug may be wrapped tightly around the person, not covering the face, and if there is time to wet it, so much the better; but there is not an instant to lose, particularly if the clothing is cotton. The great object is to prevent the flames from getting down the throat and the chest from being burned. — *Elizabeth R. Scoville.*

DRUNKEN OYSTERS.— "I do believe," said an oyster-grower to a reporter, "that whisky will make anything drunk. The latest experience I have had in that line was with an oyster bed that I have down in the bay. I have seen cats spoiled in their growth by whisky, and dogs kept small. I have seen talkative poll parrots bowled up until they fell off their perch, and lay squeaking and ha-ha-ing at the bottom of the cage in the most delirious manner; but I never saw an oyster bowl up except in restaurants, and even then the oyster did n't know it. I resolved to see what effect whisky would have on a small bed that I had for my own personal use. I got some malt whisky one morning, and went down to the bed. I let in fresh water, and then poured in a little whisky. Next day I did the same thing, only I used more whisky. The whisky told on those oysters in a minute; it was too much for their nervous system. Whenever you touch an oyster's shell, it closes up mighty quick and tight. I saw one lolling partly open, and put my finger down to touch it. It feebly closed up and then opened again. I tried it several times, with the same effect. The oyster was not dead, it was simply too drunk to know there was anything dangerous in this world. This condition of things lasted several hours, when the oysters would regain their wisdom, and close up tight at the slightest disturbance of the water."— *Weekly Sun.*

"THE ancient Greeks," says Porphyry, "lived entirely on the fruits of the earth." The ancient Syrians abstained from every species of animal food. By the laws of Triptolemus, the Athenians were strictly commanded to abstain from all living creatures.

"It is best to accustom ourselves to eat no flesh at all," says Plutarch, "for the earth affords plenty enough of things, not only fit for nourishment, but for enjoyment and delight, some of which may be eaten without much preparation, and others may be made pleasant by adding divers other things to them."— *Laws of Life.*

INTERESTING FACTS ABOUT SPECTACLES.— The late Wendell Phillips, in his lecture on the "Lost Arts," speaks of the ancients as having magnifying glasses. "Cicero said that he had seen the entire Iliad, which is a poem as large as the New Testament, written on a skin so that it could be rolled up in the compass of a nutshell." It would have been impossible either to have written this, or to have read it, without the aid of a magnifying glass.

"In Parma, a ring 2000 years old is shown which once belonged to Michael Angelo. On the stone are engraved the figures of seven women. You must have the aid of a glass in order to distinguish the forms at all. Another *intaglio* is spoken of; the figure is that of the god Hercules; by the aid of glasses you can distinguish the interlacing muscles, and count every separate hair on the eyebrows. Mr. Phillips again speaks of a stone twenty inches long and ten inches wide which contained a whole treatise on mathematics, which would be perfectly illegible without glasses. Now, our author says, if we are unable to see and read these minute details without glasses, you may suppose the men who did the engraving had pretty strong spectacles.

"The Emperor Nero, who was short-sighted, occupied the imperial box at the Coliseum, and, to look down into the arena, a space covering six acres, the area of the Coliseum, was obliged, as Pliny says, to look through a ring with a gem in it — no doubt a concave glass — to see more clearly the sword play of the gladiators. Again, we read of Mauritius, who stood on the promontory of his island and could sweep over the sea with an optical instrument to watch the ships of the enemy. This tells us that the telescope is not a modern invention."

Our first positive knowledge of spectacles is gathered from the writings of Roger Bacon, who died in 1292. Bacon says: "This instrument (a plano-convex glass or large segment of a sphere) is useful to old men and to those who have weak eyes; for they may see the smallest letters sufficiently magnified."— *Journal of the Franklin Institute.*

VOICE EXERCISES.— In a late article in the *Healthy Home*, Sophia Beck gives some practical suggestions for the training of the voice in singing, from which we take the following: —

"Practice vocal as well as general light physical exercises for the development of good voices. A voice must be trained long and carefully, like a muscle, and grows, like it, to its highest development only by careful practice. One can scarcely become a vocalist without toning up the vital organs, so that learning to sing is an antidote to consumption.

"In exercising the muscles we would call special attention to the midriff, or diaphragm, a broad, muscular membrane which divides the body into two unequal rooms. It forms the floor of the upper or thoracic chamber, and the ceiling or dome of the lower or abdominal chamber.

"No constrictive bands should hamper the movements of this muscle. Snug clothing at the waist line fixes the floating ribs, and crippling the action of the diaphragm, prevents that elastic recoil at the sides so important in the production of a full, free voice.

"Imperfect nutrition of this magnificent respiratory muscle is caused from lack of exercise, which tends to partial atrophy.

"Do not mistake the stress I lay on this (shall I call it a diaphragmatic point?) to mean that one single person shall think for an instant of *how* he shall use his diaphragm in the production of voice. We only wish that he may use it as freely as his arms and legs, and thus give it a chance to develop. Study its importance to the general health of the whole body. Exercises for strengthening the intercostal muscles, regularly practiced, will increase the gamut of the voice, by developing muscles so essential to the production of clear and vibrant tones.

"Some singers have been able to perform, I use the word advisedly, with great success with an 'hour-glass' waist. Such a one has abnormally developed her thoracic muscles, but it has not improved her voice. She succeeds because of a wonderful constitution, which is able to endure the tremendous strain of using only the upper trunk muscles, while the lower are incased in the fashionable, and to her, indispensable, straight-jacket. Her success as a singer is in spite of her inartistic and unnatural mode of dressing, and not because of it. The woman thus formed lacks in good sense, and subjects herself to criticism in many ways."

HOME-MADE CANDY.— Because candy is made at home, people often regard it as unobjectionable. It may be more nearly a pure sweet than that which is sold under the name of candy in the stores, but it should be remembered that candy is not food, although it is a food substance. It would be just as sensible for a person to go around with a half dozen baked potatoes in his pocket, to nibble on now and then, as to carry a pocketful of chocolate and caramels. All foods should be taken at meal time, and sugar eaten in excess is just as bad as taking any other food in excess. If the candy eater would take a little with his meals, it would be much less objectionable than the practice of nibbling it between meals. But seriously, what is the use of eating candy at all?

A REVOLUTION IN BREAD.— Whole-wheat preparations are rapidly growing in favor in this country and England. Hon. Erastus Wyman, in the *North American Review* for May, says that he thinks that science will soon demand something more than the pure white product which has so long been the pride of bread-makers. Referring to white bread, he asks, "Does it give the working man a greater return for his hard-earned loaf? Does the refined milling process give to the convalescing invalid, to the growing child, more strength and nutriment than did the old-fashioned dark bread?" These questions he answers in the negative.

In 1890, a company was formed in Great Britain for the purpose of manufacturing whole-wheat meal, and from this small beginning there have been great results in a short time. Consumers have rapidly multiplied. New companies have been formed, and the sales have reached large figures. It is claimed that if there were as much science employed in making bread as is now employed in making beer, white bread would soon go out of fashion as an inferior article.

The process used in the manufacture of whole-wheat meal is thus described in the *American Miller*:—

The iron mill used is of exceeding simplicity, and acts by creating two exceedingly powerful revolving air currents, by which two grains of wheat are thrown against each other, thus being reduced by attrition — bran, germ, and kernel — to a flour which, as soon as fine enough, is floated off on a rising air current, and deposited in the bin above the packer, without the necessity of submitting it to any bolting or sifting process. The grinding is done at low temperature; the meal is perfectly dried and aërated by the circulating air currents, and the whole grain is ground. Thus all the elements present in the wheat are also found in their natural proportions in the meal. The bread baked from this meal is not white, but assumes a warm, golden-brownish tint. It is free from the rasping grittiness of the imperfectly ground Graham bread, the bran in which, never having been thoroughly pulverized, acts as an irritant upon the delicate digestive apparatus. The bread made from whole-wheat meal has a richer, more palatable taste than ordinary wheat bread.

A RED MAN'S TEMPERANCE LECTURE.— In the dense forest along the banks of Black River, in Northern Michigan, foxes and wolves are numerous, and occasionally a bear or a deer may be seen. One day a sportsman, after a long chase, succeeded in shooting a deer, and as he was a long way up the river, he decided to call at the nearest Indian hut and borrow a boat to take his game to Sheboygan. He found an Indian working in the woods, peeling birchbark, and, thinking to ingratiate himself, he drew from his pocket a flask of whisky.

"Me no drink whisky," said the Indian.

"Don't drink whisky?" asked the sportsman in astonishment; "I thought my red brothers all liked whisky."

"Yes, me like it," said the Indian.

"Like it, and don't drink it!" exclaimed the sportsman. "If you like it, why not drink?"

"Me like it and drink little; brother drink little, he want more; bimeby, heap drunk Injun. Ugh! me no drink any," said the Indian.

The sportsman looked at the Indian, then at the whisky, and finally dashed the flask against a stone, breaking it and emptying the contents upon the ground. He stood gazing at the broken flask, repeating: "'Wherefore, if meat make my brother to offend, I will eat no flesh while the world standeth, lest I make my brother to offend.' I have been a brute, but the red man's lecture shall be remembered."

He then told his errand, and the Indian rolled up his bark, went to the river with the sportsman, helped to get the deer into the boat, and took them to Sheboygan.

At parting, the sportsman grasped the red man's hand, and said: "Thank you for your temperance lecture; I shall drink no more."

The Indian smiled, seated himself in the boat, and rowed back to his hut.— *Nina Tripp in Boys' Brigade Courier.*

THE EFFECT OF EXERCISE UPON THE BRAIN AND NERVES.

BY J. H. KELLOGG, M. D.

(Continued from April number.)

THE effect of exercise upon the brain and nerves is an important and practical matter. Every one knows that after a walk in the open air, or moderate exercise of any kind, the brain is clearer, one can think more clearly, and can accomplish a greater amount of mental work than before. When the student finds himself drowsy, and his brain dull, let him take a run out in the open air, and he will come back fresh for his work; his exercise seems to have cleared away the cobwebs from his brain by giving it a fresh supply of oxygen. Oxygen is the most important of all the foods of the brain, and the brain is the most important of the organs of the body. As the brain becomes stupefied and unable to work when the proper supply of oxygen is cut off, so when a new supply of oxygen is given, the activity of the brain is increased.

Another way in which exercise aids the brain, is by removing tissue wastes. The increased amount of oxygen, received by exercise, not only vitalizes the brain, but burns up the waste substances, which are poisonous. Dr. Ferrier, some years ago, in experimenting upon monkeys, found that beef juice or extract of meat caused paralysis when applied to the brain, so that it was impossible to stimulate the motor centers so as to cause the muscles to contract. This shows that tissue poisons stupefy the brain. Exercise purifies the blood by causing the reception of a larger quantity of oxygen, which burns up the wastes, and so the brain becomes clear and vigorous.

Every one knows that nervousness is relieved by exercise. A feeling of nervous irritability is often relieved by walking in the open air. This condition of the nervous system is often due to the accumulation of poisons. It may be due to an accumulation of stagnant blood in the brain; and by a withdrawal of this through exercise, the nervousness is relieved.

The condition known as insomnia, or sleeplessness, is produced by poisons; and these impurities of the blood are taken away by the oxygen supplied by exercise. The Bible says that "the sleep of the laboring man is sweet;" and the reason is that exercise purifies the blood and supplies to the brain and nerves plenty of oxygen, so that the irritability which causes sleeplessness is unknown to him.

Another important point to be observed in relation to exercise in reference to the brain and nerves, is the fact that whenever the muscles are exercised, the brain and nerves are also exercised. Whatever brings the muscles into activity, brings the brain and nerves into activity; and as the muscles grow, the brain and nerves grow also. The nerves which supply the muscles connected with the nerve centers increase in size and activity and efficiency as the result of exercise, just as do the muscles themselves. We find, then, that exercise is a means of mental development.

In a more direct way exercise aids mental development by cultivating attention. We have an illustration of this in the little child just learning to write. When he first takes his pen in hand, he writes with his fingers, tongue, mouth, in fact with all the muscles of the body; but as he becomes more and more accustomed to writing, this use of numerous groups of muscles in writing gradually disappears; he is better able to segregate his muscles, and finally uses only the muscles of the hand or arm, instead of moving such a large number. What has made the change?

The child has simply developed his control of the nerve centers so that he is able to concentrate his attention and effort to a single group of muscles. In this way exercise cultivates attention.

This fact indicates the importance of gymnastics, the necessity for such exercises as require skill and training; not such exercises as running, walking, or shoveling, but exercises requiring concentration of the mind, and constant mental activity for their execution. In Swedish gymnastics and calisthenics we have exercises which are useful to the brain as well as to the muscles; because they constitute in themselves a nerve training which is of very great value. The trained gymnast has a control of himself which the untrained man has not. He has control of every group of muscles in his body.

The untrained man is awkward and clumsy because he does not have proper control of his muscles; he may direct a muscle to act, and that muscle may not act, but another muscle may act instead. For example, I often tell such a man to put his hips back. He tries to do as directed, but the shoulders go back instead. Why? — Because he has not trained his muscles to act properly. In the case of the gymnast, his muscles do just what he tells them to do. The average individual has very small command of his muscles. How clumsy most persons are with the left hand. It is only the right hand that is trained to any considerable degree, with most persons. We write with the right hand, and if we have any fine work of any sort, it is done chiefly with the right hand; so the right hand becomes fairly well educated. And so with the rest of the body. The untrained man is ignorant of the power of his body, while the gymnast, as the result of physical training, gets the whole body under control. If one could have the whole body under as full control as you have the right hand, how convenient it would be!

The awkwardness of the untrained man is shown in many other ways, for instance, in jumping. One man jumps with his right foot, while another can jump only with his left foot. If the man who can jump with his right foot should try to jump with his left foot, he would fail, because his left foot has not been trained. Now the left foot and hand should be trained to be dextrous. In proper training, both sides of the body must be brought into active use, and must be equally well trained, so that we shall be ambidextrous. The thoroughly trained person will have the whole body under full control.

There is another way in which exercise is exceedingly helpful as regards brains and nerves: It furnishes an outlet for surplus energy. In every steam boiler there is an escape-valve or blow-off valve, the purpose of which is to let off the surplus steam. In a similar manner, exercise is an excellent outlet for the surplus energy which may be pent up in the body requiring an exit. If this surplus strength and vigor (especially in the young) is not consumed in some useful way, it is likely to be utilized in some bad way. It is certain to find expression in some way.

Sometimes a small boy is told to sit down in a chair and keep still, as a punishment. But it is next to impossible for him to keep still. He has an amount of pent-up energy furnished by the vital activities of the body, which must be utilized, and the boy would actually become sick if this excess of vital energy were not worked off. When a healthy boy is left to himself, if he has no other occupation, he will turn somersaults when out of doors, chase the cat, throw stones at the barn, and build a pyramid of stones and tear it down again. He works just for the sake of working, because he feels an irresistible impulse to activity. No young child should be made to sit down and sit still as a punishment; he can't sit still; it is practically impossible. You see the same tendency in young animals, — in the colt, for instance. It is not natural for young animals of any kind to keep still.

Regular, systematic exercise affords an excellent means of working off the surplus energy which is not needed by the internal organs; and it must be worked off, or it will make mischief. This working off of energy affords one of the best possible means of regulating the emotions and propensities; for when this extra amount of energy is consumed, that is, when it is worked off through exercise, it is not left to find expression in harmful ways. So we find that exercise is not only a vital regulator, but one of the very best aids to purity. Man under training "keeps his body under," he keeps his propensities under control; this is one of the essential conditions of good training and development, and for the man under training is by no means so difficult a task as for the sedentary young man. Byron sometimes had lucid intervals in his insanely immoral life, in which by plainness of regimen and a vast amount of vigorous muscular work, he kept his terrible nature under control.

Now a few words with reference to the general effects of exercise. In the first place, exercise promotes general vital activity by the stimulation of the vital processes. The increased amount of oxygen taken into the blood, the increased heart-activity, the increased respiratory activity, the increased ac-

tivity of these two great vital pumps, the lungs and the heart, set in quicker motion all the vital activities of the body, so that we have increased vital activity of every sort. We see this in all living things. Every living thing exercises; even a tree exercises, it receives a sort of passive exercise, by the aid of the wind; the wind blows and the tree bends to one side, thus loosening its roots a little on the opposite side, and it strikes its roots a little deeper into the earth; then it sways in the opposite direction and the roots of the tree take a firmer hold on the other side. So the strength of the tree is increased by this kind of exercise. If you have seen a tree standing on the mountain-side where a freshet, perhaps, had washed the dirt off from the roots, you have perhaps noticed that the tree under ground is often twice as large as the tree above ground, because it stands on a high point, exposed to the wind, which is constantly swaying it to and fro, so that it was obliged to strike its roots farther into the earth or the crevices of the rocks, in order to hold itself steady. In this way, you see, exercise stimulates the vital activity, even of the tree.

If you examine the wood of the trunk and branches of such a tree, you will find that they are tough and firm and close-grained. The Bible speaks of the cedars of Lebanon. These cedars grow upon the mountain-sides where the winds are strong and blow about them until their fibers become strong, firm, and dense. These cedars were doubtless particularly valuable in consequence of the hardness and firmness of their wood, and its durability.

Now compare such a tree with a tree that grows up in a dense wood. It grows up tall and slim, and its branches are small and spindling; while the tree that stands upon the mountain-side or out in the open field, where the wind strikes it, is thick and strong, and its fibers are dense and firm, and the tree under ground may be even larger than the tree above ground, as I have said, in consequence of the exercise which it receives from the wind.

I have often noticed a man under training, whose former habits had been gross, who had been bad-tempered, whose eyes were dull, and whose skin was tawny, and his step slow; in the course of a few weeks' training, he became a transformed man; his eye became bright, his step elastic, his temper amiable; his skin so white and clear that to use the expression of the English trainers, it was "as white as a woman's." His skin becomes clear and white by means of his exercise, so the expression referred to is used as an indication that the man under training is in good condition. This elasticity of step means a great deal, indicating an increased vitality and activity of the whole body. It is not the skin alone that is clear and clean, but the brain and muscles also are clean. It is not the eye alone that is bright, but every nerve fiber is wide awake and bright. The man is good-natured and even-tempered because the brain is clear and free from irritating substances, which so often make one irritable and sour. We see, then, that the effect of exercise is to take a deep hold of all the faculties of the body, quickening and stimulating them in a marvelous way.

(To be continued.)

ROWING FOR GIRLS.

It has always been noticed that girls who from childhood are accustomed to row are of a cheerful temperament. As if that was not enough of a recommendation, such girls have never known what dyspepsia means. If the exercise is vigorous, the faster is the flow of blood. With the quickening of the circulation, perspiration becomes profuse and the body is enabled to throw off all poisonous matters. If I knew a girl who was dull, heavy footed, and heavier thoughted, with a blotched and muddy colored skin, who sometimes thought she would like to be as well as another girl, but did not do anything to reach it, nor know how, I should put her in a row boat in a shallow pond, place the oars in her hands, and tell her to take care of herself. Unkind? I think not. I should have a long rope, you know, attached to the boat, one end in my hand. The position might frighten her a little at first, but the natural instinct to help herself would come to her aid, and then, too, rowing is not difficult to learn. To most girls it comes as naturally as walking. They creep along the water, not far off shore, first with one oar, then trying two, keeping stroke for stroke, up and down, "catching crabs" occasionally, old Nep's protest at being conquered by such a courageous piece of prettiness, and in three or four attempts maybe the delightful sport is theirs. So this girl with the torpid liver and the lethargic feeling must be the gainer, for she has to think faster, she must move and breathe quicker in that unison of

time kept by her fast impelled oars. How can such a girl long remain ill or stupid?

Rowing, too, expands the chest. The next time you see a boat's crew at practice, look at the breadth of shoulders of its men, and prepare to be envious. And should you ever be in the Cove of Cork, marked on your modern geography as Queenstown Harbor, notice the women who "welcome the coming and speed the parting guest," in their little boats that toss like very cockle-shells under the shadow of the great steamer on whose deck you stand. These women have the broad shoulders, the bright eyes, the rosy complexions, the full chests, the strong organs of respiration, that are bred of healthy, vigorous exercise on the water. Like all women that row from girlhood, their backs are strong, "strong as iron bands." Corsets, or "stays," as they would call them, they never owned. Nothing so becomes a woman as health, and the girls of to-day need not use rouge at their dressing tables nor sigh for beautiful complexions and figures if they will exercise constantly and regularly in the open air.

The good effects produced upon the muscular system by rowing can be secured by certain mechanical movements produced by the rowing machines of the well-equipped modern gymnasium. The latest invention, a hydraulic rower, gives the same stroke and the same resisting action as does the water.

In so practical a matter as rowing, written instructions are of little value. Experience is the best teacher. The girl rower, in learning, requires a good steady boat, a light oar, and a companion who knows how to pull. The latter can either act as steerer or pull too, but should encourage the tyro to exert all her power and "pull, pull away." The learner must have her hands properly placed, the outside hand grasping the oar with the thumb above the handle, the inside hand holding the "loom" of the oar just where the rounded part joins the square, and keeping the thumb beneath. The elbows must be kept close to the sides, and well straightened immediately after the conclusion of the stroke. The stroke is finished by feathering the oar, and this is done by a turn of the wrist, which places the blade of the oar parallel to the surface of the water instead of vertical to the surface as during the pull. In rowing, the body should swing to and fro in a straight line with the stem and stern of the boat. The rower should throw herself well forward, in taking hold of the water with the oar, and lean well back in lifting it out of the water, the oar not being dipped in the water beyond the blade.

A little practice will enable the beginner to feather her oar, but feathering is not necessary at first. Backing is effected by pushing the blade of the oar through the water in the direction opposite to that of rowing, and feathering the oar as it leaves the water. Keeping time and stroke becomes necessary when two or more are pulling together, and in the first is the exact execution at the same moment of the feathering of the oars and their recovery by the whole crew.

Girls can just as well learn a good style of stroke from the start as a poor one. The best stroke is one which does not cause the boat to jerk. It should begin with a neat and delicate drop of the oar in the water without any splash, the rower catching hold of the water at once, and gradually increasing the power. — *Ellen Le Gorde.*

GRACE AND EXERCISE. — A young lady who is to appear in society feels, as does a young man, the embarrassment of not knowing what to do with her arms. She therefore assumes the position copyrighted by the gentle sex, and folds her hands in front of her, while her forearms rest on her hips. This is just as sure an indication that she has not perfect control of her arms as it is for a young man to thrust his hands in his pockets, says *Outing.* Women almost invariably fold their hands in front of them, while men clasp theirs behind them. In either case it may be a sign of embarrassment. Any one who has pride longs to be graceful in her movements. There is possibly no better way to acquire the necessary ease of motion than by gymnastic drill, whether with light dumb-bells, clubs, wands, or by free movements. The consciousness that this gesture can be made well, gives confidence, and confidence gives the necessary self-control. Accurate movement of the body can be acquired only by exercises.

"I WISH I was as smart as Thomas Carlyle," a young high-school student told his sister.

"Well, I don't," was the quick response.

"Why not?" the brother inquired.

"Because he always has a pain somewhere about him. The man that I call smart is too big for a pain."— *Eleanor Kirk's Idea.*

NOTHING rewards itself so completely as exercise, whether of the body or mind. — *Sir Walter Scott.*

TEACHING SELF-CONSCIOUSNESS.

BY MARY WOOD ALLEN, M. D.

WAS it not Emerson who said that the knowledge of being well-dressed gives a woman a certain feeling of serenity which even religion does not bestow?

This rather extreme statement has in it much of truth. The knowledge that her dress is all that it should be, relieves her of the feeling of self-consciousness that is so destructive of peace of mind. It is not so much the woman whose costume is *au fait* that is self-conscious, as she who herself knows why "her feather goes far round her bonnet," or "the reason for always holding her left arm fast against her side when she went abroad in her black jacket."

"If I can forget myself altogether, I always have a good time," was the statement of a young girl who was getting her first experience of social life. She had found one secret of true enjoyment, the forgetfulness of self. Self-conscious people are so either through vanity or through self-depreciation.

A self-conscious public speaker can never win his audience as he could if he lost sight of himself in his subject. If he thinks too meanly of himself, he seems in manner to apologize for his presence as a speaker, and lessens his own value in the minds of his hearers; if he thinks too highly of himself, he awakens a sense of criticism that is unfavorable to a reception of his thought.

I know a minister, sweet in spirit and honest in purpose, whose influence is greatly diminished by his self-consciousness. When he comes into the pulpit, his attitude and bearing seem to say, "Look at me. Do I not carry myself well?" and he begins the benediction with a gesture that might be interpreted as, "Allow me to present to you."

The self-conscious person does not know what to do with hands or feet or eyes, cannot talk naturally, is never at ease, and therefore puts other people in a state of discomfort. No doubt we who are parents are desirous that our children should be happy, should be easy in manner, and unconscious of self; and yet we often, unintentionally of course, train them into the most intense self-consciousness.

The child who is taught to "show off" before company is being made vainly self-conscious, and perhaps exceedingly disagreeable. Comments in the hearing of children in regard to their "smartness" often develops very unpleasant traits. Not long since I was a guest in a home where was a boy of ten, who was introduced to me as "our little mathematician." The child at once put on a sullen and offended look, and made no response to the introduction. During the meal the fond father dilated on his son's ability, and the boy grew more and more restless. When the father offered to show me some of the lad's work, he muttered, "I'll tear it up." "No you won't," said the father, "I would n't take two dollars for it." The father's motive was good, but his method was bad; and as I observed its results, I could see that the boy was becoming so conscious of self that he was constantly unhappy. As yet, the praise had irritated him; later, I have no doubt it will make him vain.

A timid, shrinking little girl was made so conscious of her looks that the meeting of strangers almost made her ill. Daily comments were made on her "shovel teeth" and "peeled onion eyes," until in desperation she veiled her face whenever she went out, and always sought to sit in the shadow when making or receiving calls, and shrank with real pain if a pair of observing eyes were fized upon her, feeling sure that they were taking account of her blemishes.

Constant faultfinding will either result in awkwardness, or in an arrogant, defiant manner, both of which are expressions of self-consciousness. Children may be made conscious of their personal appearance either by repeated prohibitions in regard to amusements that might soil or tear their clothing, or by the continual calling of their thoughts to the subject of dress by the lavish expenditure of time and money upon elegant garments to adorn their little bodies. There is something pathetic in the child who stops to consider her clothing when the question is one of childlike amusements. There is something pitiful when a young girl refuses to go to a party because she has not a new dress. In both cases self-consciousness has been developed until natural instincts of sociality have yielded to vanity.

To the thoughtful parent, the subject will present many phases not mentioned in this article, and indeed that will be the best evidence of its value if it prove suggestive beyond its own definite limits.

SLOYD WITHIN A CIRCLE.— NO. 7.

BY MRS. M. F. STEARNS.

NATURE'S artisans are always busy and keep open shop, and what more delightful places are there to

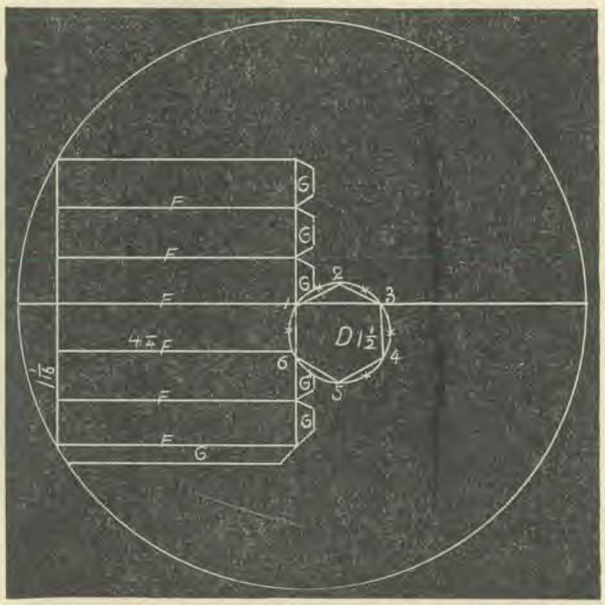

FIG. 17. MODEL NO. 8.—WORKING DRAWING.

drop in occasionally to catch an inspiration? Nothing is more enjoyable to the children, especially when such visits are timed to the particular kind of work they are doing. If, for instance, the models they are working on are hexagonal in form, they will particularly enjoy a call around at "Bee-town," where a most precise set of little Sloyders live, who make the finest exhibit of hexagonal prisms anywhere to be found.

We never heard of their having studied geometry or used the compasses and rule, but they have worked out some fine problems in geometry, nevertheless. It is certainly most wonderful how such wisdom can be bound up in those little fuzzy bodies of theirs.

Let the children study a piece of honeycomb, and ask the bees how they made it! They will find it a bit of geometry having a very sweet flavor, and as they study the great nicety with which the rows of rhombs and hexagonal prisms are fitted, they can be stimulated to do their work equally well.

Nature's other teachers they will also enjoy watching. This spider, who devotes all her time to artistic lace work can show them some fine designs in concentric circles, particularly in her summer garden work, where her interlacing circles form delicate hangings in the recesses of the shrubbery.

Cylinders and spheres, hanging homes of their feathered architects, furnish object lessons on every side. Whoever saw more perfect circles made with compasses, than those seen in the concave interiors of these woven houses? Noticeable among these is the cylindrical home of the oriole. After examining one, the children will certainly feel that if a bird can weave such a perfect form, they should be able to fold one in paper.

Then there are those other little architects, the wasps, which not only build their own homes, but make their own paper to build with — paper makers and carpenters combined. What a story of patience and industry is told by these gray, comical houses of theirs, tucked away in unnoticeable corners!

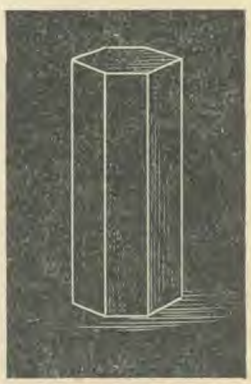

FIG. 18.—HEXAGONAL HOLDER FOR LAMP-LIGHTERS, COMPLETED.

Surely we cannot give our attention too closely to nature's models and illustrations, when we see the remarkable inventions that have resulted from such observations. A spider's web suggested to Sir Edmund Brown the scheme

of a suspension bridge. The sight of a lobster gave James Watt the plan for carrying water in pipes along the bed of the Clyde. The boring of the tiny ship worm gave to Brunel the idea of the Thames tunnel. How much nature has to suggest to us, if we will but stop to look and listen!

A pretty hexagonal holder for toothpicks or lamplighters can be made in the twelve-inch circle by measuring off 4¼ inches on diameter one side of center, line A in illustration. At point B extend this line on each side till it touches the circumference, measure an equal distance on the diameter C, and connect points 1, 2, 3, and 4. Divide the intervening space into six parallel parts, each division will be a full inch and one sixteenth over. Taking that for a radius, construct a circle on one of these parallelograms, like D in drawing, divide this circumference into six parts, connect points of circle, 1, 2, 3, 4, 5, 6, make margins as in illustration, cut one, fold on lines marked F, and glue on edges marked G.

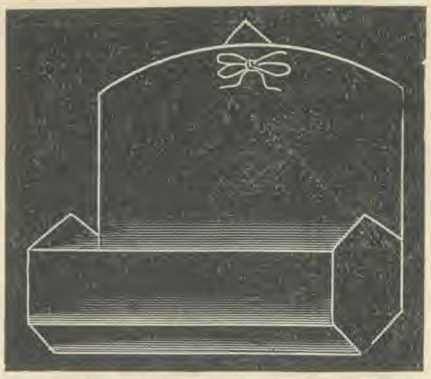

FIG. 20.— HEXAGONAL WALL-POCKET, COMPLETED.

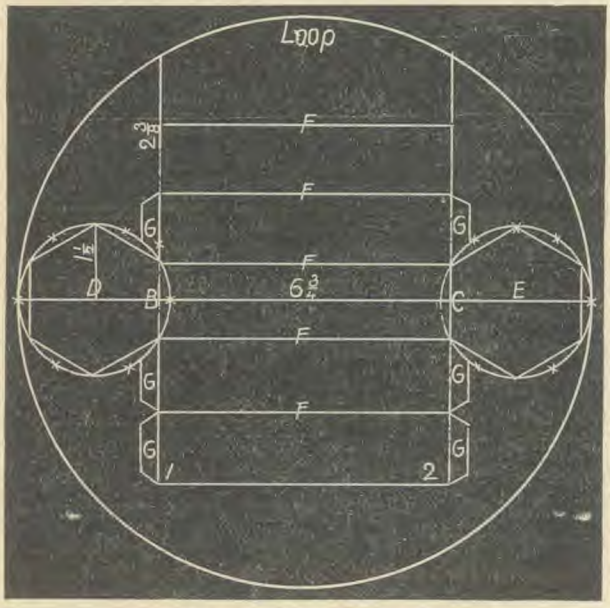

FIG. 19. MODEL NO. 9.— WORKING DRAWING.

To make hexagonal wall pocket, model No. 9, draw on each side of center of 12-inch diameter, 3⅜ inches, making line A. At points B and C, draw lines at right angles with this, extending above to the circumference, and below 3¾ inches. Beginning at points 1 and 2, measure up five spaces 1½ inches each. Connect these points, and on the third parallelogram thus made, construct circles D and E. Draw margins as illustrated, divide these arches into six parts, connect the points, and the pocket is ready to fold and glue. Proceed as in No. 7. Then place loop of rope silk as indicated, and it is finished.

TRUE CULTURE. — Wildness is a thing which girls cannot afford. Delicacy is a thing which cannot be lost or found. No art can restore the grape its bloom. Familiarity without confidence, without regard, is destructive to all that makes women exalting and ennobling. It is the first duty of a woman to be a lady. Good breeding is good sense. Bad manners in a woman are immorality. Awkwardness may be ineradicable. Bashfulness is constitutional. Ignorance of etiquette is the result of circumstances. All can be condoned, and not banish men and women from the amenities of their kind. But self-possessed, unshrinking, and aggressive coarseness of demeanor may be reckoned as a State prison offense, and certainly merits that mild form of restraint called imprisonment for life. It is a shame for women to be lectured on their manners. It is a bitter shame that they need it. Do not be restrained; carry your head so loftily that men will look up to you for reward, not at you in rebuke. The natural sentiment of man toward woman is reverence. He loses a large means of grace when he is obliged to account her a being to be trained in propriety. A man's ideal is not wounded when woman fails in worldly wisdom; but if in grace, in tact, in sentiment, in delicacy, in kindness, she should be found wanting, he receives an inward hurt. — *Gail Hamilton.*

AN authority has decided that women's waists are growing larger, whether through change of fashion or through physical culture is not certain. While as many corsets are sold as ever, women are not buying the small sizes that were so popular.

NOTHING will do more to put wrinkles in your face than worrying about things you cannot help.

MOTHS AND THEIR WAYS.

In a late number of the *Cultivator and Country Gentleman* is an article with the above title, from which we abstract the following: —

There are few housekeepers, even among young ones, that have not been tormented by the ravages of these pests, but until quite recently few have had any definite knowledge of the subject. Now, however, it is a clearly defined fact that there are three distinct species of the genus *Tinea*, or wool-destroying moths, which the housekeeper must contend against. The moths *Tinea vestianella*, common clothes moth; *Tinea tapetzella*, carpet moth; and *Tinea pellionella*, very closely resemble each other.

These tiny moth millers, though not destructive, are rightly viewed with anxiety and dread; for they are not only one of the most insinuating of insect pests, forcing their way into trunks, drawers, and the folds of garments where it would seem impossible for any insect to enter, but every female will deposit from 20 to 100 eggs, which within one week's time will have hatched into white, soft-body larvæ or worms, ready to make sad havoc with our woolen possessions.

Once out of the egg, the larva begins to feed and build a case around itself from the hairs and fragments of fur or cloth within its reach, binding them together with threads of the softest silk, secreted from glands in the head. The thread-bare spots often seen in moth-infested garments when actual holes have not yet appeared, are produced by this clipping of hair for its case. When the habitation is completed, the worm turns its attention to feeding, and the work of destruction goes on at a surprising rate. The case is very small at first, even less than one eighth of an inch long, and this original house is never left by the worm, which enlarges it in both size and length to accommodate its own growth, and drags it along as it moves away to new feeding grounds. In about forty-six days the worm reaches its full growth, and is ready to take up its house (which is now a full-sized cocoon) and walk, or rather crawl, into some still more secluded place, as crevices of the walls, cracks in the floor, or dark corners, where it remains torpid until the following spring, when it is transformed into a pupa, and soon emerges as a tiny moth miller, ready to commence the round of life outlined above.

The carpet and fur moths, which closely resemble the above-described clothes moth, are produced in the same way from the eggs of a tiny moth miller, and the first-mentioned species will eat as voraciously in midwinter as in summer, when carpeted floors are kept continually warm.

Camphor, cayenne, tobacco, naphthaline, and other similar odorants, are only slightly repellant to moth millers, and have no effect whatever upon the eggs or larvæ. But benzine, or a mixture of one gallon of benzine and one ounce of best carbolic acid, is sure death to either eggs or larvæ; but this preparation cannot be used on delicate fabrics, and from its inflammable character, must be employed with great caution in rooms or smaller receptacles of clothing. A hand atomizer, or ordinary throat spray, is the most convenient means of throwing it into corners, cracks, and crevices, but fighting the moth millers is by far the most efficacious. The fumes of burning camphor-gum or sulphur will suffocate the latter; and though it is a disagreeable operation, it is so effectual that every room in which one is seen, or which they have been known to frequent in previous years, should be occasionally fumigated, especially during April, May, and June.

Whether or not moths germinate from animal stains and fatty matter, as the ancients claimed, they certainly prefer soiled garments to clean ones. The first step, then, toward insuring the safety of garments that are to be packed away, is thoroughly to beat out all the dust, turn the pockets inside out, and clean them with benzine if necessary. Scrutinize closely to see if any eggs have already been deposited upon them, but as they are hardly perceptible to the naked eye, being mere white specks, not larger than a pinhead, do not trust to looking, but thoroughly beat the garment inside and out, and allow it to hang in the sun's rays for several hours. The moth miller abhors sunlight, and if any are concealed within its folds, they will thus be driven out.

Well-made pasteboard or wooden boxes, relined every year with newspaper, the latter so thoroughly lapped and firmly pasted together at the seams that the tiniest moth miller cannot possibly force an entrance (remember these parent moths never gnaw), or bags of various sizes made of seersucker and stitched with double seams, are much safer receptacles of clothing than trunks or drawers, and fully equal to cedar chests or expensive moth-proof bags. For if clothing is put away clean and absolutely free from moth eggs and safely protected from moth millers, all odorants and so-called moth preventives are perfectly useless; the only utility of any of these

agents lies in their odor being repellant to the millers. After a garment has been thoroughly cleaned, beaten, and aired, as directed above, place it in one of these bags, tie the top of the latter firmly together with tape, and let it remain undisturbed for five days. Then carefully inspect it for three days in succession, and if no eggs have developed into larvæ, you may safely conclude that none are concealed in the folds, and can pack it away in a box or bag as preferred. When the former is used, strips of paper should be firmly pasted over the joining of the cover and box proper, and one may then rest assured that his garments are as well protected as though every moth-preventive in existence had been placed in the box.

DOROTHY'S MUST N'TS.

I'm sick of "must n'ts," said Dorothy D.,
Sick of "must n'ts" as I can be.

From early morn till close of day
I hear a "must n't" and never a "may."
It's "You must n't lie there like a sleepy head,"
And "You must n't sit up when it's time for bed;"
"You must n't cry when I comb your curls;"
"You must n't play with those noisy girls;"
"You must n't be silent when spoken to;"
"You must n't chatter as parrots do;"
"You must n't be pert and you must n't be proud;"
"You must n't giggle or laugh aloud;"
"You must n't rumple your nice clean dress;"
"You must n't nod in place of a yes."

So all day long the "must n'ts" go,
Till I dream at night of an endless row
Of goblin "must n'ts" with great big eyes
That stare at me in shocked surprise.

O! I hope I shall live to see the day
When some one will say to me, "Dear, you may;"
For I'm sick of "must n'ts" said Dorothy D.;
Sick of "must n'ts" as I can be.

— *Ella Wheeler Wilcox.*

THE CRINOLINE FOLLY.

In an article in the May number of the *Cosmopolitan*, Helen Gilbert Ecob presents an able criticism of the threatened reign of crinoline in the near future. After a brief account of the history of the hoopskirt from the time of Francis I, she closes her letter with the following very practical and sensible paragraphs; —

"The ancestry of crinoline proves that it is the register of bad taste and accompanied by excesses in other departments of dress. It co-exists with periods of extravagance, when a privileged and reckless class has kept its power at the expense of popular rights. This same class will bid the fashion welcome to America to-day. The women whose luxurious taste debauches the market with an artificial trade; the women who do not recognize a fellow-being not in their set; the women who trick out their tables in ribbons and shaded candelabras for their afternoon receptions; the women who devote themselves to the 'petits reins' of social life; the women who have plenty of money for dinners, at twelve dollars per cover, but no money for education and charitable work,— these are they who will be the first to inflate their petticoats.

"We poor reformers helplessly denounce the crinoline fashion, on the 'horridly sensible' grounds of health and reason. Women are already overburdened by the weight of their garments. This fashion will increase the circumference of our skirts at least four yards. This additional material in gowns and petticoats, together with the weight of the crinoline, pivots on the most delicate organs of the body. Every passing breeze acts on the balloon skirt, as the wind acts on the sails of a boat, and the female pedestrian must actually carry many additional pounds of additional pressure. Then, the alternate motion of the legs in walking, the tilting of the hoop as it comes in contact with passing objects, keeps a current of air constantly rushing up to fill the vacuum, and thus exposes the lower body to drafts and chills.

"The hoop skirt is ugly because it plays tricks with the human figure. To inflate a skirt which should follow the line of the leg, to squeeze in a waist which should be ample, is bad art; for art honors God and reverences nature. Everything which alters the plan of the Creator and his design for the human body, is practical atheism. These excesses in fashion debauch the taste and depreciate the powers of the critical faculty. They are to dress what excess and crudity of color are in painting, or theatrical poses are in sculpture. We are laying out vast parks and erecting costly buildings, not only to gratify our love for the beautiful, but to educate and elevate the masses. We reason that the sight of these things makes men better. Art, being divine in its principles, must lead to the good, the true, and the beautiful. By the same logic, woman's dress, always violating the principles of art, debases public taste, and insensibly lowers the standard of public morals.

"When women persist in wearing a costume ridiculous and ugly, thus exposing womanhood to

vulgar witicism and jest, they bring dishonor upon the sex. Worse than this, these insane fashions actually vitiate character; for to do a senseless thing debauches the mind.

"The public demands that the movement in behalf of rational dress be sugar-coated with beauty. We are told that rational dress will never be adopted, unless it is made attractive. Surely, the reformer, in her wildest dreams, has never conceived anything more hideous and ugly than the fashions of '93. Sleeves big enough to accommodate a skye-terrier; capes piled Pelion on Ossa; hats bristling with stiff ribbons, feathers, and flowers, make our streets look like animated brush heaps. The picture will be complete if the hoop skirt prevails."

IRONING DAY.— Iron the starched clothes first, then the bulky articles. The hand will become tired in time, and if the light pieces were taken first, there would be no strength or spirit left to attack the rest. The secret of rapid and successful ironing is to have the clothes thoroughly dampened and the irons very hot. The dampness prevents scorching, and with the hot iron one can make every pass tell and do away with that muscle-wearying and clothes-destroying rub, rub, rub, which is necessary to produce even an unsatisfactory result with dry clothes and chilled irons.

IN CASE OF FIRE.— Too many persons perish unnecessarily from being overpowered by smoke, in fires. A simple protection, like that prescribed below, ought to be in readiness near every sleeper. This is what a woman says in the *Helper:* "For years I have never slept without seeing that a couple of silk handkerchiefs hung near my toilet stand, and that the bowl was half full of water. When I was a young woman, not out of my teens, I was in a hotel which took fire. I should have suffocated if my uncle, with whom I was traveling, had not thrown a wet silk handkerchief over my face. Thus protected, I followed him through the hall filled with choking smoke, and down the stairs to safety. I have taught the practice to my children, and it has become a habit with us all. You want good big ones, and they must be wetted thoroughly; then you may, if forced to do so, endure the thickest smoke for a considerable time.— *The Sanitary Era.*

FASHIONABLE SWEEPERS.— A prominent physician, who gives close attention to bacteriological study, says: "Lately the long dress trains worn in the streets by our ladies, suggest another way to carry tubercle and other bacilli into our houses. In walking along our streets, we constantly see dresses wipe up portions of sputum from the pavements. From one of these dresses, dragged over the streets a few times, I was able to demonstrate the presence of seven tubercle bacilli on an inch microscopic slide on which a little dirt off a dress was dusted. Knowing, therefore, that these long dresses have dried tuberculous sputum on them for the maids to dust off in our ladies' dressing-rooms, most of which are poorly ventilated, we can quite understand how a sufficient number of bacilli can be collected in small compartments to an extent dangerous to at least those predisposed to tuberculosis."— *Boston Journal of Health.*

SEASONABLE RECIPES.

EGG PLANT.— The egg plant, a vegetable indigenous to the East Indies, is somewhat allied in character to the tomato. In shape, it resembles an egg, from which fact it doubtless derives its name. It ranks low in nutritive value. When fresh, the plant is firm and has a smooth skin.

RECIPES.

Scalloped Egg Plant.— Pare a fresh egg plant. If large, divide in quarters, if small, in halves, and put to cook in boiling water. Cook until it can be easily pierced with a straw, and drain in a colander. Turn into a hot dish, and beat with a silver fork until finely broken. Measure the egg plant, and add to it an equal quantity of grated bread crumbs, a little salt, and a tablespoonful of thick sweet cream. Lastly, add one well-beaten egg. Put in an earthen pudding dish, and brown in the oven until the egg is set, and the whole is heated throughout, but not dry.

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

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

A SURGICAL HAND.— Mr. Frederick Treves, an eminent English surgeon connected with the London Hospital, in calling attention to the great mortality following operations upon drunkards, even of persons who consider themselves moderate drinkers, incidentally mentions the importance to the surgeon of cultivating a "surgical hand." He insists that the surgeon who would have a steady hand must avoid all irregular modes of living, and especially the use of alcohol in so-called moderate quantities, and the use of tobacco. We are glad to see so eminent a physician as Dr. Treves speaking plainly on this subject. The use of tobacco is far too frequent among physicians. No man can fulfill his duties as a physician so well while addicted to the use of tobacco as he might do if free from this habit. Indeed nothing could be more surprising than the frequency with which tobacco is used by medical men, who are so well aware of its toxic properties, and of the damaging influence upon the human system of any drug when habitually used.

WORLD'S FAIR. — The World's Fair is at last getting pretty nearly ready for inspection. Hundreds of thousands of people have already visited the Fair, but thus far, all who have looked at the great show have found it to be in a very incomplete state. However, each day is bringing it nearer to completion, and soon the most magnificent exhibition the world has ever seen will be complete.

Not the least interesting among the varied features presented by the Fair, are the numerous exhibits relating more or less directly to health; healthful garments, health foods, healthful homes, sanitary appliances in great profusion, and the means of rendering life safe and comfortable, in endless variety, are exhibited in a state of perfection probably never before reached in the history of the human race. Everybody ought to go to the Fair. It is a great object-lesson, not to be simply gazed at, but to be carefully and earnestly studied.

Perhaps one of the most interesting features of the Fair is the Midway Plaisance series of exhibitions. One can see there the native of Dahomey in his primitive hut, with the burly Amazons on parade, the Japanese, the Feejee islanders, the natives of Lapland, the Esquimaux, the Bedouins of the Arabian desert, the Soudanese, and the people of various other countries, living in their native style, in encampments or villages, pursuing their native occupations.

The present is a good season for visiting the Fair, before the extreme heat of midsummer arrives, and doubtless a great share of those who habitually take summer vacations will spend their vacation at the Fair within the next two months. An ample supply of pure water is furnished upon the ground, so that there need be no fear of contracting cholera nor any other disease, provided one will avoid patronizing the numerous ice-cream stands, and the beer and wine gardens, which are quite too conspicuously numerous upon the grounds.

STERILIZED BUTTER. — Probably it is not generally known that in first-class Danish dairies, cream is always sterilized before it is churned. By this process, all germs are destroyed. It is doubtless this fact which gives to the Danish butter its pre-eminence above all other brands of butter offered in foreign markets. Danish butter is sold in all parts of the world. We have seen it offered in cans in Mexico, and it is sold in many South American cities as well as in the cities of continental Europe. There is one practice, however, in Danish dairies which we cannot recommend: it is the inoculation of milk with pure cultures of bacteria, which produce a peculiar fermentation, by means of which the butter acquires a special flavor. It is perhaps not generally known

that the flavor of butter is due largely to the germs which it contains, perhaps more largely than upon the grasses upon which the cattle feed.

Several years ago, an investigator connected with the Connecticut State Experimental Station, found more than twenty different kinds of germs of milk, each of which possessed its own peculiar characteristics and produced its own special flavoring material. One produced a substance having an odor of violets; another an odor of new-mown hay; another the flavor of the barn-yard; still another produced an odor of pig-sty, and that of another the odor of a chicken-coop. Sterilized cream inoculated with either of these microbes would soon come to possess a characteristic flavor. No possible health advantage could arise from such a practice, and it certainly is not to be commended. However, it may be said in defence of this practice, that the microbes by which the peculiar fermentation valued by the Danish butter makers is produced, are not dangerous to health, and that the odorous substances to which they give rise are not poisonous in character.

KEELEY CURE OF INEBRIETY. — Within the last few months, several cases have come to our notice in which the Keeley Cure has resulted in chronic invalidism. Within a few days, a gentleman consulted us who placed himself under the care of Dr. Keeley more than a year ago for the liquor habit. Although his case could not be called a bad one, for his addiction to the drink habit was not so great as to disable him from his business, the patient's health seems to have been almost entirely ruined by the poisonous influence of the drugs to which he was subjected in undergoing the "cure."

Recently a bill was brought before the Maine Legislature which proposed that the courts should send drunkards in Maine to the Keeley Cure Institute, at the expense of the State. Gen. Neal Dow very sensibly opposed the bill, asserting that "the expenditure would be of no benefit to those who have not backbone enough to stick to their determination." This states the fact precisely as it is. The Keeley Cure makes the drunkard so sick that he loses his appetite for everything, including whisky. The impression is made upon his mind that if he takes whisky, it will make him sick, and so long as he believes that to be the case, he is safe; but as soon as he discovers that he has been deluded, the spell is broken. This Keeley Cure is simply a sort of mind-cure; it renders the patient unable to drink whisky temporarily, and assures him that he can never take it again without being sickened by it. So long as he believes this, he is reformed, but no longer.

DRUGS AND KIDNEY DISEASE. — Probably the majority of people are not aware of the fact that the medicines taken into the stomach must be eliminated through the excretory organs, and chiefly through the kidneys. Many drugs which are not at all unpalatable, and which can be swallowed easily in considerable doses and without disturbing the stomach, are extremely irritating to the kidneys, and much mischief is done to these important organs when they are required to eliminate, day after day, the doses of poisons swallowed with the supposition that they will somehow cure a chronic cough, a disordered digestion, or a torpid liver. The continued use of arsenic for a skin disease, iodide of potash or mercury for some constitutional malady, or of simple chlorate of potash for a throat or bronchial affection, may be the means of setting up an incurable kidney disease. The last named drug is perhaps particularly dangerous, because commonly regarded as harmless. It is extremely irritating to the kidneys, as well as depressing to the heart, and many persons have doubtless been greatly injured by its frequent and long continued use.

READY-MADE CLOTHING A SOURCE OF CONTAGION. — Last year, a committee was appointed by the House of Representatives to investigate the "sweating system," as practiced in the United States. From the report of this committee, it appears that a considerable portion of the ready-made clothing manufactured in the large cities, is made up in families where all the members of the family, from the grandmother down to the four-year-old, take part in the work, working, eating, and sleeping all in the same room, and often in conditions the most filthy and unsanitary. Dr. Daniel, a visiting physician connected with the New York Infirmary for Women and Children, reported that she had often seen children as young as four years of age sewing on buttons, and that the garments in process of making were frequently found "on the same bed with a child sick with scarlet fever." Is it not possible that this may be one of the sources of unexplained outbreaks of diphtheria and scarlet fever?

THE VEGETARIAN CONGRESS. — The Vegetarian Congress was a success. The Congress was conducted under the auspices of the Vegetarian Alliance, an English association which was represented by Miss Yates, the very able and enthusiastic English bread re-

former. Miss Yates has done more than perhaps any one else to introduce the use of wholesome bread in England, and will remain a little time in this country, lecturing upon her favorite themes. Mr. Clubb, the President of the American Vegetarian Association, and Mr. William E. A. Axon, Honorable Secretary of the English Vegetarian Society, we believe the oldest vegetarian society in existence, together with many other prominent vegetarians, were present, and took a leading part in the meeting.

COLOR BLINDNESS AND TOBACCO USING.— Investigations of color blindness in various countries have shown that in all civilized countries there are to be found, on an average, four color-blind persons in every one hundred men, but only one who is color blind among five hundred women. It thus appears that color blindness is twenty times as frequent among men as among women. No reason has been assigned for this, except the use of tobacco. Tobacco using has been recognized as a common cause of eye defects of various kinds, among the most frequent of which is color blindness. Color blindness is, in fact, the first symptom of tobacco amaurosis. Color blindness is found to exist among North American Indians in the proportion of less than one per cent. The use of tobacco must be condemned, on every ground of healthy living, as a source of race-deterioration.

THE CAUSE OF SLEEPING AND WAKING. — Bouchard, an eminent French professor, has found that there are two poisons produced in the system, one when we are awake, and one when we are asleep. The poison which is produced during the day is a narcotic. This poison can be obtained from the secretions, and if injected into an animal, it will narcotize the animal, and will put him to sleep as quickly as would a dose of opium. This poison accumulates in the body during the day in sufficient quantity to narcotize the system, so the person cannot keep awake. It puts him to sleep as surely as opium would.

The other poison is formed in the body during sleep, and this poison, if injected into the body of an animal, will cause it to have convulsions, and it will finally die from the effects of the poison. This convulsive poison, the professor finds, accumulates in the body during the night, until it reaches such a quantity that it sets the muscles to twitching and jerking, and the hands and arms to turning, till the person finally wakes up.

Children sleep quietly at first, but as the influence of the narcotic poison wears off, they sleep less soundly, and soon they are wide awake. This, according to the theory of Prof. Bouchard, is because of an accumulation of this convulsive substance in the body. That is what makes one feel so elastic in the morning. But by and by this substance is used up, and the narcotic substance begins to accumulate, and it keeps on accumulating until it causes the person to fall asleep again.

This is the only satisfactory theory of sleeping and waking that I have ever seen, and experimental researches confirm it.

CHEESE.— The old rhyme,

> "Cheese is a mighty elf,
> Digesting all things but itself."

is an expression of a belief that many entertain, but for which there is no scientific foundation. There might be some cases in which cheese, although itself hard of digestion, might aid in the process of digestion by acting as a germ-killer. There might be destructive germs in the stomach and bowels which could not stand the effect of contact with strong cheese. But can we know when such a condition exists, or that the germs present are of a kind to be killed by such means? At best it would seem that this might be a case in which the cure might be worse than the disease.

It is not possible for cheese to be a wholesome article of food under any circumstances. It is *decaying* milk, and might be so called as justly as the term is ever applied to meat. It swarms with microbes, and is a hatching place for the eggs of flies, which produce skippers, a species of maggots.

FOOD ADULTERATION.— According to the *National Medical Review*, recent researches made by United States officers indicate that one seventh of the entire food supply of the country is adulterated. If this statement is intended to include such food as corn, wheat, oats, potatoes, and fresh fruits, we should certainly question its accuracy, but if it relates to manufactured food products alone, it is unquestionably correct.

DANGER IN FILTERS.— Dujardin-Beaumetz, in some remarks before the Society of Therapeutics of Paris, recently called attention to the danger of reliance upon filters as a source of pure drinking water. He declares that even the best filters are of no use whatever, and emphasizes the importance of boiling all drinking water as the only means of safety against germs. Sometimes even new filters become soiled in time. If water is quite foul, the best filter, what is

known as the Pasteur, becomes contaminated in a few weeks, requiring that the tubes be thoroughly cleaned and sterilized. Even a new filter may have a cracked tube, or a tube may at any time become cracked, thus allowing germs to pass through in great quantities. The lesson that everybody should learn is, that all natural water contains germs, and may contain, under conditions which are always possible, dangerous and deadly germs. The only safety is to be found in using only boiled water, especially in cities and thickly settled country districts, and in cholera times.

AGAINST TOBACCO.— We are glad to notice a growing repugnance to the use of tobacco in all forms. A contemporary recently published several items bearing on this question. One of them states that but 16 out of the 134 students of Amherst College use tobacco. Another says that all the boys in the Fremont, Neb., High School have signed a pledge against the use of tobacco in any form. Delaware has enacted a law to prohibit the sale of cigarettes to boys under the age of seventeen.

CHOLERA GERMS IN MILK AND BUTTER.— It is well known that each particular germ requires its special soil and conditions of life. Not all germs will grow in the same soil and in conditions which are identical. It is a question of great practical interest, and one which has often been asked,— whether the cholera germ will thrive in milk, which, as is well known, is a favorite soil for the germ of typhoid fever. It may not be generally known that this question was settled by Heim eight or nine years ago, who showed that the cholera germ thrives well in milk, and survives for a long time the ordinary processes of decomposition which occur in milk. The germ was also found in butter, and hence butter made from infected milk may be as dangerous as the milk itself, although butter not originally infected would be less likely than milk to become infected. Neither milk nor butter can scarcely be considered as suitable articles of food under the conditions which exist in civilized communities, unless they have been thoroughly sterilized by heating. Danish, French, and German butter-makers discovered the secret that butter with good keeping properties and the best flavor could be made without killing the germs which milk always contains in abundance as it comes from the dairy. This discovery was made long before the bacteriologists had explained the phenomena of fermentation and putrefaction by the study of the microbes upon which these processes depend. From time immemorial, the German house-wife has boiled her milk before setting it. The Danish dairyman carefully sterilizes his milk by steam. The French housewife boils the cream before she churns it, and makes butter which will keep several days without salt, an ingredient which is never found in French butter. Infectious butter and germ-laden milk are responsible for a great many cases of acute and chronic stomach disorder.

MICROBES IN THE MOUTH.— A French scientist has recently been making investigations in regard to the microbes found in the mouth, and he finds that all the microbes that affect the body may be found in the mouth. He found some forty or fifty different kinds of microbes in the mouth,— those of diphtheria, pneumonia, tonsilitis, consumption, etc.,— and many more are to be found along the alimentary canal. One writer has called the alimentary canal the "Paradise of Microbes."

The cause of this congregation of microbes in the mouth and alimentary canal is found in the fact that such great numbers of them are eaten with the food which people allow themselves to consume,—"high meats," tender beef, butter, sour bread, etc. The American people are called a nation of dyspeptics, and the great cause of this condition is the great number of microbes that find their way to the alimentary canal. Probably there is no country in the world, except Germany, where Limburger cheese is used, whose inhabitants swallow so many microbes as this country.

Every one who has indigestion or frequent attacks of sick-headache should keep microbes out of his stomach. It is true that they can be killed by swallowing some antiseptic, such as chloroform, hydrochloric acid, sulphur, charcoal, a solution of bismuth, or some other decoction ; but how much better it is not to take them into the system at all, by not taking into the alimentary canal foods requiring us to resort to such remedies ! how much better to take aseptic foods !

FAMINE BREAD.— During the famine in Russia last year, the natives of Samara, having no other food, contrived to manufacture a sort of bread from chenopodium (pig-weed) seeds. The bread was brown as peat, and as brittle, and Prof. Virchow, who made an examination of it, thought it very unfit for human food, but on investigation it was found to be more nutritious than rye bread, containing nearly 12 per cent of albumen, about 4 per cent of fat, and over 36 per cent of starch. The analysis showed this food to possess a high nutritive value.

THE CAUSE AND CURE OF WRINKLES.

THERE are two causes of wrinkles. One is the action of the muscles under the skin and attached to it. There are almost innumerable muscles directly under the skin in the human face, and the action of these gives to the face its expression. In the hand, the muscles are also attached to the skin, but in other parts of the body the muscles are not attached to the skin, so the skin does not wrinkle on contraction of the muscles. These little muscles of the face are very interesting to study. One set is used to draw the corners of the mouth down, another to draw them up, and make the face look smiling and pleasant. Another lifts the upper lip and the nose, and makes a person look scornful. Thus there are muscles to make us express every passing emotion of the heart and mind. They put into the face the picture of the mind, so whatever we are thinking shows in our faces. It is quite impossible to prevent this. If one is thinking angry thoughts, he will show it in his face. If he is sad and sorrowful, you can read it in his face. When a man is sad, he is said to be "down in the mouth." This is scientifically and physiologically accurate; just pull down the corners of your mouth, and see how sad you look; then raise them, and you look happy right away.

But what makes wrinkles? Suppose a man is full of care and anxiety. When he is thinking hard, he knits his brows, — the natural expression of care and anxiety. Hard, close thinking upon any perplexing subject draws up the muscles of the face; and if a man has much of this hard thinking to do, these muscles, from constant use, become too strong in proportion to the other muscles, and so hold the face in that position; the man cannot straighten his face. So the wrinkles stay there.

There are always two sets of muscles, one to perform a certain action, and the other to counteract it. So when the muscles of contraction act the strongest, the muscles of expansion cannot counteract them, and the person has permanent wrinkles. The muscles which knit the brows are stronger in most persons than those which keep the brows straight, because they are used the most.

The same is true with other muscles of the body. You will notice laborers, carpenters, etc., elbowing their way along the street with their arms bent, because the flexor muscles have been used so much more than the extensors that they have become too strong for them, and keep the arms drawn up.

While a person is young, these wrinkles are easily smoothed out, but after he gets to be forty years old, it is not so easy, and the wrinkles are apt to stay by him all the rest of his life. These wrinkles reveal or are the history of a man's life for years back. If that life has been full of care, the vertical wrinkles will show it. If it has been a careless life, the wrinkles will show that. A person without wrinkles would be without expression — a blank wall.

There are good wrinkles and bad wrinkles. If you have the right kind of wrinkles, you do not want to get rid of them; but if you have the other kind, get rid of them as quickly as you can. Suppose you have vertical wrinkles in your forehead. They make you look cross, and you want to get rid of them. The only way of curing vertical wrinkles is to begin making horizontal wrinkles. And the way to cultivate horizontal wrinkles is to think pleasant thoughts. Cultivate a habit of thinking on pleasant themes, and the wrinkles which indicate unpleasant, irascible thoughts will gradually smooth out and disappear.

Facial massage is the best mechanical way to get rid of wrinkles. Massage applied to the muscles of the face will have the same effect as when applied to any other part of the body,— it will cause the weak muscles to grow, and after a time they will be able

to equal in strength the stronger muscles. Wrinkles are like folds in a cloth. As you get rid of them by straightening out the cloth, so you can get rid of wrinkles in the skin. When massage is applied for this purpose, it must be applied to those muscles which draw the skin away from the wrinkles, and by strengthening them, stretch out the wrinkles.

This form of massage is coming to be very popular among the class who have leisure time to give to such things. It is as good as a tonic for beautifying the skin, as well as for smoothing out the wrinkles. Even quite old ladies can bring back the bloom of early womanhood by the simple use of massage in a skillful way.

DANDRUFF. — Dandruff is simply a dry catarrh of the scalp. It is a condition in which the cells of the skin are thrown off too profusely. The skin is composed of three layers, — the true skin, that next to the muscles; the pigment layer; and the dead cells, or scarf skin, on the outside. With a sharp knife you can scrape off the outer layer, in the form of little white scales. It may not be generally known that man is an animal with scales like a fish, but if you will examine this white scurf with the microscope, you will find that it is composed of scales similar to those of a fish. And these extend all over the body.

When one takes a Turkish bath, these scales are softened up, and are rubbed off in the shampoo, so that, to a certain extent, the person is skinned. These scales are rubbed off by the clothing, and come in contact with other bodies. This process is going on all the time, and those parts of the body which are most exposed and have the most attrition with external bodies, are kept the most thoroughly cleansed and free from this condition of dandruff. You will never find scales in the palm of the hand, because frequent contact with various objects keeps the dead scales rubbed off, and the palm free.

But on the head, where the hair prevents this exposure of the skin directly to contact with outside bodies, these scales are retained in great numbers. Especially is this so when the head is covered much of the time by a hat or bonnet. The scales are thrown off, but they are held about the roots of the hair, and in this way one may have an accumulation of dandruff even when the skin is healthy. In this case, the remedy consists in brushing the scalp thoroughly and frequently. Most people make the mistake of brushing the *hair;* it is not the hair that needs to be brushed, but the scalp. This is very important for the health of the scalp. You will notice that the good barber puts aside the hair with his finger, and follows his finger with the brush, until he has brushed the entire scalp in this way. By this means the scalp is thoroughly cleaned. The scalp should be brushed in this way at least three or four times a week, in order to keep it free from dandruff, or from those scales which are constantly being thrown off.

A neglect to remove these scales from the body produces a very unhealthy and disagreeable state of things, in other parts of the body than the scalp. It sometimes causes itching of the arms and legs, particularly about the knees and shins, where the scales have a tendency to accumulate, if one does not bathe frequently.

Every hair on the body grows from a little pocket in the skin; and when these little scales are not promptly removed, they get over these pockets, and then the hair, in attempting to grow, is forced to lift the scale up. This is what causes the itching that is so disagreeable.

Equal parts of alcohol and castor oil, applied after a thorough shampoo with good soap and water, is the best remedy for dandruff.

WHAT IS THE GOLD CURE FOR DRUNKENNESS? — We have frequently been asked this question, and, in answer, quote the following from an article by Dr. Chapman in a recent number of the Chicago *Medical Recorder:* —

"Being determined to find out something definite about the matter, early last spring I obtained a position as physician to a gold-cure sanitarium at a distance from the city, and have carefully studied the cure up to within a few days ago. As I have had personal experience in treating about three hundred cases, both in and out of the aforesaid sanitarium, I feel that the few remarks I can make may be of interest to you. And first, I am prepared to give you the formulary of the gold treatment, which is almost, if not quite, the same in all these institutes. It is as follows: —

"No. 1. — Tonic. Known in the institutes as the 'dope': —

℞.	Auriiet sodii chlorid	12 gr.
	Strychniniæ nitr	1 gr.
	Atropinæ sulph	¼ gr.
	Ammonii muriat	6 gr.
	Aloin	1 gr.
	Hydrastinin	2 gr.
	Glycerini	1 oz.

Ext. fl. cinchon. comp..... 3 oz.
Ext. fl. coca erythrox ..... 1 oz.
Aquæ dest ..... 1 oz.
M.

S.—1 dram at 7, 9, 11 A. M., at 1, 3, 5, 7, 9 P. M.

"No. 2.—The injection known in the institutes as "shot": —

℞. Strychniæ nitr..... $9\frac{1}{10}$ gr.
Aquæ dest .....ad. 4 oz.
Potass. permangan. q. s. to color.
M.

S.—Begin with gtt. 5, which equal $\frac{1}{10}$ gr., and increase one drop at each injection, until the physiological effect is produced. Four hypodermic injections to be given daily beginning at 8 A. M., then at 12 M., 4 P. M., and 8 P. M.

"No. 3.—Used with No. 2: —

℞ Aurii et sodii chlorid ..... $2\frac{1}{2}$ gr.
Aquæ dest .....ad. 1 oz.
M.

S.—Gtt. 3, every four hours, in combination with the strychnine solution for the first four days.

"This last prescription is used only for the moral effect, which is produced in the following manner: Five drops of the strychnine solution are drawn into the syringe, and then three drops of the gold solution are drawn in and mixed. This produces a golden yellow color, to which attention is called; and the patient is further assured as to the reality of the presence of the gold, by the stain left on the skin after the hypodermatic needle has been removed.

"In almost, if not in every instance, a positive disgust is produced in the following manner: The patient is given a drink of whisky, then the so-called bichloride of gold solution — really a solution of strychnine — is injected in his arm, but at the same time, and without his knowledge, he receives a one-tenth grain of apomorphine. It takes but a comparatively short time for the emetic to produce its effects. More or less violent emesis is produced; and the patient, soon associating the in-taking of the whisky with the subsequent disagreeable and sickening vomiting, acquires a positive disgust for the liquor, and is not able to keep any on his stomach. Now he acknowledges the wonderful power of the hypothetical gold compound, and surrenders unconditionally. He is converted, and from an unbelieving scoffer is changed into a disciple and supporter of the prophet.

"These are the cases that are the most widely advertised, and that have done the most good for the 'Keeley Institute' folks."

Treatment for Worms.—I have often been asked by mothers, "Doctor, what is a sure symptom of worms?" and I always reply, "There is only one sure symptom for worms, and that is — worms."

It is no sign of worms because a child grits its teeth or picks its nose. Symptoms of dyspepsia in children are often taken for symptoms of worms. A child may have indigestion even in its cradle. In many cases that is where the foundation has been laid for life-long dyspepsia. These diseases should not be treated with worm remedies.

Children may have different kinds of worms, and each kind should have a different mode of treatment. The best remedy for tape-worm is *pelleterine de tanret*, the active principle of the pomegranite root. For the cure of round worms (ascarides), give the child fluid extract of spigelia and senna, in equal parts, from one to four teaspoonfuls three times a day, according to the age of the child. The best remedy for thread worms is a solution of fluid extract of quassia. Add an ounce of the fluid extract to a quart of water. The large intestine should be filled with the solution, for the headquarters of the parasite is in the caecum.

Effects of Heat and Cold upon the Skin.—If your feet are easily chilled and you want them to get colder, bathe them frequently in warm water. There is nothing better for depleting vital energy than hot foot-baths. Another method of accomplishing the same result is to toast the feet over a coil, a register, or by a hot stove. The heat producing forces are diminished by the application of heat. When nature is trying to keep the feet warm, and then we apply artificial heat, nature becomes discouraged, and says, "There is no use of expending vital energy to keep the feet warm when they are warm enough without it." So if we keep ourselves warm perpetually by artificial heat, nature learns to neglect to supply heat herself.

If there is too much blood in the vessels, it can be diminished by the application of heat; on the other hand, if there is too little blood in any part of the body, the best way to increase it is by the application of cold water. For instance: If a person has a pale face, the best way to get more color in it is to wash in cold water. Cold produces a reaction by increasing the circulation, while heat produce a reaction in the opposite direction,—it diminishes the circulation. The application of heat warms the feet temporarily, but at the expense of vital energy, and the feet will be colder afterward. The application of heat is beneficial in cases of eczema or some kindred disease.

ANSWERS TO CORRESPONDENTS.

EARACHE.— A subscriber in North Dakota would like to know what treatment to give a child who has had earache which has left it partially deaf; and do you approve of syringing out the ear with warm water?

Ans.— The case should be placed in the hands of a good specialist in diseases of the ear. If there is a discharge from the ear, washing it out with hot water will do no harm.

ECZEMA.— Mrs. A. R. S., of Ind., is suffering with a very troublesome case of eczema in her hands, which is at times so bad that she is unable to dress or feed herself without assistance. She has consulted several leading physicians, and tried a great many remedies, but without material improvement.

Ans.— Chronic eczema often depends upon a disturbed condition of the stomach. Bouchard has shown that in one half the cases of eczema there is dilatation of the stomach. The simple treatment of the skin alone is rarely sufficient to effect a cure. The patient should visit the Sanitarium at Battle Creek, Mich. Cases of eczema may be cured by the use of proper remedies, but the cause of the disease should be removed.

NERVOUSNESS.— A subscriber in Minnesota asks what to do for nervousness. The sufferer is unable to keep still either sitting or standing; is troubled much by the little worries of life; cannot gain flesh, yet has a good appetite, and plenty of outdoor exercise.

Ans.— This patient is doubtless suffering from nervous dyspepsia, or neurasthenia. Ought to visit the Sanitarium at Battle Creek, Mich., if unable to receive proper treatment at home.

MASSAGE.— Mrs. M. J. S., of Ill., asks if massage is the only or the best cure for neurasthenia.

Ans.— Massage alone can scarcely be called a panacea for any malady. It is, however, an excellent remedy in cases of neurasthenia, and may be employed in connection with other remedies. It should not be forgotten that neurasthenia is not a disease, but merely a symptom. The cause of the symptom must be removed before it can be expected to disappear, no matter what remedy is used.

EXERCISE AFTER EATING.— Mrs. E. K. C., of N. Y., inquires if it is advisable to take exercise just after eating, and if not, how long should one rest before taking exercise?

Ans.— Most persons can take exercise immediately after eating. Feeble persons should rest for an hour or two, especially when the digestion is very much impaired, and when there is a soreness in the stomach or umbilicus.

WHAT IS THE MATTER?— A. D. W., of Minn., is anxious to know what is the trouble with their little baby. It has seemed to have a cold in the head for about two months, which interferes with its breathing. It is sometimes so bad that the child cannot breathe when lying down, and when nursing, the sweat will stand out all over its head.

Ans.— It would be impossible to tell without investigation. The case should be placed in the hands of a physician.

COATED TONGUE — PEPSIN.— R. K., of Wis., an invalid from dyspepsia for the last eight or nine years, asks the cause of a white coat on the tongue, and what pepsin you would recommend as most suitable to his case. He has had his digestion ruined by doping with medicine. Is now using Compound Oxygen. His tongue is coated white all the time. He has used your health foods for the past year, and has gained some in strength.

Ans.— The patient probably has a dilated stomach. Do not use pepsin. We make no use of pepsin.

HOT WATER DRINKING.— There are four classes of persons who should not drink large quantities of hot water. These are as follows: —

1. People who have irritability of the heart. Hot water will cause palpitation of the heart in such cases.
2. Persons with dilated stomachs.
3. Persons afflicted with "sour stomach."
4. Persons who have soreness of the stomach, or pain induced by light pressure.

These rules are not for those who take hot water simply to relieve thirst, but as a means of washing out the stomach. Hot water will relieve thirst better than cold water, and for that purpose is not to be condemned. But hot water is an excitant, and in cases in which irritation of the stomach exists, should be avoided.

RELIEF DEPARTMENT.

[THIS department has been organized in the interest of two classes: —

1. Young orphan children.
2. The worthy sick poor.

The purposes of this department, as regards these two classes, are as follows: —

1. To obtain intelligence respecting young and friendless orphan children, and to find suitable homes for them.

2. To obtain information respecting persons in indigent or very limited circumstances who are suffering from serious, though curable, maladies, but are unable to obtain the skilled medical attention which their cases may require, and to secure for them an opportunity to obtain relief by visiting the Sanitarium Hospital. The generous policy of the managers of the Medical and Surgical Sanitarium has provided in the Hospital connected with this institution a number of beds, in which suitable cases are treated without charge for the medical services rendered. Hundreds have already enjoyed the advantages of this beneficent work, and it is hoped that many thousands more may participate in these advantages. Cases belonging to either class may be reported in writing to the editor of this journal.

The following list contains the names and addresses of persons who have kindly consented to act as agents for us in this work, and who have been duly authorized to do so. Facts communicated to any of our local agents in person will be duly forwarded to us.

It should be plainly stated and clearly understood that neither orphan children nor sick persons should be sent to the Sanitarium or to Battle Creek with the expectation of being received by us, unless previous arrangement has been made by correspondence or otherwise; as it is not infrequently the case that our accommodations are filled to their utmost capacity, and hence additional cases cannot be received until special provision has been made.

Persons desiring further information concerning cases mentioned in this department, or wishing to present cases for notice in these columns, should address their communications to the editor, Dr. J. H. Kellogg, Battle Creek, Mich.]

THE names of our local agents are omitted this month so as to give more space for the presentation of cases needing immediate attention. We find that this part of the work is developing much more rapidly than we had anticipated. Homes have been offered for nearly all the little ones whose names have been mentioned in these columns, and the interest which has been aroused in the work that we have undertaken has been far beyond our expectation. For this reason we shall not be able to publish the list of agents regularly, but will do so now and then, as space will allow.

TEMPORARY HOMES.— It is often necessary to find temporary homes for children, while waiting for permanent homes. We are glad to announce that the following persons have volunteered to take such needy ones in case of emergency. We shall be glad to add to the list. All correspondence should be conducted through this office.

Mrs. E. L. Mc Cormick, Michigan.
Mrs. A. M. Osborn, ,,
Mrs. Anna Haysmer, ,,
J. Staines, ,,
John Wallace, ,,
N. A. Slife, ,,
D. D. Montgomery, ,,
Chester Hastings, ,,
Anthony Snyder, Michigan.
Henry Snyder, ,,
F. D. Snyder, ,,
Wm. Kirk, ,,
E. Van Essen, ,,
Dr. J. D. Dennis, ,,
Mrs. Prudie Worth, Wyoming.
James Dobbin, New York.
Mrs. E. L. Merry, Massachusetts.

PERMANENT HOMES FOR CHILDREN.—There are thousands of childless homes in the United States, where one or more children would be a blessing. It is the purpose of this department to find these homes, and also to find the little ones to fill them. There are thousands of such little ones within the territory in which this journal circulates, and we shall be glad to know about them, and to be instrumental in finding homes for them. The following persons are ready to receive children: —

Geo. W. Page, Arkansas.
Mrs. Emma L. Stanley, Colorado.
David Ferguson and wife, Illinois.
L. G. Hiatt, ,,
Fannie Allenderff, ,,
Mrs. Calista Gesler, Indiana.
Flo O. Hudleson, ,,
Mrs. E. Rodgers, ,,
W. G. Frame, Iowa.
W. Wood Bute, ,,
Mrs. J. M. Cox, ,,
James Hackett, Kansas.
Mr. Laman, ,,
G. S. Sweet, ,,
Mrs. B. P. Stebbins, ,,
Albert Brown, ,,
Joseph Leach, ,,
Mrs. K. V. Temple, Maine.
W. J. Dunscomb, "
Mrs. N. F. Riegg, Massachusetts.
Mrs. Amy Hallock, Michigan.
Mrs. Kate Carlisle, ,,
Mrs. Mary Pickell, ,,
N. H. Hammond, ,,
Elmer E. Brink, ,,
Ellen C. Jessup, ,,
Mrs. R. Pewers, ,,
Mrs. Cary Fish, ,,
Mrs. Wm. Kirk, ,,
F. H. Bosturck, ,,
L. M. Lawton, ,,
Norman Beal, ,,
L. Strickland, ,,
E. B. Adgate, ,,
D. J. Marvin, ,,
Mrs. Mosher, ,,
Miss Corgan, ,,
Mr. Rooney, ,,
Wm. Allen, ,,
Mr. Wilkin, ,,
A. B. Rice, ,,
Mrs. F. S. Hafford, ,,
Mrs. R. R. Wilson, ,,
A. H. May, ,,
Mrs. T. O. Lewis, ,,
Mrs. A. S. Godfrey, ,,
Mrs. Maria Pyke, ,,
C. E. Van Horn, ,,
Mrs. A. E. Benedict, ,,
T. H. Atkinson, ,,
Mr. and Mrs. Chas. Parish, ,,
Mrs. W. H. Parker, Minnesota.
Mrs. Scott Snyder, ,,
Mrs. R. E. Crane, Minnesota.
J. C. Kraushaar, ,,
Hans F Nelson, ,,
Miss Rose Lull, ,,
Lois Mathews, ,,
Thos. Griffin, ,,
Mrs. A. Remer, ,,
Harvey Luce, ,,
Mr. and Mrs. Wm. Perkins, ,,
Dr. J. G. Stair, Missouri.
Mrs. E. A. Rose, North Dakota.
Mrs. M. J. Post, ,,
W. R. Balsor, ,,
Mrs. P. S. Thompson, Nebraska.
Mrs. W. F. Jenkins, ,,
Mrs. M. I. Miner, ,,
Henry Shoephelt, ,,
A. Jones, ,,
Hans Johnson, ,,
Mrs. Elmira Dana, New York.
Mrs. Brooks, ,,
Mrs. M. J. Modill, Ontario.
Mrs. Lydia Strope, Ohio.
Mrs. B. B. Francis, ,,
Mrs. Mary J. Spencer, ,,
R. T. Clevenger, Oregon.
Maggie Potter, Pennsylvania.
Ezra Backus, ,,
Mr. Hough, ,,
Mrs. Geo. R. Sanderson, S. Dakota.
Mrs. M. A. Hanson, ,,
Mary A. Johnston, ,,
Martin B. Gibson, ,,
Ida C. Rockwell, ,,
C. A. Kenison, ,,
A. F. Leonard, ,,
John Leonard, ,,
Mrs. G. J. Link, ,,
R. S. Royce, ,,
J. B. Fassett, ,,
Mattie Rulaford, Washington.
R. P. Stewart, ,,
Mrs. W. A. White, ,,
H. M. Chesebro, Wisconsin.
Stephen Roese, ,,
N. B. Carter, ,,
N. Mack, ,,
Mrs. W. Kies, ,,
Mrs. A. M. Lindsley, Vermont.
Mrs. T. L. Morton, Virginia.
T. E. Bowen, West Virginia.
Mrs. J. A. Holbrook, Texas.

TWO MOTHERLESS BOYS (NOS. 115 AND 116).—A bereaved father in Pennsylvania asks that a home be found for his two motherless boys, aged five and six years. They are both nice looking boys, and said to be very intelligent, and good. The father expects to give his life to missionary work, and cannot maintain a home for them.

A WEE ONE (NO. 117).—A little baby in Michigan, only four weeks old, needs a good home with Christian people, who can take it and love it as their own. Some motherly heart will surely respond to this.

A SAD CASE (NO. 118).—A boy aged nine years, living in Michigan, has been bereft of a father's care, and his mother is blind, so he has been "neglected,"

the letter states, during the past two years. He needs to be under control, and will be a good boy under favorable circumstances. Will not some good missionary take him, and train him up for a good and useful life?

Two Motherless Bairns (Nos. 119 and 120).— Two of Christ's little ones are in sad need of a home where loving hands will help them and loving hearts defend them. They are four and five years of age, and live in Massachusetts. Both have blue eyes and light brown hair, and are very attractive. For three years they have been given only boarding-house care, and their guardian wants to find a home for them. He would like to have them together if possible.

Two Boys (Nos. 121 and 122) in Illinois are sadly in need of a home where they can be under good, kind government. Their father has recently deserted his family, and left the mother too feeble to look after her boys. They have received only harsh treatment from their father. Their ages are eleven and thirteen; the younger has gray eyes and brown hair, is quick and lively; the elder has black hair and eyes, and is sober and said to be of good disposition.

A Lonely Father asks for homes for two of his motherless children, two boys (Nos. 123 and 124), aged four and five years. They are bright, intelligent little Danes, and have been brought up so far in a good home, under the instruction of excellent Christian parents. The father is a day laborer, but will help in the support of the boys as far as he can. They live in Minnesota.

"Inasmuch." — Here comes a group of four little ones (Nos. 125, 126, 127, and 128). Their father is dead, and their mother's health is failing, so she sees it cannot be long that she can care for them. Who will open the door to them? Their ages are respectively, eleven, nine, five, and four. They have dark eyes and brown hair. They have always lived in Kansas, with their parents.

A Seven-Year-Old (No. 129.) — A little boy seven years old, in California, has lost his mother, and the father has given him to some aged people who do not feel able to bring him up right. He is of German parentage, with light hair and good health. Will not some one make a home for him?

Virgie Ellen (No. 130) is the name of a wee girlie in Indiana, only three months old. The mother is dead, and the father has no home in which to care for the babe. The little one has blue eyes and light hair, and though very small, weighing only nine pounds, is healthy. What a bright addition she would be to some childless home!

Two Brothers (Nos. 131 and 132), from Michigan, are in need of a home. One is five and the other ten years of age. Their mother died some two years ago, and the father is not able to care for them.

Two More Boys (Nos. 133 and 134) are in need of a home. These also live in Michigan. They are three and five years of age, have good health, with brown hair and eyes. Here is a good opportunity for doing missionary work in bringing up these children to be a blessing to the world. Who will undertake the task?

A Baby Boy (No. 135), only three months old, needs a home. He is a healthy child, and very pretty and quiet. He is being cared for by people in Michigan.

"One of the Least." — Word comes from West Virginia that a little colored baby there (No. 136) needs a home. Will not some Christian family be willing to take this little African waif to their heart and home?

CLOTHING FOR THE SICK.

The call for clothing of all kinds and the numerous offers to supply assistance of this sort, have led us to organize a Clothes Department to receive and properly distribute new or partly worn garments which can be utilized for the relief of the very poor. In connection with this work it is very important that a few points should be kept in mind and carefully observed: —

1. Clothes that are so badly worn that repairs will cost more in money or labor than the garment is worth, will of course be of no service. Garments that are old, though faded, or which may be easily repaired by sewing up seams, or made presentable by a few stitches judiciously taken in some point in which the fabric is nearly worn through, may be utilized to most excellent advantage. But garments so badly worn that they need extensive patching, or clothes which have become much soiled and grimmy by long use in some dirty occupation, should find their way to the rag bag instead of the missionary box.

2. Freight must always be prepaid. It costs as much to send 25 pounds or any amount less than 100 pounds as to send the full 100 pounds; consequently it would be well for those who think of sending clothes to be used in this department, to put their contributions together in one shipment, so as to get the benefit of the 100-pound rates. *We are obliged to ask that freight should be prepaid as a means of preventing loss to the work in the payment of freight upon useless packages.*

3. Clothes that have been worn by patients suffering from any contagious disease — such as typhoid fever, erysipelas, consumption, and skin disorders of all sorts, as well as scarlet fever, measles, mumps, diphtheria, and smallpox — should not be sent. Infected clothes may be rendered safe by disinfection, but we cannot trust to the proper disinfection of such garments by those sending them, who, in the majority of cases, are quite inexperienced in such work; neither should those who unpack the clothes be exposed to the risk of contamination while preparing them for disinfection at this end of the line. Such clothes should, as a rule, be destroyed. If they are not destroyed, almost infinite pains are required to render their use perfectly safe.

4. All articles received here are carefully assorted and classified, and are then placed as called for where they will do the most good.

LITERARY NOTICES.

AMONG the social, political, and economic problems discussed in the July *Arena*, are, "Our Foreign Policy," by W. D. McCrackan, A. M.; "Bimetallic Parity," by C. Vincent; "Women Wage-Earners in the West," by Helen Campbell; "The Money Question," by C. J. Buel; and "Pure Democracy versus Vicious Governmental Favoritism," by B. O. Flower. The Shakespeare-Bacon case calls forth carefully expressed opinions from many eminent thinkers. Rabbi Schindler contributes a paper on "Innocence at the Price of Ignorance," and Emil Blum, Ph. D., contributes a paper of great power on "Realism in German Literature."

The *Arena* is able, bright, and wide-awake. Its sympathies are always with the people, and one reading it feels that there is something more behind the magazine than a calculating business automaton.

Arena Publishing Co., Boston, Mass. Per annum, $5; single copies, 50 cts.

WE take pleasure in acknowledging the receipt of the Year Book of Albion College for 1892–3. It is a book of 183 pages, giving a history of the institution since its establishment in 1833 to the present time. Through many difficulties the college has steadily progressed upward, and now holds a high rank among the colleges of the land.

Sunbeams for the Little Folks is a child's paper recently come to our notice. It is dressed in a bright-colored cover, and is full of pictures. A kindergarten department has been added, which makes it attractive to the children. Two prize contests have been arranged for the purpose of increasing subscriptions. Sample copies may be had by addressing *Sunbeams for the Little Folks*, Cleveland, O.

"PHILLIPS BROOKS."— By the Rev. Arthur Brooks, D. D. Illustrated. 32mo, cloth, ornamental, 50 cents. In "Harper's Black and White" Series. Harper and Brothers, Franklin Square, New York.

The countless admirers of the distinguished Bishop, whose recent death called forth such widespread notice among all classes of people, will find in this book by the Bishop's brother the ablest and tenderest review of a noble life and its lofty aims.

IN a recent number of the *Cosmopolitan* a story was published, entitled "The House of the Dragons," which received wide criticism because of the importance of the life problems involved. A daughter of Bishop Potter, who was for some time connected with important mission work among the working girls of New York, has undertaken to reply, and discusses another side of the question in the July number. New York Office, Fifth Ave., Broadway and 25th St. $3 per year. Write for circulars concerning their new arrangements for giving scholarships to agents.

Good Housekeeping for July is a valuable number. It opens with a paper by Miss Parloa on marketing, especially with reference to the hot weather, and incidentally touching the question of precaution against choleraic diseases in the way of food. There are a large number of papers devoted to recipes and instructions for the household; making the home attractive, the use of flowers and fruits, and the enjoyment of nature's bounties in all their forms. There are numerous bits of choice original verse, stories, suggestions in house furnishing and fitting, etiquette lessons, music, puzzles, and all the host of things which go to make a publication prized and scanned by every member of the family. Published at $2 a year by Clark W. Bryan Company, Springfield, Mass.

THE bill of fare served up by the *Scribner's Magazine* for July is as follows: "The Life of the Merchant Sailor," by W. Clark Russell; "Personal Recollections of Two Visits to Gettysburg," by A. H. Nickerson; "Fulfilled," by Anna C. Bracket; "Foreground and Vista at the Fair," by W. Hamilton Gibson; "The Opinions of a Philosopher," by Robert Grant; "Musical Societies of the United States and their Representation at the World's Fair," by George P. Upton; "Trout Fishing in the Traun," by Henry Van Dyke; "A Pagan's Prayer," by Bliss Carman; "Aspects of Nature in the West Indies," by W. K. Brooks; and "Prevention of Pauperism," by Oscar Craig; besides other interesting articles and works of fiction.

ONE of the best papers that comes to our table is the *Christian Union*, a weekly family paper, containing 32 pages of solid reading matter. With its thoughtful articles on religion and the Bible, its concise statements of current topics and events, and its helpful words for the home, it is a paper worthy a place in every home in our land. $3 per year, payable in advance. Address, The Christian Union, Clinton Hall, Astor Place, New York.

PUBLISHERS' DEPARTMENT.

SANITARIUM PICNIC.—The picnic season at the Sanitarium Villa on Lake Goguac was opened on Wednesday, June 14, with as rare a day as is ever seen in June, and a company of some four hundred happy participants, gathered at the Sanitarium from all parts of the globe, there being present representatives from England, South Africa, Australia, New Zealand, and Alaska, and from nearly every State in the Union.

Addresses were made by Rev. S. H. King, of Juneau, Alaska, who, with his wife and two children, is stopping at the Sanitarium for a short time; Prof. Wm. A. E. Axon, F. R. S. L., of Manchester, Eng., one of the delegates to the Vegetarian Congress just held in Chicago; and Hon. S. M. Lovell, of Lockport, N. Y., who rendered some very humorous selections, much to the amusement of his auditors.

Dr. Mary Allen Wood added another gem to the treasury of the day by reading James Whitcomb Riley's "Knee-deep in June."

Music was furnished by the R. & H. band, at frequent intervals throughout the day. Mrs. Goodwillie, of Chicago, sang a charming song, and the Misses Nettie and Louise Hugos, of Pasadena, Cal., also favored us with some excellent selections, with piano and violin accompaniment.

The day was perfect, and under the delightful shade of full-leaved trees, the patients were grouped in picturesque loveliness. There were wheel chairs for those who needed them, rugs thrown on the grass for those who were too feeble to sit up long, and hammocks, swings, and easy chairs dotted the lawn everywhere; while at the left a lively game of lawn tennis was in progress. Dr. Kellogg rode out on his bicycle for an hour's recreation. Goguac has seldom seen a picnic so thoroughly enjoyable in all its details, and we trust the season so auspiciously opened will be equally gratifying to its close.

* * *

A MISSIONARY FROM INDIA.—Rev. C. P. Hard, of the Methodist denomination, who has spent many years in India in Christian missionary work, recently visited the Sanitarium, and while here made an earnest address. He spoke first of the condition of the native women and of caste prejudices, and then of theosophy, which he declares has now no hold in India, however much of a "fad" it may be in certain circles in America and Japan. To the native Christians he paid a grand tribute, for their faithfulness, their zeal, and their unselfish lives.

Mrs. Hard, who accompanies her husband, gave a lecture at a later date upon "The Women of India." Mrs. Hard was born in India, and is the daughter of an English army officer. From the date of her conversion to Christ in her youth, a yearning love filled her heart for the women of India, and she has spent her life among them, her father's official position giving her access to places where missionaries in general were not admitted. Mrs. Hard had quite a fine collection of idols and other Indian curios on exhibition.

* * *

MISSIONARIES FROM CHINA.—Rev. and Mrs. Geo. H. Hubbard, of Foochow, China, with their three pretty children, spent a short time in the Sanitarium on their way east. Mr. Hubbard gave two short addresses during his stay, and from his nine years' sojourn, was able to speak interestingly of this remarkable land and its inhabitants. In regard to the opium curse upon these people, he says that none of the native religions are doing anything toward putting down the traffic. The Christian missionaries

are, however, doing all they can both to free the victims who are enslaved by it, and to stop its sale. Some of the missionaries receive the poor opium victims into their chapels, and treat them by antidotal medication with very favorable results.

***

TAXING BICYCLES.— The assessors of the city of Lowell, Mass., and, we are informed, those of the city of Paris also, have determined to place a tax on bicycles. Whether the tax is to be regulated by the price of the bicycle, or whether all bicycles are to be taxed alike, we have not learned ; but the bicycles of Lowell and Paris are to be taxed. The result will probably be to limit the use of the bicycles in these localities. From our standpoint, there is no more reason why the bicycle should be taxed than a wagon, or a wheelbarrow, or a baby cart. It is not simply a luxury, but a means of obtaining needed exercise, and a convenient vehicle for traveling where roads are sufficiently well made to render the use of the machine possible. The bicycle is a labor-saving machine, as much as a mowing machine, a reaper, or a thrasher. Mounted on a bicycle, a man can travel six miles with no greater expenditure of energy than in walking one mile ; hence the bicycle is a means by which energy may be saved for use in ways which are more profitable than locomotion. We hope the example of Lowell assessors will not be followed by the tax gatherers of any other city.

***

THE Summer Tours of the Michigan Central, "The Niagara Falls Route," are unrivaled in their variety, picturesqueness, and comfort, embracing the best routes to Petoskey, Mackinac Island, and Michigan resorts, Niagara Falls, Thousand Islands, and the St. Lawrence River, the Adirondacks, Green and White Mountains, Canadian Lakes, and the New England Sea Coast.

A copy will be sent upon application to Geo. J. Sadler, Ticket agent, Battle Creek, Mich.

***

HOMES FOR WORLD'S FAIR VISITORS. — In view of the crowded condition of Chicago and its hotels during the World's Fair period, Poole Bros. have done a public service in issuing a very carefully prepared list of the Homes in Chicago that are thrown open to the public upon this occasion. The list is complete, and gives the name, location, number of rooms, etc., so that correspondence may be had and arrangements made before the visitor comes to Chicago. This list is accompanied by splendid sectional maps of the city on a large scale, by which the location of every house can be accurately found. Copies can be obtained at the Michigan Central Ticket Office at the Publisher's price, 50 cents — less really than the value of the maps themselves.

***

WHERE TO LOCATE NEW FACTORIES.

THIS is the title of a 150-page pamphlet recently published by the Passenger Department of the Illinois Central Railroad, and should be read by every mechanic, capitalist, and manufacturer. It describes in detail the manufacturing advantages of the principal cities and towns on the line of the Southern Division of the Illinois Central, and the Louisville, New Orleans, and Texas Railroads, and indicates the character and amount of substantial aid each city or town is willing to contribute. It furnishes conclusive proof that the South possesses advantages for the establishment of every kind of factory, working wool, cotton, wood, or clay. For a free copy of this illustrated pamphlet, address C. C. Power, Foreign Representative, 58 Michigan Ave., Chicago, Ill.

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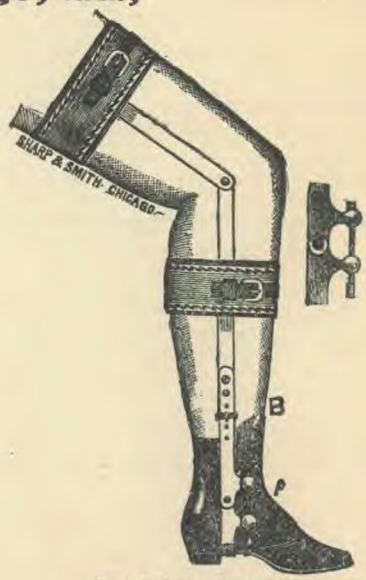

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Chicago & Grand Trunk R. R.

Time Table, in Effect June 26, 1892.

GOING WEST.					STATIONS.	GOING EAST.				
p m	p m	a m	p m			a m	p m			
7.15	3.00	11.00	7.00	.....	.....Boston.....	7.00	8.00	9.25	.....	
a m	p m	p m	p m			p m	a m	p m		
9.45	5.00	6.30	8.00	.....	.....New York.....	9.55	7.40	5.07	.....	
a m	a m	a m	p m			a m	p m	a m		
12.10	6.20	6.25	1.00	.....	.....Buffalo.....	8.40	5.50	4.20	.....	
a m	a m	a m	p m			a m	p m	a m		
1.35	7.45	8.00	2.45	.....	....Niagara Falls....	7.30	4.10	3.10	.....	
a m		p m	noon				a m	p m		
8.30	.....	3.00	12.00	.....	.....Boston.....	8.05	9.50	.....	.....	
a m	p m					p m	a m			
9.30	8.40	.....	.....	.....	.....Montreal.....	8.00	7.00	.....	.....	
p m			p m			a m	p m			
11.30	.....	.....	1.00	.....	..... Toronto	8.35	5.25	.....	.....	
			p m			p m	a m			
.....	.....	.....	8.00	.....	.....Detroit.....	9.25	7.45	9.25	.....	
Day Exp.	B. C. Pass.	Lmtd Exp	Pacific Exp.		Mail Exp.	Mail.	Lmtd Exp.	Atlte Exp.	Day Exp.	Prt.H Pass.
am	pm	pm	pm		am Dep. Arr.	pm	am	am	pm	am
.....	3.44	.....	.....	.....	6.19 ..... Port Huron	10.01	.....	.....	.....	12.10
6.50	3.49	12.22	8.40	.....	6.25 .Port Huron Tunnel.	9.56	12.35	7.30	8.50	12.05
8.05	5.10	1.27	10.07	.....	7.49 .....Lapeer.....	8.15	11.20	6.15	7.35	10.45
8.35	5.47	1.55	10.47	.....	8.35 .....Flint.....	7.30	10.47	5.40	7.05	10.05
.....	4.05	.....	8.00	.....	6.50 .....Detroit.....	9.25	.....	7.45	9.25	11.50
7.15	4.40	.....	8.25	.....	7.15 .....Bay City.....	8.37	.....	7.15	8.37	11.30
7.50	5.17	.....	9.00	.....	7.50 .....Saginaw.....	8.00	.....	6.40	8.00	10.43
9.05	6.50	2.22	11.20	.....	9.35 .....Durand.....	6.50	10.20	5.03	6.35	9.30
10.02	7.55	3.07	12.20	.....	10.40 .....Lansing.....	5.10	9.30	4.00	5.40	8.20
10.29	8.30	3.34	12.52	.....	11.15 .....Charlotte.....	4.34	9.01	3.25	5.11	7.47
11.15	9.25	4.15	1.50	.....	12.25 ....BATTLE CREEK....	3.40	8.20	2.40	4.30	7.00
11.53	pm	.....	2.35	.....	1.08 .....Vicksburg	2.33	7.40	1.48	.....	am
.....	.....	.....	.....	.....	1.19 .....Schoolcraft.....	2.21	.....	.....	.....	.....
12.40	.....	5.45	3.30	.....	2.06 .....Cassopolis.....	1.29	6.58	12.45	3.07	.....
1.20	.....	6.20	4.10	.....	2.50 .....South Bend.....	12.45	6.20	12.00	2.35	.....
2.45	.....	7.35	5.45	.....	4.30 .....Valparaiso.....	11.10	5.00	10.30	1.20	.....
4.50	.....	9.30	8.00	.....	7.00 .....Chicago.....	8.40	3.00	8.15	11.25	.....
p m	.....	pm	am	.....	pm Arr. Dep.	am	pm	pm	am	

Where no time is given, train does not stop.
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Valparaiso Accommodation, Battle Creek Passenger, Port Huron Passenger, and Mail trains, daily except Sunday.
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EAST.	† Day Express.	*N. Shore Limited.	*N. Y. Express.	*N. Y. & Chicago Limited.	*Atl'antic Express.	*N. Falls & Buffalo Special.	*Night Express.
STATIONS.							
Chicago.....	am 9.00	am 11.30	pm 3.10	pm 5.30	pm 7.30	pm 8.40	pm 9.50
Michigan City.	11.00	pm 1.12	5.00	7.11	9.25	10.25	11.43
Niles.....	pm 12.25	2.08	6.00	8.03	10.30	11.25	am 1.00
Kalamazoo....	2.08	3.21	7.05	9.07	11.38	am 12.43	2.07
Battle Creek...	2.48	3.57	7.40	9.38	am 12.10	1.10	2.45
Jackson.....	4.31	5.08	8.52	10.48	2.25	2.18	4.15
Ann Arbor.....	5.30	6.08	9.45	11.40	3.50	3.10	5.40
Detroit.....	6.45	7.15	10.45	am 12.35	5.30	4.15	7.15
Buffalo.....		am 2.05	am 6.25	7.40	pm 2.20	11.50	pm 5.00
Rochester.....		4.45	9.55	10.30	5.55	pm 2.40	8.20
Syracuse.....		6.45	pm 12.15	pm 12.25	8.30	4.10	10.20
New York.....		pm 2.40	8.50	7.30	am 6.30	10.30	am 7.00
Boston.....		4.45	11.45	11.45	10.50	am 6.15	10.50

WEST.	† Day Express.	*N. Shore Limited.	*Chicago Express.	* Night Express.	*Pacific Express.	*Chicago Special.	* N. Y. & Chicago Limited.
STATIONS.							
Boston.....	am 8.30	pm 2.00	pm 4.20		pm 7.15		
New York.....	10.30	4.30	6.00		9.15	am 8.30	am 10.00
Syracuse.....	pm 7.30	11.35	am 1.55		am 7.20	pm 2.20	pm 5.00
Rochester.....	9.35	am 1.25	4.00		9.55	3.47	6.50
Buffalo.....	10.45	2.20	5.45		pm 12.10	8.05	7.50
Detroit.....	am 7.15	8.45	pm 1.15	pm 7.45	9.10	am 3.15	am 2.35
Ann Arbor.....	8.19	9.45	2.14	9.05	10.32	4.22	
Jackson.....	9.28	10.48	3.10	10.45	12.00	5.15	4.28
Battle Creek...	10.45	12.00	4.17	am 12.10	am 1.45	6.25	5.32
Kalamazoo....	11.26	pm 12.39	4.57	1.10	2.37	7.00	6.03
Niles.....	pm 1.10	1.48	6.00	3.00	4.10	8.13	7.12
Michigan City.	2.18	2.45	7.05	4.35	5.35	9.25	8.05
Chicago.....	4.10	4.30	9.10	6.50	7.55	11.15	9.45

*Daily. †Daily except Sunday.

Accommodation trains go east at 7.48 a. m. and 1.20 p. m. except Sunday.
" " west at 1.20 p. m. and 9.03 p. m. "

Trains on Battle Creek Division depart at 7.55 a. m. and 4.35 p. m., and arrive at 12.40 p. m. and 6.45 p. m. daily except Sunday.

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The undersigned have for many years been engaged in the publication of books for the million, and several hundred thousand copies of their bound volumes are to be found scattered among the households of the United States and other English-speaking countries, although comparatively little effort has been made to push the sale of their publications. They are now organizing a vigorous campaign for the introduction of their various works in all parts of the United States, Canada, and the West Indies. **Liberal commissions are offered agents, splendid territory, and books, the selling qualities of which are not excelled by any subscription books offered by any publishing house in the world,** as will be seen by the following reports of work done within the last few weeks in different parts of the United States: —

John P. Neff, a college student less than twenty-one years of age, now at work in a Western State to earn money to pay his expenses during the next college year, has sold of the two works advertised on this page, books to the following amounts, for seven successive weeks consecutively: —

First week (4½ days)	$240		
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Third "	280	Sixth "	230
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This same agent sold *$180 worth of books in one day.*

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A lady made 25 canvasses in one day and took 21 orders, amount, $95.

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A young man took orders amounting to **$458 in 57 hours. In one day of 12 hours he sold 36 copies** of "Man, the Masterpiece" and "Ladies' Guide," **netting a profit of $99** at usual commission.

Scores of cases might be cited in which agents are making from $25 to $50 clear, weekly. No agent of average ability in average territory can fail to succeed with these works, and many who have failed with other works succeed with these. A wide-awake agent, with plenty of pluck and perseverance, is certain to make a success almost from the start, when he has had a proper preparation for the work. For terms and other information, address,

MODERN MEDICINE PUB. CO. (formerly Health Pub. Co.),
BATTLE CREEK, MICH.

THE QUESTION OF FOOD.

MODERN physiological and bacteriological discoveries have given to the question of food and diet an importance in the minds of progressive practitioners which it did not possess a quarter of a century ago, although at a more remote period some advanced teachers, as, for example, Dr. Willard Parker, of New York, taught that *materia alimentaria* was of far greater consequence than *materia medica*. This assertion, then considered almost a heresy, is at the present time echoed by almost every teacher of therapeutics; and the interest in medical dietetics has given rise to a great variety of food products of varying merits, a vast number of which might be termed "dietetic nostrums." Of the so-called "health foods," which, under various names and guises, have been placed before the public, the majority, notwithstanding the high prices charged for them, have possessed few if any of the merits claimed for them, being made to sell rather than to supply the profession the means of meeting any therapeutic indication. This fact has been clearly shown by the analyses published by the *Scientific American* and other scientific journals.

Being charged with the duty of providing suitable dietetic preparations of a special character for a large hospital (the Battle Creek Sanitarium and Hospital), the undersigned, some years ago, made a careful investigation of all the so-called "health foods" manufactured and sold in this country. The result was the discovery of the fact already stated, that these goods were made chiefly to sell, and not to cure sick people, the only virtue possessed by many being the magic influence of the word "health" connected with their titles, which doubtless, in some instances, does efficient service as a "mind cure." Only a very few really valuable preparations were found. In certain lines in which special preparations were called for, an almost absolute void existed.

To meet the evident necessities for ***GENUINE FOOD PRODUCTS,*** prepared in such a manner as to require the least possible labor on the part of the digestive organs, and to meet the most common and important therapeutic indications, and at a price in proper proportion to first cost, so as to be ***WITHIN THE REACH OF THE AVERAGE INVALID,*** was the problem which presented itself for solution. To solve this problem, or to attempt to do so, the undersigned made a series of experiments which have been continued for nearly seventeen years, and with the result of producing a great number of improvements in medical dietetics and methods of meeting the dietetic wants of the invalid. The means at service for this work have been an **Experimental Kitchen,** under able management; a **Laboratory of Hygiene,** with a full outfit of chemical, bacteriological, and physiological appliances; and a **Large Hospital and Sanitarium,** *feeding daily from 600 to 700 persons*, including every possible phase of digestive and nutritive disease. Many products and combinations have been discovered and formulated, which were at first exceedingly promising, but which proved by experiment to be not possessed of permanent value. A few have stood the test of many years' experience and trial, under all conditions and in all climates, and their production has gradually increased **from a few hundred pounds annually to hundreds of tons.** The following are a few of the most important of these preparations:—

· · · · GRANOLA. · · · ·

This is a farinaceous product, composed of a combination of the most easily digested grains, and containing the largest possible amount of all the elements of nutrition in the proportion needed for complete nutrition. The manner of preparation is such as to secure to a large extent the advantages of those changes naturally effected by the digestive process, and without the development of those side products which are possessed of a disagreeable flavor and more or less toxic properties which are produced by the various enzymes found in the digestive fluids.

Granola is an exceedingly valuable and digestible product, much resembling in flavor and mode of preparation the renowned gofio, the staple food of the natives of the Canary Islands, which has attracted to that out-of-the-way place hundreds of invalids by its remarkable virtues as a curative agent in various forms of dyspepsia. Granola is just the thing for a patient who needs to gain in flesh. This food is put up in pound packages.

· · · · WATER BISCUIT. · · · ·

The need of supplying certain classes of patients with the most nutritious foods in the simplest form, and at the same time without an excess of fluid, led to a series of experiments which resulted in the production of a biscuit as light, toothsome, and delicate in flavor as the most fastidious could desire, and without baking powder, yeast, or any other fermentative "raising substance." Any person who has in mind the tough, tooth-breaking water biscuit commonly known as sea biscuit, or hard tack, will be more than astonished to find an article possessed of all the virtues of a water biscuit, and also the palatable properties of an oyster cracker.

· · · · GLUTEN. · · · ·

The necessity for a genuine and practical gluten preparation has long been appreciated by the medical profession. For a few years this want has been supplied in France by gluten biscuit containing from 40 to 50 per cent of gluten. These biscuit, while not very palatable, have been far superior to anything produced in this country, and at the same time have been all they were claimed to be, a real gluten biscuit; whereas the so-called "gluten breads" and other preparations of gluten

which have been sold under various names in this country, have been almost without exception most thoroughly fraudulent in character. This statement is well backed up by exposures made by the *Scientific American* and other authorities within the last few years.

A visit to Paris a few years ago gave us an opportunity to make a thorough investigation of the gluten preparations made in that country and their method of production, which has since been perfected by us, as the result of laborious experiments and researches. The following are our principal gluten preparations:—

1. **Pure gluten,** in the form of gluten biscuit, 72 to the pound, eatable and not unpalatable. The only successful attempt ever made in this or any other country to produce an absolutely pure gluten bread.

2. **60 per cent gluten,**—also in the form of biscuit, crisp and palatable.

3. **40 per cent gluten,**—a biscuit which any one could eat with relish, and just the thing for diabetic patients.

4. **25 per cent gluten,**—a really delicate, crisp, and toothsome product. It answers the requirements of all except the worst cases of diabetes, and is just the thing for atonic dyspeptics, neurasthenic and anæmic patients, subjects of Bright's disease, and all cases requiring a highly nitrogenous food. It is also excellent for use in cases of obesity. It is especially valuable in cases requiring intestinal asepsis.

These food products are now offered to the public, as they have been for many years made for and supplied to the great Medical and Surgical Sanitarium at Battle Creek, Michigan, the largest institution of the kind in the world, and are guaranteed to be exactly as represented.

We also manufacture many other valuable foods for invalids, of which we mention the following:—

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FOOD FOR INFANTS,
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Various grades of CRACKERS,
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PRICES:

	Cts. per lb.		Cts. per lb.
Granola, in pound packages	12	**Pure Gluten (Biscuit)**	50
Granola, in bulk	10	**60 % Gluten** "	45
Water Biscuit, in pound packages,	20	**40 % Gluten** "	40
Water Biscuit, in bulk	15	**25 % Gluten** "	30

Any of the above preparations of gluten can be furnished at the same prices in the form of meal. In addition, we make regularly a gluten meal suited to those who require an increase of the nitrogenous element without special restriction of the farinaceous element, which contains a larger proportion of gluten than is found in any natural grain production. This is known as No. 3 gluten meal.

TESTIMONIALS.

"After a thorough investigation and trial of all the various health foods manufactured by other parties for the last seventeen years, myself and my colleagues have for years been prescribing and using exclusively in our practice in the Medical and Surgical Sanitarium, the special foods manufactured by the Sanitarium Food Co., these products being in our judgment superior to any others manufactured. I have made frequent chemical examinations of these products, and know them to be exactly as represented by the manufacturers. J. H. KELLOGG, M. D.,
"*Sup't of the Medical and Surgical Sanitarium, Battle Creek, Mich.*"

"I have personally tested your excellent food known as 'granola.' It is highly pleasing to the taste, easy of digestion, and the most nutritive cereal production with which I am acquainted. DR. R. W. BULA,
"*Indianapolis, Ind.*"

"We find the health food all that you claim for it, 'digestible and palatable.'
"W. A. WHIPPY, M. D., *Goshen, Ind.*"

"Having tested the properties of your 'granola,' I can safely recommend it as an article of food for all classes of invalids, especially those troubled with indigestion and constipation. R. DEPPELLER, M. D.,
"*Fort Wayne, Ind.*"

"The 'granola' gave very satisfactory results. I think it will form a valuable adjunct to the limited number of suitable food preparations for invalids which are supplied to the profession. W. R. BARTON, M. D.,
"*Ypsilanti, Mich.*"

"I have used your 'granola' in my family for three years, and we like it so much that we cannot get along without it.
"A. S. STORKE, M. D., *Oak Park, Ill.*"

SANITARIUM HEALTH FOOD CO., = Battle Creek, Mich.

FOR GOOD HEALTH 1893

J. H. KELLOGG, M. D., EDITOR.

EVERY NUMBER ILLUSTRATED.

EVERYBODY ought to be a subscriber to GOOD HEALTH for 1893. It is the oldest Scientific Health Journal in this country. It represents no sect, party, or institution; but is devoted to the advocacy of principles. It is eminently

A Journal for the People,

And is free from technicalities and hobbies. It presents, each month, a large fund of useful and practical original information not attainable elsewhere.

No journal devoted to health or kindred topics has ever enjoyed so wide a popularity as this journal has earned by its devotion to the interests of the people in the development and popularization of knowledge on all sanitary topics. It has been introduced into NEARLY EVERY PART OF THE CIVILIZED WORLD, and enjoys a large circulation, not only in America, but in England, upon the Continent of Europe, in South Africa, and in Australia.

SPECIAL ATTRACTIONS FOR 1893.

There is probably no way in which the public are more grossly imposed upon than by the innumerable patent nostrums, worthless medical appliances, and fraudulent pretensions to discoveries, which are so widely advertised in the newspapers, and so generously patronized by the public. The managers of this journal propose, during the year 1893, to continue the special department for the —

EXPOSURE of MEDICAL FRAUDS and SECRET NOSTRUMS.

The public are continually being imposed upon in the most conspicuous manner, by charlatans and quacks of every description. New schemes for gulling the unwary are continually being concocted by those who devote themselves to this nefarious business. Within the last year GOOD HEALTH has had the pleasure of aiding materially, through its Detective Bureau, in breaking up the business of some of the worst of these charlatans. The same good work will be carried on during 1893.

THE HOME GYMNASIUM.

The great interest shown in this department during the last year, has encouraged the managers to plan liberally for it for the coming volume. This department will present, among other attractions for 1893, a series of articles on the Physicial Training of Children, by the aid of which any mother will be able to secure for her children well developed and graceful figures. Articles showing how to correct various bodily deformities, such as round shoulders, flat chest, spinal curvature, etc., will appear in this department within the year. This department will be each month

PROFUSELY ILLUSTRATED,

And the instruction will be so practical that the exercises suggested can be carried out in any home.

A DOCTOR'S CHATS WITH HIS PATIENTS,

Is the name of a new department in which the readers of GOOD HEALTH will receive the benefit of Dr. Kellogg's racy talks to his patients at the Battle Creek Sanitarium, in answer to the regular Monday morning "question box," which always brings out a large lecture-room full of listeners. Any reader of GOOD HEALTH, also, may put in a question whenever he feels so inclined.

DR. FELIX L. OSWALD,

Well known to the reading public as a leading contributor to the *Popular Science Monthly*, and other leading magazines, and for the past year to the readers of GOOD HEALTH, will continue his interesting illustrated articles on "International Health Studies." It is unnecessary to assure our readers that Dr. Oswald is one of the most talented of American writers, and that his extensive travels and acute observations have given him a fund of material with which he cannot fail to interest and instruct, and often amuse, by his keenly-pointed wit.

GOOD HEALTH for 1893 will Contain the following Departments:

General Articles, Devoted to practical hygiene and popular medical papers.

The Home Gymnasium. This department will present, during the year, instruction which, if carefully followed, will in a few months give to any young man or woman a good figure, and a graceful and dignified bearing. Illustrations each month.

Home Culture. This department, under the charge of MRS. E. E. KELLOGG, A. M., is devoted to those interests of the home which relate especially to the mental, moral, and physical welfare of the younger members of the household. The following are some of the subjects which will be considered in this new department:—

Kindergarten methods for the home; manual training for children, adapted to the home; mothers in council; home government; new methods of dealing with child faults; character building; training of the faculties; the nursery; gymnastics for babies; and in addition, all the various interesting and practical subjects which have heretofore been considered in the departments devoted to Dress, Social Purity, and Household Science.

Editorial. The editor serves up, each month, a rich variety of hygienic tidbits, pithy, practical, and representing the latest scientific thought in this channel.

A Doctor's Chats with His Patients. This department will contain, each month, a racy discussion of live medical topics, new ideas in medical philosophy, simple remedies for disease, new theories of disease, etc.

TO NEW SUBSCRIBERS.

The publishers of GOOD HEALTH have no faith in the customary plan of offering cheap chromos or similar inducements to subscribers, but in the interest of popular medical education have decided to offer to every new subscriber a copy of—

"The Household Monitor of Health,"

A new work of 400 pages, bound in muslin, marbled edges, one of the most important and interesting works recently published. PRICE, $1.50. For full description, see next page.

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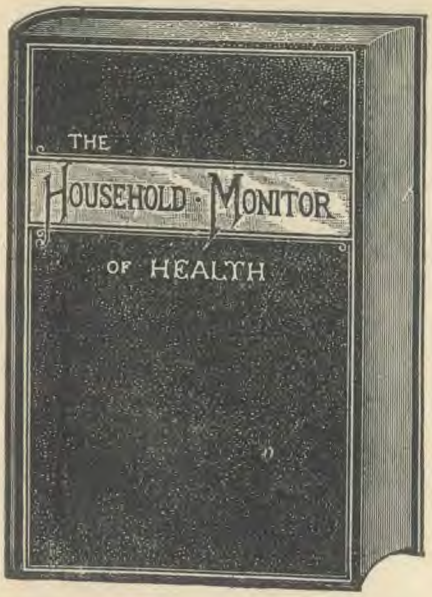

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All sorts of Mechanical Appliances.
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