JUNE, 1893.

GOOD HEALTH

CONDUCTED BY

J. H. KELLOGG M.D.

Subscription price $2.00
(Including Companion Volume)

PUBLISHED MONTHLY

SAMPLE COPY 20¢

GOOD HEALTH, VOL. 28, NO. 6.

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BATTLE CREEK, MICH., June, 1893.

LOW CASTE HINDU WOMEN, BOMBAY.

GOOD HEALTH
A JOURNAL OF HYGIENE
MENS SANA IN CORPORE SANO.
VOL. XXVIII.
BATTLE CREEK, MICHIGAN. JUNE, 1893.

INTERNATIONAL HEALTH STUDIES.

BY FELIX L. OSWALD, M. D.

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

50.—California.

IT has been observed that the occupations of savages — hunting, fishing, etc., — tend to become the pastimes of civilized men; and it is equally true that the summerland homes of our primitive forefathers will always be revisited for purposes of health and pleasure.

The Roman patricians had luxurious country seats in winterless Syria, as British aristocrats visit Southern Europe, in the never-renounced, though often-disappointed, hope of regaining their forfeited health in a land of eternal summer. The incidental advantages of such health resorts, indeed, often come to constitute their chief attraction, and California owes its popularity to its scenic wonders and its cool summers quite as much as to its warm winters, which, considering its latitude, seem really phenomenal to a visitor from the blizzard-swept eastern coast of our continent. At Sacramento, under the parallel of Philadelphia, semi-tropical butterflies flop about the flower gardens in January — a trifle soiled by frequent rains, but otherwise not the worse for a winter campaign in the open air. Farther south, at Visalia, the winter work of the evergreen orchards is often done in shirtsleeves; bluebirds warble the year round, and find an abundance of food at a time of the year when their Pennsylvania relatives would have to subsist on snowflakes. But microbes, too, linger; ailments which in New England yield to the expurgative influence of frost, tend to become perennial, and hunters who spend their Christmas vacations in the duck brakes of Lake Tulare, come home swollen with gnat bites.

Even at San Francisco the warm showers of the rainy season — the word "winter" would fail to describe the state of affairs — can make a Yankee long for a good Vermont snowstorm; but the long cool summer compensates that grievance to the satisfaction of the most fastidious immigrant. There are rains in April, but they are rare and light; the first half of May is dry enough for troutfishers to camp without tents, and then follow twenty-five weeks of as pleasant, clear-sky weather as the ancient Greeks can ever have enjoyed in the Arcadian highlands. About 10 A. M., just when the rays of the sun have fairly tempered the morning chill, a current of cold sea air pours in through the portals of the Coast Range, increasing in force till an hour after noon, when it gradually subsides, unless the rising temperature of the inland regions should revive it a few hours before a calm sunset is followed by a cool night. The refrigerating sea breeze streams up the Sacramento Valley as far as Benicia, and even the settlers of Suisun Bay sometimes enjoy the luxury of a second morning at the very time of the day when the brooding sun torments the New England farmer's boy with temptations to run away and enjoy the noon of his life in the shade of a Boston commission warehouse. In midsummer, when the heat of the inland valleys often rises to a hundred degrees in the shade, a cool northwest wind is apt to shroud the coast in mist, but the rolling sea of vapor rarely passes the threshold of the Golden Gate; curls of fog drift about the seaward cliffs, but the uplands bask in sunlight, and a reddish gray haze betrays the aridity of the eastern foothills.

"It is curious," says Dr. H. Gibbon, "to observe the conflict between the absorbing power of the air and the supplying power of the ocean, in regard to moisture. Toward noon, when the wind rises, huge columns of mist may be seen piled along the coast, three or four miles west of the city, and pouring in like a deluge upon the land. But the inland air, which is always thirsty, drinks it up with astonishing avidity, so that the impending wave, though in a current moving from thirty to forty miles an hour, makes slow progress. By the middle of the afternoon it is within a mile or two of the city, and there it stands like a solid mass of water, several hundred feet in depth, rolling and tumbling toward you (not without grandeur and majesty), and threatening to overwhelm you in a few seconds. You await its coming, but it comes not, it even recedes, to return and recede again."

SHASTA SQUAW.

The contrast between the humidity of the coast and the interior of the State is, indeed, such that in some parts of Kern county, only a hundred miles from the greatest ocean on earth, not a drop of rain may fall for a period of ten months, but San Francisco has never yet suffered from drought. The annual rainfall varies from twenty-five to forty inches, and altogether it may be doubted if any other city of the same size and the same resources of civilized life enjoy a more delightful climate. The city of Mexico, at an elevation of 7000 feet above sea-level, is ten degrees warmer in summer; Nagasaki, several hundred miles nearer the equator, is eight degrees colder in winter. In the middle of July, 1854, the thermometer sank to 46° Fahrenheit; while in November of the same year, the minimum of the coldest day was 47°, and there are years when the summer passes without an hour of disagreeably warm weather.

A few weeks ago Congress made an appropriation for an investigation of city slums, with a view of ascertaining their deleterious influence on the sanitary conditions of our large cities, and the list of towns selected for test-case inquiries, included the commercial metropolis of California. From an architectural point of view, the Chinese back-alleys of San Francisco can, indeed, challenge comparison with the ugliest lazaroni-dives of the Naples Ghetto, but the epidemic-proof climate will baffle the efforts of the commission; the development of cholera, yellow-fever, and typhoid germs requires heat as well as moisture.

The southern border counties of California are as hot and dry as Southern Spain, while the north coast is as wet as Oregon. Somewhere or other along the seven-hundred-mile stretch of coastline from San Diego to Crescent City there ought to be a region blest with the right medium of a climate most conducive to health and the enjoyment of outdoor life. Yankee tourists would find that medium in San Mateo county, with its fine fishing coves and redwood forests; immigrants from the Middle States, perhaps a little farther south, in Santa Cruz, or in Monterey county, where the sharpsighted Jesuit fathers founded their chief mission, two hundred years ago, and the Spanish governor of the State established his headquarters.

Thirty years ago the ancient capital of Alta, California, had sunk to the rank of a second-rate village, but the unrivaled charms of its climate and scenery at last attracted the attention of enterprising investment seekers; a magnificent hotel arose on a spur of the foothills and electrified the sleeply old burg with open air concerts and fashionable cavalcades. Free plantations made the shore dunes bloom like the garden of Eden; pleasure seekers gathered from all parts of

the west coast, and for better or worse, raised the prices of country produce to rates unheard of in the old territorial days. Gamblers, too, and rumsellers appeared like Satan in Paradise, but as an offset, the friends of temperance founded that unique Chautauqua of the West, known as Pacific Grove, — several hundred pretty villas scattered among the evergreen pines, a two-room cottage here, a turreted fairy castle there, all embowered in flower shrubs and surrounded by the wilderness of the primeval forest. Shady avenues, now lighted by electricity, wind through the woods, leading up to bird-haunted glades, but also down to the Monterey Pike, where the tempter has built a "Halfway House" just across the line of the "Dry District," a midway cabaret with two suggestive signboards: "First Chance" on one side, "Last Chance" on the other. Additional "Chances," of course, abound on both sides of the line, especially since a colony of enterprising Mongolians have established a shanty town on the neighboring beach and visit the Chautauqua of the West with innocent looking baskets.

Some fifteen miles south of Monterey the shore hills form a promontory that marks the Ultima Thule of the coast, which, broken only by occasional rock sierras, run in a northwesterly direction across the borders of British North America to the delta of the Yukon River. In Monterey county these forests resemble those of the southern Alleghanies, but farther north, under the influence of more abundant moisture, they become veritable "jungles of giant trees," as in the famous lumber region of Crescent City, where, as Commissioner Hittel informs us, "there are hundreds of acres of land, of which *every fifteen feet square*, on an average, supports a tree three feet in diameter and two hundred feet high, — a statement that may appear incredible to those who have seen only the forests east of the Mississippi River."

One explanation of that vegetative vigor can be found in the mildness of the winter season, exceeding even that of Southern England; another in the abundant rainfall which at several points of the north coast amounts to sixty-five inches a year, while near some mining camps of the northern Coast Range snow fell to the depth of seven feet.

The other extreme is the almost African dryness of the southwestern border counties, where farmers depend altogether on irrigation, and artesian drills driven to a depth of three hundred feet, may fail to strike a drop of water. A district about 150 miles long by 70 wide, and known as the "Colorado Desert," consists chiefly of gravel plains, alternating with hillocks of loose sand, and almost destitute of vegetation. The meteorological records of that region have been limited to the immediate neighborhood of the Colorado River, but there is reason to doubt if the average rainfall of the treeless area exceeds four inches per year.

In midsummer, the storms sweeping that arid plateau, whirl up dense clouds of sand, which fill the atmosphere for hundreds of miles, and often oblige travelers to imitate the Bedouins of the Lybian

KLAMATH YOUNGSTERS.

Desert, and fling themselves flat on the ground with their faces buried in the folds of their shawls. The vegetation of the Coast Range acts as an atmospheric filter, but can only moderate the temperature of the desert winds, which, minus their sand clouds, but still intensely hot, have now and then reached the coast itself.

"On the 17th of June, 1859," says a correspondent of the Santa Barbara *Gazette*, "the sun rose like a ball of fire, but no serious inconvenience was caused till two o'clock, P. M., when suddenly a blast of heated air swept through our streets, followed quickly by others; and shortly afterward the atmosphere became so intensely heated that no human being could withstand its force. . . . At half past two

o'clock the Fahrenheit thermometer exposed to this heat rose 133° (*one hundred and thirty-three degrees*). The trees were all blasted; and the fruit, such as pears and apples, was literally roasted on the trees before it fell to the ground. Many rabbits, birds, and domestic animals died of suffocation. All kinds of metal became so heated that for hours nothing of the kind could be touched with the naked hands. A fisherman, who had been out on the bay that afternoon, came back with his arms all blistered."

In many districts of Southern California the climate has been improved by the tree plantations of the fruit growers; mile after mile of rolling hill country on both sides of the railway, is covered with thrifty orchards, whose blossoms in April attract myriads of butterflies, and whose wealth of foliage cannot help modifying the aridity of the atmosphere. The malarious swamps of the Tulare bottoms have been redeemed in the same way. Fever and ague have undoubtedly become less virulent since the arrival of tree-planting colonists, though the credit for the beneficent change has been unfairly monopolized by the plantations of eucalyptus, the most thrifty, but also the ugliest, of all imported trees. It will outgrow pines and poplars, where indigenous shrubs can hardly subsist without irrigation; but its irregular shape and ragged bark (coming off in patches like the hair of a mangy dog) make it an eyesore to landscape gardeners who have seen the California cedar or the New England elm. It does grow with a rapidity that compensates its demerits in wood-famished countries, but the alleged expurgative effect of its aroma is due to its miasma-absorbing foliage, and could be accomplished by any other leaf tree.

California is a land of strange scenic contrasts. The traveler who has crossed the Coast Range, with its panorama of mountain and ocean views, feels as if he had reached a different world on entering the dreary flats of Tulare county; and the park-like forests of the upper Sierra contrast still more strangely with the spinescent vegetation of many parts of the San Joaquin Valley; thorn jungles covering hills and ravines for scores of miles; the very grass bristling with tiny spines and burrs that fasten to every square inch of your dress and cannot be detached without considerable trouble.

There are communities where every man, woman, and child works in the mines; others where fruit growing is the all-absorbing pursuit, though in the price of fruit the consequent difference is not nearly as great as outsiders might be led to expect.

In many towns surrounded by waving forests of luxuriant orchard trees, the newcomer is astonished to find the price of oranges, pears, and grapes as high as in the Sierra stations, often outrageously higher than in such cities as Detroit and St. Paul. "It is not our fault," your fruit peddler will tell you, "our profit often doesn't amount to a dollar a day." The trouble is that the market is cornered by greedy middlemen, who buy up whole plantation crops on the tree, and form strong combines to prevent underselling. It is the same with land and labor, with fisheries, mines, and railway tickets. The Golden State is in the clutches of middlemen, but will outgrow the trust dry-rot as it has outgrown the bonanza delirium and the speculation fever, and after all due deduction for the over-estimates of its climatic advantages, will retain a fair claim to the title of the American Italy.

(To be continued.)

WHAT ARE THE RESULTS OF SALT-EATING?

BY JULIA COLMAN.

By salt-eating we mean the common habit of adding salt (chloride of sodium) to our food either before, during, or after cooking. The amount eaten is large. In France it averages nineteen and a half pounds, and in England twenty-two pounds, to the individual. It is not reasonable to suppose that this sharp, water-seeking mineral can pass through the moist human organism in quantities so large, without important resulting modifications. What are these results? What say the learned men about this matter?

A large proportion of the writers on this subject have evidently been baffled in their attempts to ascertain the actual results of salt-eating, or they have taken it for granted that it must be right because "everybody eats it." They go on repeating and copying from each other, statements which simply beg the question. We find a continual iteration of such ideas as these, "It is in the blood and secretions, and therefore we must continue to put it in." Can we accept this style of argument in face of the fact that every individual of us has been "salted," from the earliest moments of our existence, with scarcely

ever an exception to show what we could have been without salt? But we will make literal quotations, with chapter and verse.

Dr. H. Letheby, M. B., M. A., Ph. D., etc. (medical officer of health and food analyst for the city of London), in his Cantos Lectures "On Food," page 82, says: "Salt is a large constituent of every one of the secretions, and forms about half the weight of the saline matters of the blood. Unlike the phosphates, however, it does not enter into the composition of tissue."

Dr. T. King Chambers says, in his treatise on "Health," "Chloride of sodium is such a large constituent of our blood that it cannot possibly be noxious." (That is, we are about as well as we can be, so there is no use of investigating so large a habit as this!)

Wm. Beinton, M. D., in his elaborate treatise on "Food and Its Digestion," says, "A large constituent of the blood and all the tissues, a source of the gastric juice, a more than incidental ingredient in all the secretions, and therefore a necessary part of the aliment(?). It is strictly a food of the highest order. On the other hand, though it is casually present in many articles of food, the fact that it is generally absent in the quantity really requisite to meet its expenditure by the organism," etc., etc.

Prof. E. L. Youmans, the long-time conductor of the *Popular Science Monthly*, in his valuable "Handbook of Household Science," begs the question in a similar way. "Salt escapes from the system by the kidneys, intestines, mucus, perspiration, and tears. To replace this loss and maintain the required quantity in the body, there must be a proper supply." Of course it is "expended" if not wanted. We may at least be permitted to wonder why, if it were very much needed in the system, it should be continually expelled by every available outlet.

Another very popular argument is that "all the animals" use salt, and therefore we should. The truth is that none of the carnivorous nor the frugivorous animals eat salt, nor do the birds. Some of those that live upon grass and twigs seek salt in their wild state. It is said that they do this to kill the insects which they take in with their herbage. We do not browse, therefore there is no reason for classing us with these salt eaters. The statement that human beings need salt to preserve them from intestinal parasites, lacks proof. The far-off cases of Africans and of ancient Dutch criminals reported to suffer from lack of salt is more than off-set by the well-known cases of intelligent individuals among us who have deliberately abandoned its use for years, and with great advantage to their health.

The uncertainties of expression (which we take the liberty of italicising) in the apologies for salt, are notably curious. The well-known Pereira, in his "Food and Diet," a standard authority, after making the sweeping assertion that "it is a necessary article of food, being essential for the preservation of life and the maintenance of health," adds, "It forms an essential constituent of blood, which *doubtless* owes many of its important qualities to it. Thus it *probably* contributes to keep the blood corpuscles unchanged." The next statement is carried on with, "whence *it has been assumed* by some writers," etc., all of which *proves* nothing.

Dr. Letheby goes into quite a labored speculation. After acknowledging that it does not enter into the composition of tissue, he tries to show that it may be a medium of absorption and secretion, following the theory of Liebig. "Common salt has the faculty of forming crystallizable compounds with most of the inorganic and effete constituents of the body. *May it not*, therefore, be an important agent of diffusion, for as collodial matters, albumen, and fibrin cannot pass through the walls of the intestines and the bloodvessels, *it may well be* that through the agency of common salt, and the free acids of the gastric and muscular juices, they temporarily assume a crystalloidal condition, and are thus absorbed or secreted."

These *surmises* in connection with this salt question are highly suggestive, where we have a right to expect statements made with scientific accuracy. Prof. Youmans says, "It is highly probable," "They seem to have," "It is said," in regard to the effects of salt eating, and we could quote many more similar expressions from other authors. We want facts, not guess work, in connection with a matter which these writers themselves acknowledge to be of the highest importance.

It is known that scurvy is a salt disease. It occurs where people are fed for a long time on salted provisions, like sailors on long voyages, and especially in the Arctic regions; soldiers in the southland during our late civil war; an English regiment decimated in South Africa; and until quite recently large numbers of the poorer inhabitants of English cities, during the long winter privation of fresh fruits and vegetables. If a little salt is good, and these victims of scurvy took too much, we ought to have some safe rule for the "proper supply" of the "required quantity" referred to by Prof. Youmans. At present the matter is mostly left to unskilled cooks and housewives, who follow the "rule of

thumb" with scarcely a thought as to wholesomeness. If, on the other hand, salt is bad in itself, and more or less injurious in proportion to the quantity taken, then we ought to recognize its injurious effects and to understand how we should be benefited by laying it aside. By this we mean, omitting its addition to our food in its mineral form.

It is conceded that there is salt in most of the fruits and vegetables, and in this organic form we can assimilate it and get what is really needed for the wants of the system. The best physiological authorities agree that we cannot assimilate earthy or mineral matters directly. These must first be taken up by vegetable growths in which animals find their proper nourishment. Salt, they say, is an exception.

There are those who deny this claim for salt, saying that it is neither proven nor probable. They maintain that when taken by itself, so that its true action can be tested, the stomach throws it off emetically, as it does many other poisons. Prof. Youmans and others admit this. When retained, it sometimes proves fatal, and such cases are quoted.

As to its effects when taken with food, the most significant admissions are made. Dr. Brinton says ("Food and Its Digestion," page 336): "The excess seems easily to pass off by all channels, not only by the healthy excretions, but even by the effusions of disease. In this way the fluid of ascites (dropsy of the peritoneum) is often highly salted, or the sputum of pneumonia exhibits a quantity of this chloride, which goes far to explain its contemporaneous deficiency from what is ordinarily its chief channel of removal from the body, to wit, the urine. A proportion of such habitual excess is, however, left in the body, most of the tissues of which probably become impregnated with a quantity of salt far larger than would suffice for the most vigorous health."

Now we beg leave to ask why these important admissions should not be promptly followed by investigation to ascertain whether these and perhaps other common diseases be not often caused by efforts to get rid of this foreign substance with which we are so largely loading the system. The inference that such efforts should be expected to lead to disease is irresistible; and the prejudice in favor of the long established habit of salt-eating should not prevent a thorough investigation of the subject.

After all Dr. Brinton's elaborate argument in favor of salt-eating, he admits the existence of many wild or semi-civilized tribes that are said to dispense with it, and he undertakes to show that they and the non-salt-eating animals may get all they need in the organized form, in the plants, etc., on which they feed. This, of course, lets down the entire argument for mineral salt-eating. Dr. Letheby and Prof. Youmans make similar damaging admissions. One of the latest and best large logical text-books (by M. Foster, M. A., M. D., F. R. S., of Trinity College, Cambridge, Eng.), which has only a brief paragraph on the "Effect of Salts as Food," frankly admits that "at present we are in the dark on that subject."

What we need now is careful, unprejudiced, scientific, and experimental investigation, followed by honest statements of results somewhat in the style of Dr. B. W. Richardson in his Cantos Lectures on Alcohol. This topic was assigned him by the Society of Arts, and he spent three years in its investigation, which brought many results he did not expect, and yet of world-wide importance. The same society gave Dr. Letheby the subject of "Food," and in the course of his Cantos Lectures he devotes a few pages to salt, from which we have quoted. We are persuaded that the time will come when the subject of salt-eating will be considered of sufficient importance to have an assignment for investigation by itself; and in the interests of physiological science and of suffering humanity, the sooner that time comes, the better.

Sex in Brains. — The popular fallacy that a woman's brain power is not equal to man's because of its smaller size, is illustrated in an amusing little account taken from a German paper by the *British Medical Journal*. Professor L. Bischoff, the late distinguished physiologist of Munich, was a profound believer in woman's mental inferiority, and devoted much time to making researches to substantiate this claim. As a result of his labors it was given out that while the average weight of man's brain was 1350 grams, woman's brain was smaller by 100 grams. But, alas for the Professor's theories and calculations! Upon his death it was ascertained that his own brain weighed only 1245 grams, 5 grams less than that of the average woman. If the shades of the departed ever return to this terrestrial sphere, it would seem probable that the brainy Professor could hardly rest in peace until the world had been offered some explanation of this extraordinary phenomenon. — *Woman's Herald.*

HEALTHY HOMES.

VI.

BY HELEN L. MANNING.

VENTILATION, HEATING, AND LIGHTING.

THE methods of ventilating and warming a home ought to be correlated in order to make either system do its work perfectly. As a matter of fact, while most houses are comfortably warmed, very few are adequately ventilated. In winter, enough fresh air is admitted through porous walls and around the windows, and by the occasional opening of doors, to keep the inmates from suffocation, but not enough to keep them in health; and in summer, many people make dark, close dungeons of their homes, instead of freely admitting the vivifying fresh air and sunshine.

By the act of breathing, pure air is taken into the lungs and expelled in a deteriorated condition. It is deprived of its vital property, oxygen, and loaded with carbonic acid gas, together with a varying quantity of moisture and of organic impurities. The animal exhalations from the breath and the body impart the fetid, sickening odor noticeable in unventilated sleeping rooms, and after awhile, the very walls and furnishings are permeated with the same. Poisoning from such an atmosphere is slow but nevertheless certain.

Yet it is astonishing how the human system adapts itself to the most adverse circumstances. For instance, a Battle Creek nurse, while ministering to the sick poor in Chicago, found a family living over a horse stable, the floor of the room so open that the animals could be seen through it, and the odors perceptible from this foul, unventilated stable were so sickening to the nurse that she could hardly stay in the room long enough to do what was necessary. Yet the sick woman said that she enjoyed the smells peculiar to a stable, that she and her children were fairly well most of the time, and that the air of the streets made her dizzy. If the air of the streets in the crowded part of the city which this poor woman was likely to frequent, had such an unpleasant effect upon her, what would be the probable effect of suddenly transporting her to a region of pure country air! This instance well illustrates Dr. Oswald's observation that people can actually become fond of foul air — modern troglodytes.

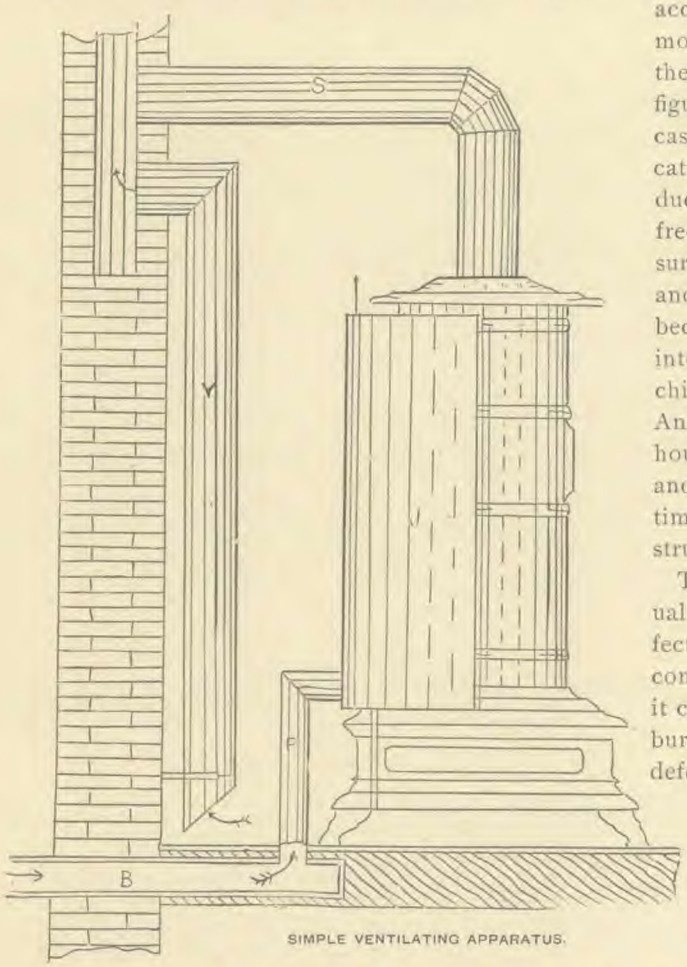
But respiration is not the only source of air contamination within our homes, and which makes thorough ventilation necessary. Stoves and other contrivances for heating often help to vitiate the air. One way is by robbing the air of its proper amount of moisture, and a more serious one is in direct poisoning of the air through gases thrown off in the process of combustion, and which find their way into the room by leakage of stoves and furnaces, and also, as good authorities state, by the passage through their iron walls of carbonic acid gas and carbonic oxide. These dangers are greater in the use of coal than when wood is consumed as fuel, and are increased as stoves become old, because their joints grow less and less secure and their walls more and more porous.

Again, where furnaces are used for heating, the intake pipe not infrequently leads merely from the cellar to the living rooms, instead of bringing in pure outside air. Properly arranged steam heating apparatus is much better than any hot-air furnace. The difficulties just mentioned as belonging to stoves and furnaces, do not apply to steam coils. But it must not be forgotten that radiators furnish no fresh air, and therefore provision must be made for fresh air inlets and foul air outlets apart from the heating. Pipes should bring the fresh outside air directly to the radiators, so that it may be heated before being diffused through the room, and the foul air outlets should be on a level with the floor — not several inches above it, as is sometimes the case, when they are practically of no value. Or two or more windows may be arranged with a narrow board under the lower sash in such a way as to make a small opening between the upper and lower sashes. These may be fixed so as to afford fair ventilation without incurring unpleasant draughts. However, a draught is not the worst thing imaginable. If people would only learn to have as great fear of breathing vitiated air as they now have of draughts, they would live longer and better. Even very delicate people can accustom themselves to air currents, provided the air be pure, and suffer no harmful consequences, as has been repeatedly demonstrated.

The advantages of constructing a house so as to include one or more open fireplaces, in the interests of heating and ventilation, were spoken of in a pre-

vious article. A fireplace, to be entirely satisfactory, should have no down draught, should be economical in the use of fuel, should have a safe and convenient method for disposing of the ashes, and easy facility for keeping the grate clean.

The "Monitor of Health" gives the following simple method of ventilating common dwellings: —



SIMPLE VENTILATING APPARATUS.

"No expensive apparatus is necessary to supply an abundance of fresh air to any dwelling. If a house is not quite completed, ventilating shafts for conveying away the foul air can be provided by building the chimney of extra size, and by means of a partition, making two compartments, one to be used for ventilation and the other for conveying away the smoke from stoves or fireplaces. If a house is finished without any way being provided for ventilation, as is the case in the majority of homes, an arrangement may be made like that shown in the accompanying cut, which, though less elegant than more expensive ventilating arrangements, is none the less effective, if properly constructed. The figure represents a stove, one side of which is incased in a sheet iron envelope, J, which communicates by the pipe, P, with the outer air through the duct, B. Through this tunnel, the fresh air will enter freely, being warmed by contact with the heated surface of the stove; then, rising to the hot ceiling, and passing to the outer sides of the room, where it becomes cool and falls to the floor, it is drawn up into the pipe, Y, through which it passes into the chimney just below the opening for the stovepipe. An arrangement of this kind can be put into any house at an expense of from ten to twenty dollars, and will secure an ample supply of fresh air at all times." One or more very excellent coal stoves constructed on a similar plan, are on the market.

The lighting of a house must depend upon individual circumstances. The electric light, being perfectly clean and causing no exhaustion of the air by combustion, is to be preferred above all others when it can be secured. Gas not only vitiates the air while burning, but is a frequent menace to health through defective plumbing. A small leakage is a much more serious matter than it is generally considered. There are many objections to kerosene, and if used, good burners should be secured and the flame never turned low, thereby causing foul gases to be given off unconsumed. Persons with a moderate income, especially if there be little children in the family, can hardly afford to use other than electric lights, if possibly available, taking convenience, safety, and health into consideration.

THE PEOPLE OF ICELAND. — In Iceland, a nation of 73,000 people, men and women are in every respect political equals, governed by representives elected by men and women. The mothers teach the future citizens, and in all of Iceland there is not an illiterate after the age of seven; there are no prisons, no police, no thieves, no plutocrats, no miserable poor, but a plain, temperate, chaste, educated, and intelligent people. — *Southern Churchman.*

WHAT IS HYGIENE? — At a late teachers' examination, in answer to the question, "What is hygiene?" a young lady applicant for a certificate to teach school, answered, "It is the soft part on the baby's head, which gradually grows harder as the baby grows older." — *Sel.*

SMALLPOX is no more contagious than is a good example. — *Ram's Horn.*

SUFFICIENCY OF A VEGETARIAN DIET.

A MEMBER of the London Vegetarian Society recently gave an address in Redhill, England, on the sufficiency of a vegetarian diet for hard manual labor. The *Surrey Mirror* gives the following report: —

The chairman, in introducing the speaker for the evening, said that he was himself a vegetarian in sympathy, but unfortunately his wife was not; and until the women became interested in food reform, it was impossible for the working men to adopt the diet. He (Mr. Gilbert) had met many working men who were vegetarians simply because they could not afford to buy meat on their small wages. In Wales many folks were practically vegetarians, as he knew; and if they could live on the diet, other men could, too. He cordially commended the subject to their earnest attention.

Mr. W. Jeffery, a robust and pleasant-looking man, who apparently throve well on his "diet of herbs," then gave a powerful, practical address, as a working man to working men. He explained that though described on the bill as an "iron-worker from the Thames Iron Works," he did not actually wield a hammer, although he worked very hard. He was, in fact, the electrician to the establishment, and as such had a good deal of experimental and brain work to do. His diet was simple, consisting largely of whole-meal bread, pulse, nuts, and fruits, and upon this food his family were hearty and well, and never troubled the doctor.

In the Thames Iron Works there were many vegetarians in all departments. They had puddlers, smiths, hammer-men, and others who did the most laborious work on a fleshless diet. Men worked in front of fiery furnaces, stripped to the waist and pouring with perspiration; and if this hard work was done in London, it could be done in Redhill. He had often competed in tugs-of war, and had never yet been beaten. He would undergo any trial that they liked upon bread and water, against another man living on beef and beer. Bread and fruit were also excellent food for mental work. Nuts were often regarded as indigestible, and so they might be after a full meal; but eaten as food, they were a most nutritious article. If they were bad, a little child could detect it; but for meat, a skilled inspector was necessary. It has been stated on oath in a court of law that nearly 85 per cent of the meat sent to the London meat-market was more or less diseased. A butcher had told him that if he sold only meat guaranteed to be healthy, it would cost about 18s. 6d. per pound. As to sausages, folks often put inside of them what they could not sell outside.

Another aspect of the question was that if they ate only English fruit and vegetables, Irish potatoes, and Scotch oatmeal, they would make such a demand that the supply would have to be met, and by British labor. That would mean that more workmen would be required, as vegetable culture required more hands than the tending of sheep and cattle. Again, we spend millions of money annually in buying foreign fruit, vegetables, eggs, cheese, etc., which might be grown at home, and thus benefit the laborer and the farmer.

The speaker then detailed some terrible scenes of destitution, which he often witnessed in the east end of London, and which he attributed to drink. Vegetarianism, he said, was the only natural cure for drunkenness, and he told a story of how he had induced a fellow-workman, by eating apples just before beer time, to lose his taste for the indispensable fluid. About ninty-nine per cent of the vegetarians were teetotalers. He urged all present who had got thus far on the road to right living, to go one step farther, and have pure food as well as pure drink.

There were many other reasons in favor of vegetarianism. For instance, man's organism, his teeth, his nature, were not fitted for animal food. All man's best instincts revolted against the killing of animals; and if they doubted it, let them compare slaughter-houses with cornfields, and cattle-ships with orchards, and they would soon see which was the more natural system. He asked why slaughter-houses were always put on the back streets, and replied that it was because they did not wish the awful sights that were enacted, to be witnessed by children, who would be revolted and demoralized by the cruelties which went on inside their walls.

Passing to more pleasant subjects, Mr. Jeffery spoke of the better times that would ensue if everybody became a vegetarian. Drunkenness would disappear, poverty would be diminished, and life would be easier and happier for everybody. There would be less work for women on Sabbath. All dishes used for vegetarian meals could be washed in cold water. The ladies knew what that meant, and he urged them all to become pioneers in the glorious work of food reform.

The lecturer was followed with close attention, and his remarks were often followed with applause, although many produced what is called a "sensation,"

as he detailed in evident sympathy the sufferings of the poor in London on one hand, and the sufferings of animals on the other.

The chairman then said that any one might ask questions of Mr. Jeffery, who would be glad to answer them.

Accordingly, questions were asked by members of the audience relative to the supply of leather. How vegetarianism tended to lead the laborers back to the country from the towns? Were there any athletes among food reformers? Was the diet suitable for brain workers? All of which, and others, were satisfactorily answered by Mr. Jeffery, who instanced two friends of his who had won prizes for cycling and athletics.

The chairman said he had met a minister who told him that the cost of the family breakfast did not exceed fourpence. He was a very good preacher, too. When he was in prison, gas-fitting, he had seen the simple farinaceous food upon which the prisoners lived, oatmeal skilly, brown bread, potatoes, etc., and they improved in health, both of body and mind, upon an enforced vegetarian diet.

Mr. Jeffery, before leaving, recommended his hearers to keep the window open at night, have plenty of clean water both outside and in; to give up tea, coffee, salt, and condiments, and they would find a pleasure in their simple food which they never had before.

FRESH AIR IN OUR HOMES.

LET me quote the words of one who speaks with all the authority of a great name, Miss Florence Nightingale: "It is all nonsense, what some old nurses say, that you can't give a baby fresh air without giving it a chill; and, on the other hand, you may give a baby a chill which will kill it (by letting a draught blow upon it when it is being washed, for instance, and chilling its whole body, though only for a moment) without giving it fresh air at all. And depend upon this, the less fresh air you give to its lungs, and the less water you give to its skin, so much the more liable it will be to cold and chill."

Let me here strongly protest against the foolish fashion of half smothering a sleeping baby, covering its head and mouth, at the risk of stifling it outright.

Cots and beds in the nursery should be uncurtained, or nearly so. We might almost as well lay the child to sleep on the shelf of a clothespress, or at the bottom of a packing case, as in a cot closely curtained round. An authentic story is told of a well-constituted child passing within a few minutes from a condition of spasmodic irritation, bordering on convulsions, into perfect health, owing simply to the admission of fresh air into a close, ill-ventilated nursery.

A thermometer should be kept in the room, and should not rise above 70° F., overheating being as unwholesome as the reverse.

Nervous irritation is a prominent characteristic of infancy, and pure air will be found to act as one of the most powerful nervous sedatives upon the tender system of a child. Whatever, therefore, affects the purity of the atmosphere should be quickly removed; proper places provided for dirty linen, etc. The air of bedrooms should be perfectly fresh; especially should we beware of "tired air" creeping in from the day nursery, just before the children's bedtime; chimneys should be kept open, bedclothes turned back and exposed to the air as soon as the child is up.

A room fifteen feet square and nine feet high, affords ample initial cubic space for a nurse and two children. With good and careful management, a nurse, an infant, and two other children, have occupied a bedroom of this size without detriment to health. No useless articles of furniture or drapery were allowed entrance; both a dressing room and a bathroom were close at hand; care was taken to keep the air of the room pure; no open vessels were allowed to remain; the door, never quite closed, admitted light and air from the passage; the two windows were partly open on summer nights, and the fire was always lighted before bedtime in the winter. Children from seven to nine or ten years of age may have separate bedrooms, but after that age a separate dormitory for each is requisite. A space fourteen or fifteen feet by eight or nine feet wide, permits of a bed four feet wide to be placed between the door and the wall, and a fireplace in the opposite wall to be beyond the foot of the bed. No double-bedded room should be less than fifteen feet square, and no bedroom should be without a fireplace.

The room door may be left partly open, and there will mostly be an open door either from the dressing-room or the nurse's room. The doors must be so hung that when partly open they will shield the bed, rather than direct the current of air onto it.

The windows in the summer can be left a little open at the top. They should be provided with shutters, both to keep off the draught and to shut out some of the light when this may be necessary. They aid materially in lessening the chill that in cold weather always strikes in from the windows. A stout linen or jute fabric makes a good protective window-curtain for the winter. All woolen hangings are objectionable in a bedroom, as they readily absorb moisture, and all organic particles suspended in it or floating in the air. The ceiling of the room should be such as to bear rubbing over; it is better of a gray or cream color than white, so as not to reflect too much light on the upward gaze of the children. The walls of the bedroom are better painted in some even tone of quiet color. If the wall is papered, it should be varnished over, and the paper must have no bright-colored, intricate pattern-spots, and no vivid green likely to contain arsenic. The floors must not be carpeted all over, certainly not under the bed, and it is better to have the boards stained and left bare round the sides of the room. The top edge of the skirting board should be rounded off in all rooms for children. Iron bedframes should have round edges. Slips of soft carpet by the sides of the bed, and from the door to the fireplace, if not all over the center of the room, are sufficient.— *Mrs. Wm. E. Gladstone.*

ETHICS OF THE SENSE OF TASTE.— It is the abuse of a natural function to eat things simply because we like them, and for the enjoyment of the sense of taste. We have no right to divorce utility from enjoyment in the sense of taste which was given us for the relish of food. But children are usually taught from infancy to use the sense of taste for the purpose of enjoyment, and this practice is usually continued in mature life. If a friend comes in, it is considered inhospitable not to offer him something to eat. This is thought to be a very important part of our duty in entertaining friends, but it is really a gross thing. Why not give our callers something to smell? It would be a great deal better, for odors pass away with no after-effects; but if we give them something to tickle the palate, the stomach has to work, perhaps all night, to dispose of the consequences of indulging in a momentary pleasure. It would be much more æsthetic if we were to prepare a repast of odors. If we would offer our friends something which was a mere taste, and nothing back of it, that would be far better; but giving them refreshments with a pang of dyspepsia behind, is not real kindness.

The fundamental principle upon which this misuse of the sense of taste is based, is all wrong. A child should be taught that it is not proper to use the sense of taste merely for gratification. The foundation of all great nations was laid in simplicity. The Greeks, Macedonians, and Persians, when they were growing and developing, were exceedingly simple in all their habits of life. Cyrus, the king of the Persians, was brought up on barley cakes, and other simple vegetarian foods. When these nations became rich and luxurious, when they began to prepare great feasts which lasted for nights and days together, they began to degenerate.

This perversion of the sense of taste and gratification of appetite often leads children to a great deal of grossness of various kinds. Highly seasoned, stimulating food often leads to drunkenness, and to the taking of tobacco and opium, and a great variety of other intoxicants and narcotics.

The gratification of the sense of taste is very different from the gratification of the other bodily senses. We listen to eloquent speeches or to enchanting music; we look upon a pleasant landscape or a fine picture, and these gratifications of the senses of sight and hearing leave no sting behind; but when the sense of taste is used merely for its own sake, the stomach has long hours of work, and in consequence, the brain is clouded, the liver clogged, and the whole bodily system out of order. We ought to eat to live, and not live to eat, and our children should be taught this from infancy. Mothers should prepare good food, and set it before their children with the expectation that they will eat and be satisfied; but instead of that, steps toward a wrong education are taken by continually asking children, "What would you like?" Really good nourishing food, if well prepared, ought to be relished by both children and grown persons.

The taste for condiments and spices and pickles is an acquired one, just the same as the taste for tobacco is acquired. We can acquire a taste for things absolutely repulsive, or we can retain our normal taste for things which are bland and wholesome.

"RARE" Ben Johnson, when asked that old, vexed question, "Is life worth living?" replied, "That depends on the *liver*," and he hadn't seen modern American women either.

THE BICYCLE FOR INVALID WOMEN.

BY J. H. KELLOGG, M. D.

(Concluded.)

FOR some ten years I have made a practice of making a careful test of the strength of the different groups of muscles in all suitable cases coming under my professional care. The figures in the accompanying physical chart represent the results obtained from the careful examination of 600 women by this method. A little study of this chart will show that it forms a basis for a complete graphic representation of the functional condition of the muscles of the body. In making a representation of a person's strength upon this chart, the lifting capacity of each muscle is determined by the dynamometer, and a dot made upon the chart at the figure or figures which correspond to the number indicated upon the dynamometer for each particular group of muscles. These dots are then connected by a continuous line. If the subject were a perfectly symmetrical person, the line would run straight across the chart. Such a person is never found in actual practice, although I have found a few cases in which the variations from a straight line were quite inconsiderable. The low points upon the line indicate relative weakness; the high points, relative strength. The columns for totals at the right-hand side of the chart show the combined strength of all the muscles in the arms, legs, trunk, and chest respectively, and in the entire body. By the aid of this chart, it is possible to know at a glance, not only the relative strength or weakness of the entire body, but which part of the body is disproportionately weak, and which particular group of muscles is relatively weaker or stronger than others.

Fourteen years ago, I possessed myself of a Columbia bicycle. For more than a dozen years, professional work has pressed upon me so heavily, however, that I have neglected exercise of every description, and so much to my detriment that last year I found myself in a condition of health that absolutely demanded attention, and I accordingly obtained one of the most approved patterns of Columbia safety bicycles, upon which I soon came to feel quite at home, and in the course of a few weeks increased my lung capacity 50 cubic inches, with a proportionate improvement in physical and mental vigor.

This personal improvement suggested to me the possible advantages which some of my feeble patients might derive from the same source, and I accordingly employed an experienced bicycler as a teacher, and began prescribing exercise upon the bicycle as a means of cure. The results were far beyond my most sanguine expectations. The improvement by the first cases to whom this exercise was prescribed, was so noticeable that I was soon overwhelmed by demands from my lady patients for prescriptions for

exercise, and it was but a short time before the wheel was in such constant use from early morn till dusk, that I was myself utterly deprived of its advantages. I felt more than compensated, however, in the rapid gain in strength, general nerve, and vital tone made by my patients, not a few of whom became so much attached to bicycle riding that they obtained wheels of their own, have become experienced riders, and have ceased to pay doctor's bills, whereby a number of them have each saved enough to more than pay for several first-class bicycles.

Miss W., a young woman 28 years of age, had been for a number of years a chronic nervous invalid. Her maladies were so obstinate in character that her friends had nearly despaired of her recovery. In accordance with my advice, she learned to ride a Columbia bicycle, by the aid of which, in connection with other treatment, her health was so greatly restored that she was able to return to her friends in excellent spirits and substantially relieved from all her chronic ailments,

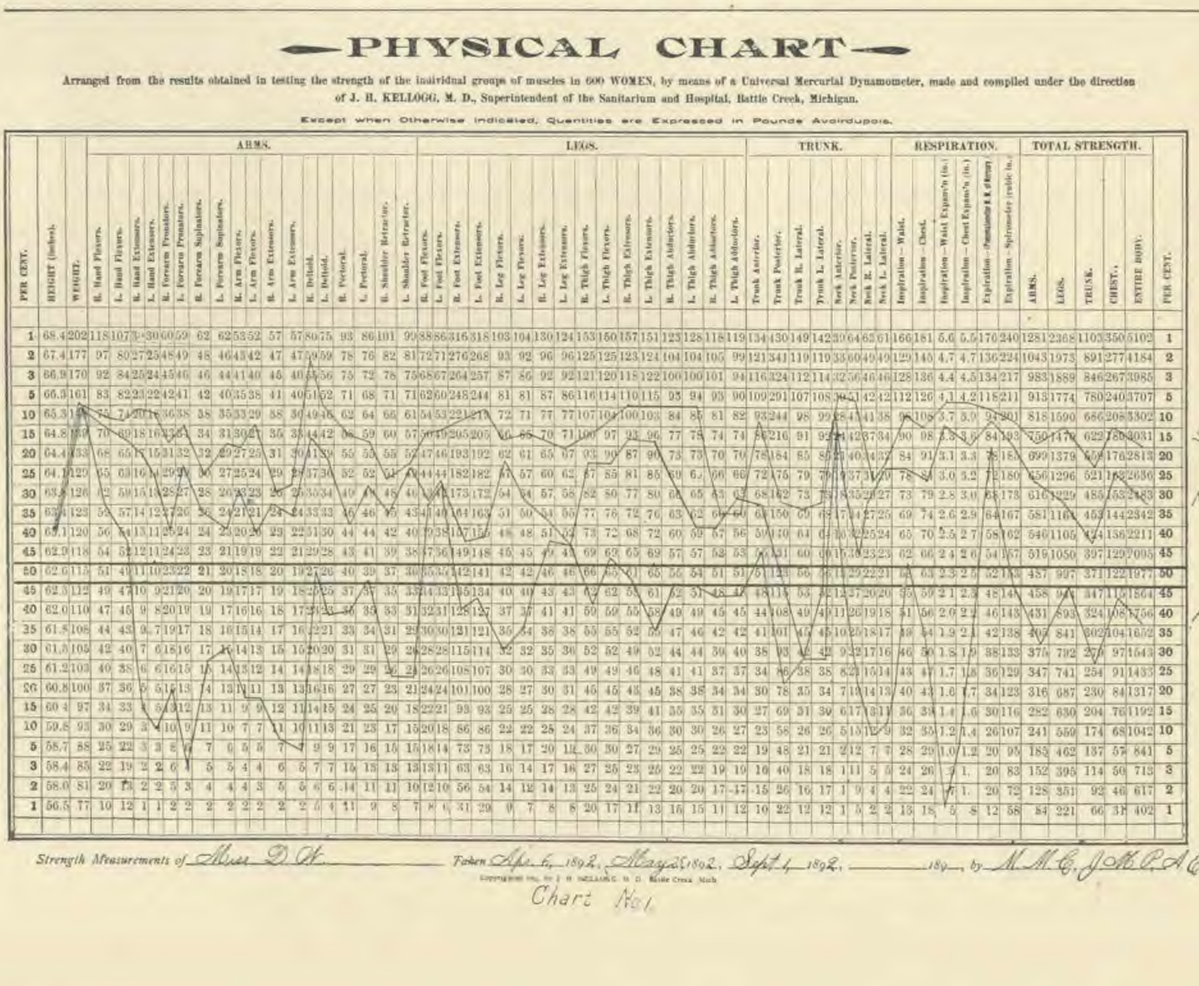
The accompanying chart (No. 1) shows the wonderful gain in muscular strength and symmetry made by this young woman. The first measurements of strength fell, almost without exception, far below the average ; while at the second test all measurements are above the average, and a few points rise above the maximum. It is interesting to note the changes which occurred in individual groups of muscles. The muscles of the fore-arm, which were particularly weak in this case, increased from 181 lbs. to 333 lbs.,—that is, the combined strength of all the muscles of the fore-arm, which at the first test was only equivalent to lifting 181 lbs., increased from the exercise of bicycle riding to 333 lbs. There was also a very notable increase in the strength of the shoulder muscles, which more than doubled. The total strength of the arms increased from 380 lbs. to 800 lbs. ; the legs from 953 lbs. to 1650 lbs. ; the trunk from 270 lbs. to 510 lbs. ; the chest from 115 lbs. to 219 lbs. ; while the total lifting capacity of the whole body increased from 1650 lbs. to 3010 lbs.

Here is another equally interesting case. Miss F. W., a young lady, was brought here by her parents to the Sanitarium in a condition of such complete nervous exhaustion that we had no hope of restoring her to anything like sound health in less than a year. Her friends placed her under treatment with the understanding that not less than one year would be required to secure any considerable

—PHYSICAL CHART—

Arranged from the results obtained in testing the strength of the individual groups of muscles in 600 WOMEN, by means of a Universal Mercurial Dynamometer, made and compiled under the direction of J. H. KELLOGG, M. D., Superintendent of the Sanitarium and Hospital, Battle Creek, Michigan.

Except when Otherwise Indicated, Quantities are Expressed in Pounds Avoirdupois.



Strength Measurements of Miss D. W. Taken Apr. 6, 1892, May 2, 1892, Sept. 1, 1892.

Chart No. 1

degree of improvement. The young woman was so weak she could stand but a short time, could scarcely sit erect. Chart No. 2 gives a graphic representation of the condition of her muscular system at the beginning of treatment, and also after a few weeks of treatment and bicycle riding. The length of time which elapsed between the two tests was exactly 43 days. At the end of that time the young woman's total strength had increased from 1450 lbs. to 2500 lbs., a gain of half a ton. One of the most noticeable gains was in the muscles of the arms and legs, particularly the latter. The leg muscles had gained in strength from 900 lbs. to 1450 lbs. The arm muscles gained nearly 50 per cent, and the strength of the chest muscles had doubled. The total strength of the muscles of the thighs, which are especially used in this exercise, was increased from 394 lbs. to 728 lbs. The young woman had been completely transformed from a feeble, nervous, discouraged invalid, to a bright, rosy-cheeked, vigorous young woman. She came into my office one day about the time the second test was made, saying, "Doctor, I rode 15 miles on my wheel yesterday, on a country road, without stopping, and tired out a vigorous young man, who was so badly used up he has had to stay in bed to-day to get rested." At the time of this writing the young woman declares herself to be enjoying better health than ever before.

Another case which perhaps still better illustrates the great value of the bicycle as a means of aiding feeble women to recovery, is that of a young woman who had been a completely bedridden invalid for three years. For many months she had been treated for what her physicians declared to be inflammation the spinal cord, a disease from which complete recovery rarely occurs. I found, in addition, difficulties which required a serious surgical operation. The accompanying chart (No. 3) exhibits the gain in strength made by this young woman under a careful course of physical training accompanied by appropriate treatment, of course, the prescribed exercise including bicycle riding. This young woman was very much afraid to undertake the bicycle on account of the serious inflammatory troubles from which she had suffered, and the grave nature of the nervous affection from which, according to the diagnosis of several eminent physicians, she had suffered for several years; nevertheless, with the assurance that I would be responsible for the consequences, providing she was careful not to break any bones, she ventured

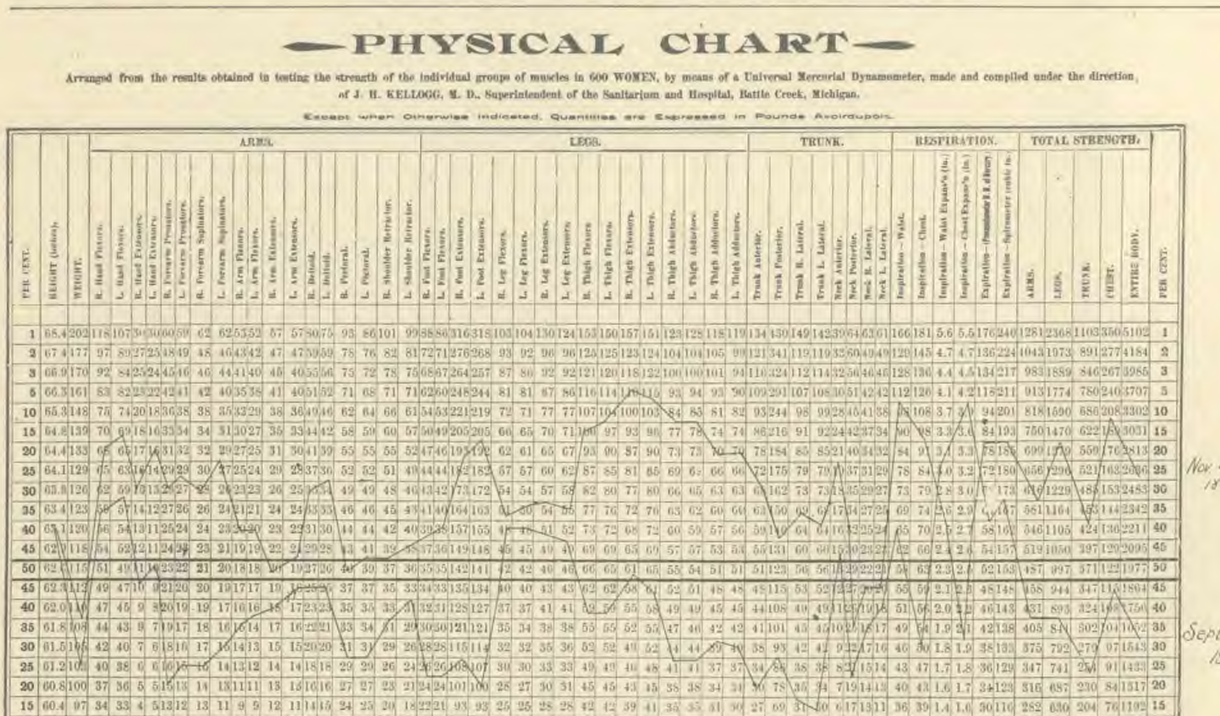


Chart No. 2

to make the trial, and although somewhat discouraged by her first efforts in consequence of her feebleness, and hence inability readily to gain the art of balancing upon the wheel, she soon learned to ride excellently well, and became so much in love with the bicycle that she obtained a first-class Columbia and went home to ride it.

So we lost a patient and the bicycle manufacturers gained a customer; but our patient considers herself the greatest gainer of all, as will be readily recognized by the fact that her total strength increased from 750 lbs. to more than 2500 lbs. The difference between a young woman whose total lifting capacity is only 750 lbs. and one whose lifting capacity is as much as an ordinary horse can pull, is very imperfectly represented even by these figures, as the gain in nerve tone and in mental and nerve vigor, in buoyancy of spirits, and in capacity for active and useful work, is vastly greater. The gain in the strength of certain muscles was in this case very remarkable. In the case of the muscles of the trunk, for example, which had become extremely weak from lying in bed, the proportion of gain in strength was fivefold.

There is no better form of exercise for increasing the strength of the muscles of the trunk than bicycle riding. The trunk is a weak point with the great majority of women. Weakness of the muscles of the trunk is the principal cause of backache and of the great share of the peculiar ailments from which women suffer. This young woman is at the present time rejoicing in splendid health, for which she is probably as much indebted to the bicycle as to me.

—PHYSICAL CHART—

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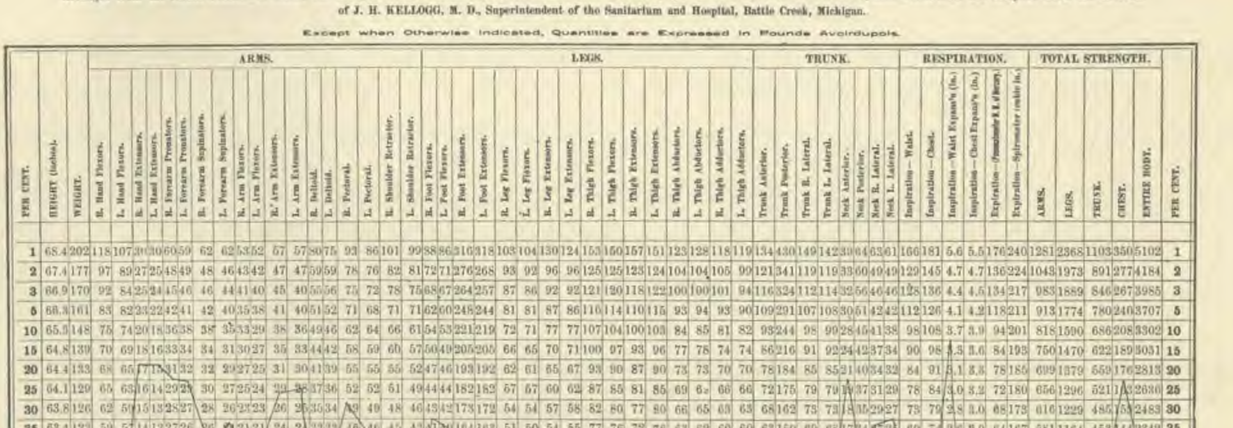

Strength Measurements of Miss E. B. — Taken Nov. 23, 1891, July 21, 1892, —— 189—, —— 189—, by E. M. C.

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Chart No. 3.

WHEN God would secure to man the highest, best balanced, most long-continued action of mental and moral power, he does it by giving him a sound physique.— *Mark Hopkins.*

IT is said that John Ericcson, though working from twelve to fifteen hours a day, always walked the streets of New York from 10 o'clock until midnight for exercise.

CHILD-TRAINING.

[A lecture delivered before the Missionary Mothers' Class, by J. H. Kellogg, M. D.]

(Continued.)

MANY people have little idea how to train children, because they have not been trained themselves. How should they have any idea of the proper care of children? Huber, the blind Swiss naturalist, spent sixty years of his life studying bees through other people's eyes. He planned all sorts of experiments with bees, and carefully noted the results, and thus he learned more about bees than was ever known before. His book on bees is one of the most remarkable and interesting works on natural history that was ever written. For sixty years he had been sitting at the feet of bees, as it were, and studying them. Then there was Sir John Lubbock, the eminent English naturalist, a nobleman and a wealthy man, who devoted many years of his life to feeding and tending ants. Just picture that great man feeding a little ant! He afterward wrote a wonderful book about ants. At the present day there are hundreds of eminent men who are devoting themselves entirely to the study of these little objects in nature.

Pasteur, a great French physician, has devoted years of his life to the study of scums, slimes, and molds. His great researches resulted in the discovery of germs, and by studying them thoroughly he found that they were often the cause of disease. He has explained this matter so that now we understand the origin of scores of diseases, and how they may be prevented.

Prof. Loeffler, of Germany, discovered the germ capable of producing typhoid fever, and he tested his discovery in this way: In Southern Europe, especially in Thessaly, there was a terrible scourge of field mice. They were destroying the grain so that people were in danger of starvation. Prof. Loeffler went down there with his little germ, and inoculated some of those field mice with the typhoid fever germ, and then let them go free. Some of the grain through which these germs had been diffused, was distributed to the farmers, who put it into the holes of the mice. Soon great numbers of the mice were taken sick and died, and others ate their dead bodies, and so contracted the disease, and thus the whole plague of mice was swept away by the little typhoid fever germ, and the people were saved from starvation.

Thus you see how great men have devoted their lives to the study of bees, ants, and germs — the little things of nature, and what great results have followed. Now turn from these things, and the thousands of great men who are worshiping at their shrine, to look at these little children! How much more interesting is a little child, with a soul as well as a body, with the possibilities of an eternity of existence! Consider that for that little child, everything depends upon the conditions with which it shall be surrounded, and the mould into which it shall grow. When we stop to think that the formation of this mould depends upon the mother or the teacher or the trainer of that child, the responsibility becomes so great as to be beyond estimate. Who can measure the responsibility which rests upon the person who has the opportunity of training a child? Could we possibly imagine a more beautiful work than that of taking this undeveloped mind and putting into it the things that ought to be there, and then seeing the effect as we watch it from day to day? But the trouble is, the one who has the care of the child too often goes to work in a hap-hazard way. The child has faults, and the trainer sees them, but does not understand the cause of them. She does not know what makes the child do wrong. The mother says, "What makes my child do this or that?" She does n't know. But she ought to know enough of the men-

tal psychology of the child to understand the reason why the child commits some particular act which perhaps seems to her to prove him totally depraved. There is a reason for it. There is always a reason for a child's faults. The mother needs to study the needs of her child, and she needs to be well versed in both mental and moral hygiene.

You may say, "This is a great work; who is sufficient for it?" The mother, then, needs sufficient skill deftly to meet any emergency that may arise in the physical, mental, or moral condition of the child. This is indeed a great work. It needs constant diligence, constant observation, and constant exercise of tact. The mother must not be off her guard for a moment. She must know what is going on around her every moment. But there is great compensation for all this. The mother, or the nurse, or the teacher,— whoever has the training of little ones, receives greater benefit from the training than does the child. She has the highest incentive for training herself; for she cannot undertake with safety to teach a child self-control unless she can control herself. I do not believe there is any other kind of work that is so uplifting in its tendency as is this work of training up children to a high and noble life, of endeavoring to help the little mind to grow up and expand, watching the developing bud, as it expands, and feeling that you are putting your own soul into it.

The reason why Sir John Lubbock found his work so interesting, was because he was looking into the inner life of the ants. It was not the exterior of the ant, but what the ant did, that he was watching; and from what it did, he interpreted its purposes. By this study he developed the wonderful fact that the ant, in its work, showed evidence of intelligence and ability to design; and he announced to the world that the ant was an intelligent creature.

When Huber studied the habits of the bees, he did it for the purpose of looking into their inner lives, to learn their nature and habits. From these studies the great bee-keeping industry has been developed.

The teacher cannot fail to find the training of children interesting when she touches their inner lives. When she brings her life into close contact with the life of the child, she can see her own soul developing in the life of that little one. That is the kind of mother or teacher who will see good results as the fruit of her labor.

(To be continued.)

I WOULD N'T BE CROSS.

I WOULD N'T be cross, dear, it 's never worth while,
Disarm the vexation by wearing a smile;
Let hap a disaster, a trouble, a loss,
Just meet the thing boldly, and never be cross.

I would n't be cross, dear, with people at home,
They love you so fondly; whatever may come,
You may count on the kinsfolk around you to stand,
Oh, loyally true in a brotherly band!
So, since the fine gold far exceedeth the dross,
I would n't be cross, dear, I would n't be cross.

I would n't be cross with a stranger, ah, no!
To the pilgrims we meet on the life path, we owe
This kindness, to give them good cheer as they pass,
To clear out the flint stones and plant the soft grass;
No, dear, with a stranger in trial or loss,
I perchance might be silent, I would n't be cross.

No bitterness sweetens, no sharpness may heal
The wound which the soul is too proud to reveal.
No envy hath peace; by a fret and a jar
The beautiful work of our hands we may mar.
Let happen what may, dear, of trouble and loss,
I would n't be cross, dear, I would n't be cross.

—*Margaret E. Sangster.*

ONE LADY'S OPINION.— A writer in the *Christian Union* says: "I know a lady who will admit, now that she is really reformed, that three weeks of tight lacing will thicken her skin like a piece of parchment, and make her believe that her husband is in love with some one else; that her cook steals the sugar; that her diamonds are paste; and that her baby is going to die if it has wind on its stomach."

A YOUNG miss of eight summers was asked about her brother, who was ill with the fever. The doctor had taken his temperature just before she left home, and found that his fever was not nearly so high. "Oh, brother Frank 's better," she answered the questioner. "The doctor took his *diameter* this morning, an' it 's much smaller."

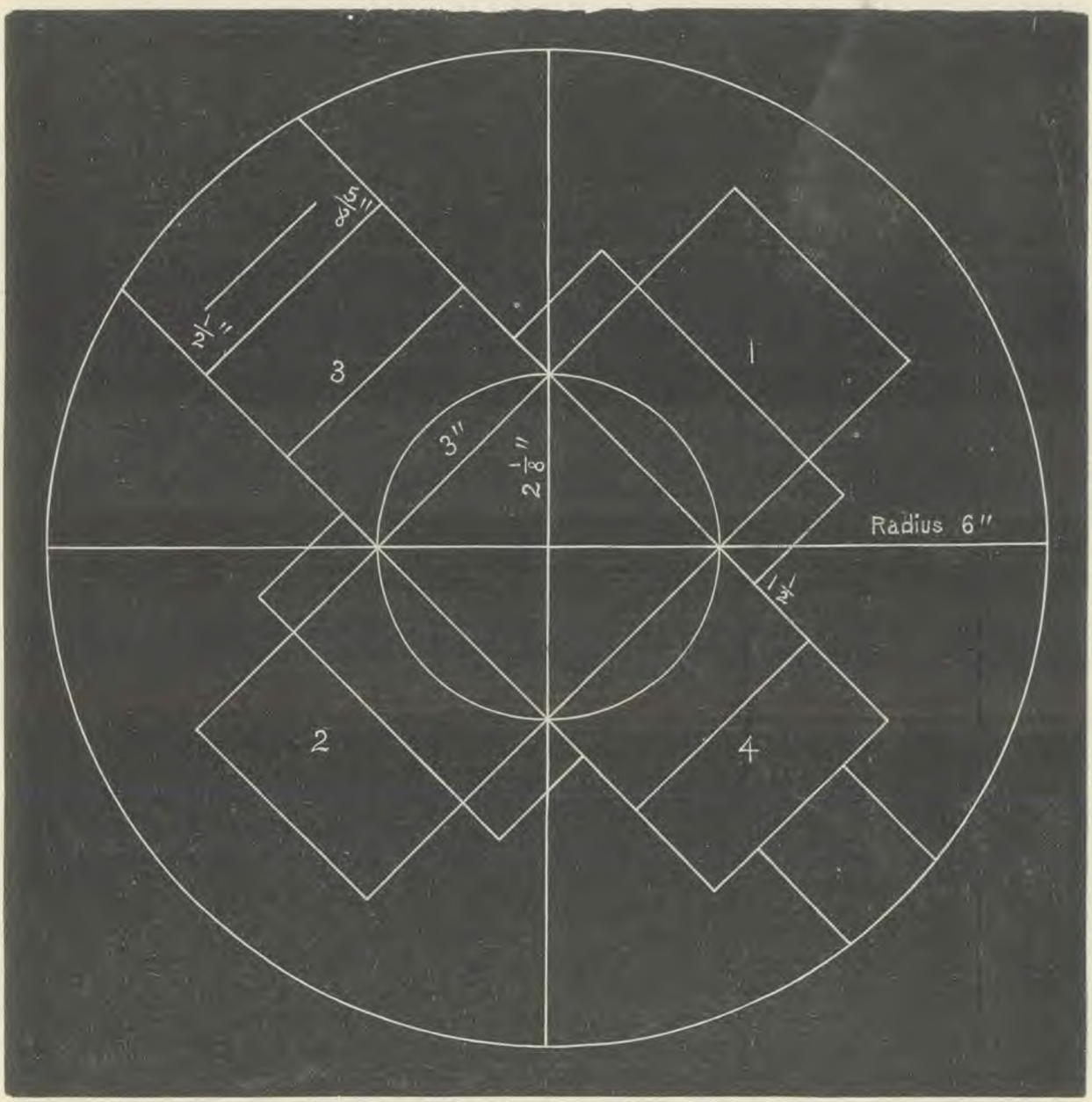
IF we have induced a young man to spend his evenings properly, we have solved the problem of the young man's life. In a certain pass in the Alps there are crosses that mark where men have perished. If crosses were erected in our city streets for every young man destroyed in the evening, we would not be able to transact business.— *Rev. Jno. F. Duston.*

SLOYD WITHIN A CIRCLE.— NO. 6.

BY MRS. M. F. STEARNS.

WE are all buying and selling, giving and taking, in more ways than we are aware of. In everything we say or do, we are giving either good or bad to others, which sooner or later will react upon ourselves, and we shall take again in good or bad what we give — usually with compound interest.

"With what measure ye mete, it shall be measured to you again," is universally true in all we do. As the child tosses his rubber ball that it may rebound again to his hands, so let him early learn that every act will return again, with a corresponding force to that put into it.



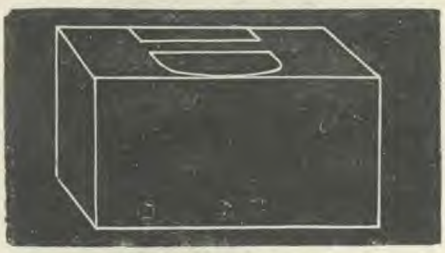
MODEL NO. 7.— WORKING DRAWING.

Every effort put forth to work correctly, brings a like ability to work; the little toiler, while constructing his models, is doing more than forming an attractive present for some friend; he is shaping

a model of his future, he is *giving;* and whether it be faithful, earnest work, or careless, slack work, the profits and losses will surely follow in exact proportion.

"Our to-days and yesterdays
Are the blocks with which we build."

Besides this future value in all we do, there is a present value apparent in the attractive results that patient work and thought always yield. Nothing so



MODEL NO. 7.—SEED BOX.

well teaches the relative value of things as hand work. It is a good thing occasionally to pay a child for an hour's hard work, just what a grown person would receive for a similar effort, at the same rate, perhaps, that the child's father receives for his time; suppose it is twenty-five cents per hour. An hour to a child seems twice as long as it does to an adult, and if it is an hour of hardest effort, he will then have an idea of the meaning of pennies that he has never had before, and will receive a lesson in economy that he will always remember. He will soon learn to think of the cost of everything. The suit of clothes he wears and tears and soils will receive greater care when he is told they cost fifteen or twenty hours of hard work such as *he* gave; and perhaps the substantial, every day food at which he sometimes grumbles, will be eaten with a better relish, at any rate it will be better appreciated, when he knows that he eats up a suit of clothes every week, or a day's hard work, a nice story book, or some other article of equal value.

It is surprising how in this way the interest of children may be awakened to learn the comparative values of articles, time, and labor; and the value of hand labor, as shown in Sloyd, affords an excellent opportunity of teaching the lesson.

To make the paper seed box, divide the 12 inch circle into four equal parts, spread the compasses 2⅛ inches, and describe a small circle in the center of the large one; connect the points where the circles cut the bisecting diameters with straight lines. On each side of this square construct a similar square, and divide into two equal parts. On the lower half of squares 1 and 2 draw margins ½ inch wide. On square 3, measure ⅝ inch in from each outer edge, and cut to opposite point. Measure ½ inch above this, and cut another line parallel to this. Extend lines 5 and 6 of this square to outer circle. On square 4, measure ⅝ inch, and draw straight lines to outer circle. Cut out and fold on crossed lines, and the model is completed.

YOUNG GIRLS AND THE WORLD'S FAIR.

FIFTEEN of Chicago's largest and most influential philanthropic societies have united in sending out a notice to parents and guardians all over the country, warning them against allowing young girls to go to the Fair without suitable escort. The preamble and suggestions, briefly stated, are as follows: —

"We, the members of the societies of Chicago, interested in the welfare of women, who are in a position to know the dangers here threatening young, inexperienced, or thoughtless girls, give this warning to mothers and guardians of such young persons as may visit Chicago during the World's Fair: —

"1. If possible, accompany your daughters on their visit to the World's Fair, but under no consideration permit them to leave home without the escort and supervision of a trustworthy person of mature age and experience.

"2. If you have no relatives or friends with whom you can stay while in the city, or if you are unable to put up at a first-class hotel, be careful in your selection of a boarding place. Beware of the 'nice, quiet resort for ladies' recommended by some dashing stranger. Some of these places are in fact assignation houses. If you are without acquaintances in Chicago, address the Woman's and Children's Protective Agency, Room 828, Opera House Building, Chicago, Ill., who will refer you to some person who has decent rooms to rent. If you should arrive in the city after business hours, alone and friendless, it would be wise to ask information from the janitress in the ladies' waiting room at any depot, and to remain under her protection during the remaining hours of the night.

"3. Make no hasty acquaintances on the cars.

"4. The newspapers will be full of advertisements of 'light work and good wages for young girls.' Agents are going throughout the country districts with the same suggestions. Accept no offer

until after thorough investigation of the nature of the work, and the character of the persons advertising."

There will doubtless be sufficient respectable accommodation for all who may wish to visit the Fair, and at a price that will admit even the poorest; and with the plain directions given above, it would seem that no one need be misled by unscrupulous parties. It may be in place to mention here that the Battle Creek Sanitarium has opened a branch at Chicago in part for the accommodation of its old friends and patrons who may wish to visit the Fair, and who may desire to avail themselves of the protection and advantages afforded by such an institution.

TIGHT LACING IN ENGLAND.

THE idea that tight lacing is going out of fashion is quite a mistake. The healthy agitation made by dress reformers affects but a comparatively small number of women. The great majority of these, at least in fashionable circles, are still as much as ever addicted to tight lacing. Recently a representative of a prominent English journal called upon a number of the leading corset manufacturers. The following is a report of one of the interviews: —

"'I am reputed,' she said, 'to have the tightest-lacing customers in London; and I think that some of the waists my stays encircle would be hard to beat. I think that some of my customers positively like the sensations produced by tight lacing, or they would never take all the pains they do to get thin, such as dieting and sleeping in corsets, as some of them do.'

"'Sleeping in corsets!' I exclaimed.

"'Oh, yes; a good many, especially young ladies, do; an opera-riding stay is a favorite make for the purpose. Let me think. Yes. The largest pair of corsets I have made had a waist measurement of 35 inches. The smallest — well, you won't believe me, perhaps, but 12½ inches was the size.

"'No, I don't think she'll be able to get them close. Every inch under fifteen, with most ladies, means a tremendous lot of lacing in. I've known a young lady to break five or six silk laces, as strong ones as are made, in getting a pair of new stays close.'

"'How small is your pretty assistant's waist?' I asked.

"'Generally about fourteen to fourteen and one half inches. I find it best for all my assistants to have trim figures; but she has tight-laced to that extent entirely of her own free will. Many of my customers lace to seventeen, sixteen, and even fifteen inches. I suppose you haven't seen a smaller waist than Miss ——?'

"'No.'

"'Would you like to?'

"'Yes' I replied, 'if such a thing is practicable.'

Mrs. Smith rang a small bell. 'Ask Miss Jones to come to me.'

"In a few minutes the young lady appeared, and Mrs. Smith and she went into the alcove. Another assistant was summoned, and then a whispered consultation took place. After a minute or two we heard Mrs. Smith ask: —

"'Can you bear it?' and the answer, 'Quite, madam.'

"Mrs. Smith's voice again: 'There, Miss Jones, I think the laces are close; tie them tightly.'

"Two or three minutes later Mrs. Smith and Miss Jones came out from the alcove, the latter incased in a long-waisted, black satin corset, *which made her waist look scarcely larger than her throat.* It seemed incredible that any woman could breathe and move, let alone move about, without much apparent discomfort, when tight-laced to such an extent.

"'I suppose,' said Mrs. Smith, smiling at my look of astonishment, 'that you will now believe what I told you before, namely, that a well-cut corset and strong arms will make a woman's waist almost any size she may wish.'

"'See,' she exclaimed, taking up a measuring tape off a chair, 'Miss Jones's waist is just thirteen to thirteen and one quarter inches.'

"Mrs. Smith said, just as we were leaving: 'You know, I think tight lacing becomes a positive mania with some women. There are two of my customers, for instance—theatrical people—who usually wear their waists about nineteen inches. Well, when at home they both lace as tightly as their maids can do it.'

"Another states that at some schools the girls are not only encouraged, but forced to lace.

"Five different women said that they made corsets for girls of thirteen and under with waist measurements of fifteen inches, and all agreed that girls are put into corsets at a much earlier age than formerly."— *Sel.*

ASPARAGUS.

THE asparagus is a native of Europe, and in its wild state is a sea-coast plant. The young shoots form the edible portion. The plant was known to the ancient Greeks and Romans, who not only used it as a table delicacy, but considered it very useful in the treatment of internal diseases. Roman cooks provided themselves with a supply of the vegetable for winter use by cutting fine heads and drying them. When wanted, they were put into hot water and gently cooked.

The asparagus is remarkable as containing a crystalline alkaloid called *asparagin*, which is thought to possess diuretic properties.

Select fresh and tender asparagus. Those versed in its cultivation, assert that it should be cut at least three times a week, and barely to the ground. If it is necessary to keep the bunches for some time before cooking, stand them, tops uppermost, in water about one half inch deep, in the cellar or other cool place. Clean each stalk separately by swashing back and forth in a pan of cold water till perfectly free from sand, then break off all the tough portions, cut in equal lengths, tie in bunches of half a dozen or more with soft tape, drop into boiling water barely sufficient to cover, and simmer gently until perfectly tender.

If the asparagus is to be stewed, break (not cut) into small pieces; when it will not snap off quickly, the stalk is too tough for use.

Asparagus must be taken from the water just as soon as tender, while yet firm in appearance. If boiled soft, it loses its flavor and is uninviting. It is a good plan when it is to be divided before cooking, if the stalks are not perfectly tender, to boil the hardest portions first. Asparagus cooked in bunches is well done, if, when held by the thick end in a horizontal position between the fingers, it only bends lightly and does not fall heavily down.

The time required for boiling asparagus depends upon its freshness and age. Fresh, tender asparagus cooks in a very few minutes, so quickly, indeed, that the Roman emperor Augustus, intimating that any affair must be concluded without delay, was accustomed to say, "Let that be done quicker than you can cook asparagus." Fifteen or twenty minutes will suffice if young and fresh; if old, from thirty to fifty minutes will be required.

Asparagus and Peas.— Asparagus and green peas make a nice dish served together, and if of proportionate age, require the same length of time to cook. Wash the asparagus, shell and look over the peas, put together into boiling water, cook, and serve as directed for stewed asparagus.

Asparagus Points.— Cut off enough heads in two-inch lengths to make three pints. Put into boiling water just sufficient to cover. When tender, drain off the water, add a half cup of cream, and salt if desired. Serve at once.

Asparagus on Toast.— Cook the asparagus in bunches, and when tender, drain and place on slices of nicely browned toast, moistened in the asparagus liquor. Pour over all a cream sauce prepared as directed below.

Asparagus with Cream Sauce.— Thoroughly wash tie in small bunches, and put into boiling water; boil till perfectly tender. Drain thoroughly, untie the bunches; place the stalks all the same way upon a hot plate, with a dressing prepared as follows: Let a pint of sweet cream (about six hours old is best) come to the boiling point, and stir into it salt to taste and a level tablespoonful of flour rubbed smooth with a little cold cream. Boil till the flour is perfectly cooked, and then pass through a fine wire strainer.

Asparagus with Egg Sauce.— Prepare and cook asparagus as directed above. When tender, drain thoroughly, and serve on a hot dish or on slices of nicely browned toast, with an egg sauce prepared in the following manner: Heat a half cup of rich milk to boiling, add salt, and turn into it very slowly the well-beaten yolk of an egg, stirring constantly at the same time. Let the whole just thicken, and remove from the fire at once.

Stewed Asparagus.— Wash, break into inch pieces, simmer till tender in water just to cover, add sufficient rich milk, part cream if convenient, to make a gravy, thicken slightly with flour, a teaspoonful to a pint of milk; add salt if desired, boil up together once, and serve.— *Science in the Kitchen.*

OATMEAL AND ORANGES.— No sort of food is better for the complexion than oatmeal and oranges. The finest complexions in the world are those of the Italian and Spanish ladies, who live largely on coarse-grained food and fruit, like the orange or banana. It is said that the fact is becoming appreciated, and that some ladies, to acquire and preserve a good complexion, are living almost entirely on oranges. Half a dozen for breakfast, a dozen for lunch, with a crust of bread, a glass of milk, and a saucer of oatmeal, will bring a complexion of peach and ivory which will drive almost any belle out of her head with envy. — *St. Louis Globe-Democrat.*

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

EYE DETERIORATION.

In a recent lecture before the Franklin Institute, Dr. Fox called attention to the fact that the normal human eye is far-sighted. He showed that mammalia in general possess far-sighted eyes, and that the same is true of the Indian and other savage tribes. The white civilized man alone is near-sighted, and near-sightedness is coming to be a more and more common condition among civilized races. This is unquestionably the result of too much occupation of the eyes with near objects.

Diseases of the eye are also very much more frequent among civilized people than among savages. This is doubtless the result of many unhygienic conditions to which the eye is exposed. Among the lower animals and savages, the unhygienic conditions affecting the eye are less common than among civilized human beings. Messrs. Lang and Barrett made an exhaustive study of the optical conditions in the horse, cow, cat, rabbit, rat, mouse, and guinea-pig; they found far-sightedness the prevailing condition in all of these animals.

Humboldt speaks of the wonderful power of distance vision which he observed in the South American Indians; and a traveler in Russia tells of a guide who was born and reared in the forest, who could see the rings of Saturn.

Near-sightedness is very rare among savages, although it occasionally occurs even among lower animals. Of five rats examined by Lang and Barrett, one was near-sighted. A single near-sighted cow was found among six which were examined.

In an Indian school Dr. Fox found near-sightedness increasing with the amount of near work done by the pupils. Among the Creeks, an Indian tribe that has been semi-civilized for many years, near-sightedness was found to be the leading eye defect.

An investigation made among the students of Munich shows the proportion of near-sightedness in 1000 boys of each of the following classes to be as follows: —

First elementary class, 36; second, 49; third, 70; fourth, 94; fifth, 108; an increase of threefold from the first to the fifth class. Among the girls, the increase was from 37 to 119.

Prof. Pflüger found among 45,000 German school children more than one half suffering from defective eyesight. In some schools so high a proportion of near-sighted persons as 70 to 80 per cent were found. And in the Heidelberg gymnasium, every student was found to be near-sighted. These facts clearly justify the assertion by a prominent eye surgeon, that we are likely soon to be known as "a spectacled race." Near-sightedness is due to the abnormal length of the eyeball; this condition of the eye is frequently developed by an effort to see, or straining the eye; hence, anything which taxes the eye, such as defective light, reading by flickering light, reading bad or fine print, reading on railway trains, or when lying down, exposure to too strong light, which causes contraction of the pupil; cross light in school rooms, improper lighting, as when strong light falls directly upon the eyes, thereby causing contraction of the muscles which control the pupil, causing elongation of the eyeball; sudden changes from light to shade,— these are some of the most important means by which the eye is injured in such a manner as to cause near-sightedness.

Among the first symptoms of failing sight should be mentioned excessive secretion of tears; loss of the eye lashes; styes; redness of the eyes; burning of the eyelids; slight adhesion of the lids in the morning; or secretion in the corners of the eyes. Such symptoms should never be neglected.

During illness, when the body is weak, and the eyes of course in sympathy with the rest of the body, great care should be taken to avoid exposure

of the eyes to too strong light; hence, the bed should never be placed so that the light will fall directly upon the eyes of the sick person.

Savages long ago discovered that excessive light is frequently the cause of blindness. The natives of Alaska make protectors for their eyes from the pine wood which is washed upon their shores. These "snow eyes," as they call them, are very ingeniously constructed. They consist of blinds having a narrow slit, the upper end of which projects to act as a shade. The posterior surface is hollowed out so as to allow free motion of the eyes. The natives of Northern Africa blacken their faces about the eyes to prevent inflammation from the glare of the hot sun. The natives of Fiji also blacken their faces when they go fishing, to protect their eyes from the reflection of the bright sunlight from the water.

A famous French surgeon cured a distinguished patient who was suffering from serious eye trouble, by sending him into the country to look upon green fields. The eyes of children are greatly benefited by the rest afforded by the soft and soothing influence of the color of a country landscape. The glare of white pavements and granite walls of cities, and the absence of the soft colors of the country, are very trying to the eyes of children.

A very forcible illustration of the sad results of the abuse of the eye is found in the person of the great poet Milton, who wrote as follows: "My father destined me, from a child, for the pursuits of polite learning, which I prosecuted with such eagerness that, after I was twelve years old, I rarely retired to bed, from my lucubrations, till midnight. This was the first thing which proved pernicious to my eyes, to the natural weakness of which were added frequent headaches." The headaches were evidently the result of eye strain, which is probably almost as frequently a cause of headache as is indigestion. Galileo, the great astronomer, affords another forcible illustration of the result of excessive eye work, which in his case also resulted in blindness. It was said of him, "The noblest eye which ever nature made is darkened — an eye so privileged, and gifted with such rare power, that it may truly be said to have seen more than the eyes of all that are gone, and to have opened the eyes of all that are to come."

STERILIZED BUTTER.

The *Doctor of Hygiene*, edited by Cyrus Edson, M. D., health officer of the port of New York, published in a recent issue the following from the *London Lancet*:—

"It is generally known that milk affords a dangerous vehicle for the dissemination of disease, but that this undesirable property is shared by butter is information at once of a novel and startling kind, and such as should put us on our guard. Yet, according to recent researches, there were contained in one dram of butter (as much as would go on the point of a knife) 2,465,555 micro-organisms from the center of the pat, and as many as 47,250,000 on the outside. In fact, in some cases it is tolerably certain, it is stated, that the number of organisms swallowed with a moderately large piece of bread and butter may exceed that of the whole population of Europe. Butter kept in a refrigerator showed a marked reduction of the number of bacteria — a result which is also obtained by the addition of common salt. Samples of artificial butter, curiously enough, were invariably found to be much poorer in bacteria than ordinary butter; thus while the smallest number found in one dram was 747,059, in real butter considerably over two million microbes per minimum. Two varieties of bacilli have been isolated and described; and inasmuch as they were found to be constantly present in butter, they were probably specific microbe organisms of a non-pathogenic character; but at any rate it seems clear that butter, as well as milk, is capable of carrying and fostering organisms, and on this account it behooves us, under certain circumstances, to melt our butter to the boiling point in addition to boiling milk."

The facts stated in this paragraph are not new to the readers of this journal, as we have frequently taken occasion to state them as they have been reiterated in various articles. It has appeared singular to us that sanitary authorities and journals have given this matter so little thought. This method of securing sterilized butter, however, is not a very satisfactory one, as very few persons could be induced to eat butter which has been melted or boiled. A better method is to sterilize the milk before the butter is made. By this method all dangerous germs can be completely excluded, and the butter retain those qualities which render it palatable as an article of diet. This method has been employed at the Sanitarium for more than a year.

KEELEY LUNATICS.— The *Texas Sanitarian* gives the following partial list of persons who have been rendered insane by the "Keeley Cure:"—

"Walter B. Earle died a raving maniac in the Poughkeepsie Insane Asylum; Luther Renson, of Indianapolis, is now in an insane asylum; Isaac Mailhouse, 364 Wynne St., New York City, is said by his friends to be on the verge of insanity; C. N. Vaughan, of Denver, became insane February 24, and tried to murder his landlady; Col. Mines and James C. Fair, Jr., died, their physicians claim, from the Keeley Cure; Ex-Congressman Stephen T. Hopkins, late president of the White Plains Bi-chloride of Gold Club, was 'cured' of the whisky habit and then committed suicide; Harry H. Ainsley, of St. Joseph, Mo., died February 21, while under treatment; lawyer Isaac Angel, of New York, was made a physical wreck by the Keeley treatment, and now is seeking legal redress. The last victim was a Mrs. Evelyn Garretson, of 30 Garden Avenue, Hoboken, N. J., April 8."

The writer has had under his care a number of persons who had been under the Keeley Cure. Two of these patients were made insane by the treatment, but had partially recovered. Another had "never been himself" since the treatment. The editor of the *National Popular Review* made a visit to Dwight some time ago, and states as the result of his investigations and observations there, "We can safely assert that a greater humbug than the Keeley Cure never existed." The editor adds: "All that we have to say to inebriates is, Join the Salvation Army, but steer clear of the mercenary and dangerous Keeleyite."

The Keeley Cure is struggling to keep its head above water, although in a fair way to be soon submerged by the return wave of public opinion, which is daily rising against this empirical method of dealing with a malady which is, in a large number of cases, more a mental and moral than a physical disease. The *Popular Science Monthly*, in a recent article entitled, "Specifics for the Cure of Inebriety," remarks as follows: —

"Within two years a large number of charlatans have appeared, claiming to have found remedies and specifics for the certain and permanent cure of the drink disease. Recently one of these empiric specific cures has led all the others in boldness and prominence. Large numbers of persons who claim to be cured have organized into clubs, and display hysterical enthusiasm to prove the reality of their cure and the greatness of the projector. Dogmatic statements and bold assertions, coupled with savage criticism of those who dare to doubt, together with half-truths and wild theories, mark all the literature of this specific. The commercial side is equally startling and Napoleonic as a business success. The existence of this cure depends on a psychological subsoil, which would favor the growth and culture of any remedy involved in mystery and promising marvelous cures in a brief time. The present epidemic wave is hardly up to the average of former empiric efforts in adroit manipulation of the credulous public.

"In all these inebriety cures, there is a coarseness of methods, with brazen assumptions and display of pecuniary motives, that quickly repels all except the unthinking. The very spirit and hurry of the movement suggest a full recognition of the brevity of the work and the need of active labor before 'the night cometh when no man can work.' Inebriety is literally an insanity of the border-line type, and a general condition of central brain defect, unknown, and at present beyond the power of any combination of drugs. The specific epidemic delusions for the cure of inebriety will quickly disappear, as others have done before, and its real value to science and the world will appear from future psychological studies."

DILATED STOMACH.—The causes of dilatation of the stomach are overeating, distension of the stomach by gas, and the formation of acids in the stomach, which set up a chronic catarrh and cause weakness of the muscles of the stomach. Tight-lacing and wearing belts have the same effect. Blacksmiths usually tie their apron strings tightly around their bodies, throw off their vests and suspenders, so as to give freedom to their arms, and thus their clothing is suspended by their apron strings. One of these men, whom I examined, had a badly dilated stomach. A military officer, who carried a heavy sword in his belt, had a prolapsed stomach and kidney. I have found the same thing in hunters who sustained their clothing by a belt; also in farmers who wore belts. Once in a while I have found a similar condition in women who have worn tight bands around the waist. Statistics recently gathered show that seventy-five per cent of the invalid women who came under our care last year had prolapsed stomachs, and thirty-three per cent of them had movable kidneys, in consequence of restriction of the waist. This is one of the most mischievous infractions of the laws of health with which I am acquainted.

"HE that will not work, shall not sleep," is one of nature's axioms, and you will find it universally true. Work is necessary to sleep.

HONEY AS A FOOD.— Honey is usually considered a healthful article of diet, and a most delectable morsel to roll under the tongue. But from the chemist's standpoint, honey is anything but a delectable morsel. There is in reality no pure honey. It is not adulterated, in the usual meaning of the term, but it is full of other abominations which render it unwholesome as an article of food.

In gathering honey, the bees gather pollen from the flowers, and dust and germs from the atmosphere collect on their wings and bodies, so that by the time they are ready to go to the hive to deposit their load of nectar, they have quite an accumulation of refuse to deposit with it. Chemists have found bits of broken legs, broken wings, and many queer things in honey, and this is one way by which to test genuine honey ; adulterated honey never contains such things. With the nectar the bee also carries off the essence of the flower itself,— its peculiar odor. This gives the honey its flavor,— the same as the flower from which it was gathered. Honey made from buckwheat is always distinguished from that made from clover. There are also volatile substances carried away with the honey, and some of these, in fact all of them, are more or less poisonous. The honey of Trebizond, which poisoned the Greek soldiers some two thousand years ago, is still poisonous. The bees here gather their honey from poisonous flowers, and consequently the honey is poisonous.

In the body of a bee will be found a little sac of poison, from the contents of which the bee injects a drop into every capsule of honey that he makes. This substance is formic acid, and is a deadly poison. This is the poison injected by the sting of a bee, and persons have been killed by a single bee sting. Honey always contains a little of this poison, and that is why some people are always made sick by eating it. A young boy found the poison sac one day, while dissecting a bee, and ate it. He thought it was the bee's honey sac. But he soon found out differently. The poison made him very sick. He had a frightful headache, his head was giddy, his heart palpitated, and he was in great distress for several hours. He recovered, however, but honey has ever since had the effect of making him sick in the same way, if taken in anything but very small doses.

SPECTACLE VENDERS.— More harm than the laity appreciate is constantly resulting from the common practice of patronizing spectacle peddlers who go about the country selling glasses to everybody whom they can induce to buy, with little or no knowledge of the proper adjusting of glasses to individual conditions. Dr. Fox, a prominent eye surgeon, earnestly protests against placing so important an organ as the eye in the hands of these uneducated and often unprincipled venders. He wisely says : "Persons, before submitting themselves into the hands of opticians, should know that they are not suffering from any incipient disease of their eyes. I do not for a moment claim that a practical optician cannot give you a pair of glasses which will make you see ; he does nothing more than hand you a number of pairs of glasses, and you select the one pair which you think answers the purpose. How can any one but a medical man know that the impairment of vision does not arise from diminished sensibility of the retina? If so, the glasses just purchased, which may be comfortable for a time, may cause an irreparable loss of vision. Every ophthalmic surgeon will tell you that he has had a number of such cases. Do not be misguided by purchasing cheap spectacles. Glasses advertised as having 'remarkable qualities' are always to be passed by. They do have 'remarkable qualities ;' they always leave the person wearing them, worse at the end of a few months. Whenever an eye finds relief in a shaded or colored glass, something is going wrong with the interior of that eye. Seek advice, but do not trust the eyes of yourself, much less those of your children, in the hands of the opticians who advertise their examinations free."

EATING BEFORE SLEEPING.— The idea that eating just before retiring is conducive to good sleep is a great mistake. One cannot digest food and sleep well at the same time. He should go to bed with an empty stomach. If your stomach "gnaws so that you cannot sleep," it is because your stomach is in such a weakened state that the grinding of the walls together produces irritation. You should give it a chance to rest, and not keep loading it up every time it tells you it is tired out.

The practice of eating just before retiring is almost a certain means of producing bad dreams, and sometimes nightmare in adults, or "terrors" in children.

ATMOSPHERIC FOOD.— An interesting fact, of which most people are unaware, is that at least three-fourths of our necessary aliment is made up of air. This being the case, the relative importance of pure air and uncontaminated food is three to one. Very few people would be willing to take their ordinary food with so large an admixture of dust as is daily taken with their a rial food. Gaseous dirt is more dangerous than solid filth.

DIET FOR A PERSON SUFFERING WITH DILATED STOMACH.

A PERSON whose stomach is dilated should avoid all coarse vegetables, and such fruits as have a hard, firm flesh, as raw apples, pears, etc. But he can eat all of the grain preparations, and most cooked fruits. Small fruits having a soft pulp are good, such as strawberries, blueberries, peaches, oranges, and grapes. Baked apples are also excellent food.

Cane sugar should be avoided, as it ferments easily, and the stomach being slow in forming gastric juice, it cannot digest the sugar before it has fermented, and produced germs. So cane sugar is one of the worst things to eat for one who has dilated stomach.

Butter is another article of food that should be avoided, because it is always swarming with germs. A Frenchman found 20,000 germs in a quart of milk that was an hour old; and by the time it was twenty-four hours old, it contained 20,000,000 germs. These germs usually rise to the top of the milk, with the cream, and are skimmed off with it, to make butter. So butter made from milk that has not been sterilized is full of germs, and a very unhealthful article of diet for any one, sick or well.

Meat should not be eaten by a person with a dilated stomach. The muscles of the stomach being in a relaxed condition, the stomach cannot empty itself of food, and hence no food should be taken but that which can be readily dissolved, and rendered a pulp.

Peas and beans are hard to digest, unless the skins have been removed by a colander. In that case they are unobjectionable.

A person with a dilated stomach has necessarily a slow digestion, and for this reason should take the food that is most quickly digested. The following table, taken from Mrs. Kellogg's "Science in the Kitchen," may be of some help in determining what foods to eat for one who is so troubled: —

	hrs.	min.		hrs.	min.
Rice	1	00	Eggs, whipped	1	30
Sago	1	45	Salmon, salted, boiled	4	00
Tapioca	2	00	Oysters, raw	2	55
Barley	2	00	Oysters, stewed	3	30
Beans, pod, boiled	2	30	Beef, lean, rare roasted	3	00
Bread, wheaten	3	30	Beefsteak, boiled	3	00
Bread, corn	3	15	Beef, lean, fried	4	00
Apples, sour and raw	2	00	Beef, salted, boiled	4	15
Apples, sweet and raw	1	30	Pork, roasted	5	15
Parsnips, boiled	2	30	Pork, salted, fried	4	15
Beets, boiled	3	45	Mutton, roasted	3	15
Turnips, flat, boiled	3	30	Mutton, broiled	3	00
Potatoes, Irish, boiled	3	30	Veal, broiled	4	00
Potatoes, Irish, baked	2	30	Veal, fried	4	30
Cabbage, raw	2	30	Fowls, boiled	4	00
Cabbage, boiled	4	30	Duck, roasted	4	30
Milk, boiled	2	00	Butter, melted	3	30
Milk, raw	2	15	Cheese	3	30
Eggs, hard boiled	3	30	Soup, marrowbone	4	15
Eggs, soft boiled	3	00	Soup, bean	3	00
Eggs, fried	3	30	Soup, mutton	3	30
Eggs, raw	2	00	Chicken, boiled	3	00

As will be seen by this table, fruits and grains are easy of digestion, while fats and meats require a long time for digestion.

Another important point is, to give the stomach as long an interval between meals as is required by the food for digestion. There should also be a little time between meals, after the food is digested, for the stomach to rest. As a usual thing, an interval of seven hours should be allowed between meals, to allow the stomach time to digest all the food properly, and then to rest a bit before any more is introduced. This may give rise to that "all gone" feeling so many complain of, and there may be an unpleasant feeling in the stomach as the walls fall together; but if the practice is persevered in, and nothing more than perhaps a glass of water be taken, except at the regular times of eating, that feeling will soon pass away, never to return, so long as the individual persists in the use of a wholesome dietary.

PRECAUTIONS AGAINST THE SPREAD OF SCARLET FEVER. — The patient should be completely quarantined against every one but his nurses and the doctor. There should be two nurses, one for the day and one for the night. There should be no communication between the sick room and the rest of the house ; for scarlet fever is very tenacious, and unless every precaution is taken, it is very difficult to prevent its extension.

There is always a possibility that the nurse may contract the disease, from her constant care of the patient. However, no experienced nurse will refuse her services on that account. In the first place, she should dismiss all fears ; for a person who is afraid of taking any disease, is much more liable to contract it. It is possible for one to protect herself against germs by putting a cotton handkerchief over her mouth and nose, as a sort of strainer ; but she should remember that that handkerchief has thus become infected, and should be burned. She should take great care that no portion of the body which has become infected, comes in contact with the mouth or the respiratory organs. Her clothing should be changed every time she leaves the room or goes where she can be in anydanger of infecting others.

There are also precautions to be taken in reference to the patient himself. The most contagious period in the disease is when the skin is peeling off, because the scales which fall off contain germs. At this time the patient should take soda baths, — a pint of soda to 15 or 20 gallons of water, — or should be sponged in a solution in the proportion of a tablespoonful of soda to a gallon of water, and a little carbolic acid may be added, in the proportion of a dram to a pint of water. Further protection against diffusion of germs by means of the fine scales of desquamating skin, is the application of oil to the whole surface of the body, to be applied after the bath.

Some the most serious *sequelæ* of scarlet fever are those affecting the throat and ear. The swelling of the tonsils, the introduction of germs, and the extension of the disease from the throat to the ear, are the most serious causes of suffering and of permanent damage resulting from this disease. But this can probably be prevented. Dr. J. Lawrence Smith has suggested that when a child is taken with scarlet fever, the attendant should at once begin using a spray of peroxide of hydrogen, which is the best of all germicides. Use this every morning and cleanse the mouth thoroughly, and continue its use every three or four hours. This is also an excellent protection against infection, in case of exposure to scarlet fevet or diphtheria. The destruction of germs by this germicide is indicated by the foam which appears when the spray is used.

MASSAGE FOR SPRAINS. — This modern method of treatment has now been adopted in almost every malady and injury, and Dr. Rosenblith has recently added some very useful modifications of the method of treatment of sprains which have heretofore been in vogue, and have been used with some excellent results. He demonstrates very clearly that effusions of blood are rapidly absorbed under the influence of massage instead of being left to burden the tissues and interfere with the normal process. His method is as follows : —

The injured joint is first placed in hot water. The purpose of this is to dilate the superficial blood-vessels. Massage is administered, not to the injured part itself, but outside of it, especially to the tissues lying between it and the heart. The movement gradually approaches the injured joint, and finally a gentle stroking is applied to this, which is gradually increased to quite vigorous friction. By this means the painful part becomes less sensitive, so that a more or less energetic kneading may be practiced, but graduated to the sensibility of the patient. After the application is made, a bandage of flannel is applied with some firmness and placed about the part, and the patient is allowed to walk a little if he can do so without great pain. This method of treating sprains is so entirely different from that ordinarily employed, that it will doubtless be looked upon at first with suspicion ; but from the experience we have had with this method of treating sprains, we feel confident that it is a therapeutic measure that has come to stay, and that it will in time displace the old method of plaster casts and other immovable bandages.

THE TEETH. — In order for the breath to be kept sweet and the stomach in a healthy condition, the teeth must be kept clean. They should be cleansed the first thing upon rising in the morning, and also just before and just after every meal. It is very important that the teeth be brushed thoroughly the first thing in the morning, as then the mouth is full of germs, which have accumulated over night, and unless they are removed from the mouth, they are sure to be taken to the stomach with the food at breakfast, and cause trouble in one way or another. Foul breath is always caused by germs, and the remedy is to keep the mouth clean. An excellent disinfectant for this purpose is cinnamon water.

ANSWERS TO CORRESPONDENTS.

POTATO SKINS — OLIVE OIL. — 1. Are the skins of roast potatoes injurious? 2. Can any one add weight or strength to his body by rubbing with olive oil?

Ans. — The skins of potatoes, whether roasted or boiled, should be discarded. The cuticle of the potato is composed of cellulose, or wood, and is wholly an innutritious substance. The same is true of the coverings of most vegetable products.

2. The strength of the body is increased by rubbing, only through the improved nutrition thereby secured. The oil simply facilitates the rubbing.

FLOATING KIDNEY. — A lady reader in the South inquires: "1. What can be done for a floating kidney? 2. How can a movable kidney be kept from floating? 3. What is the cause and cure of pain in the back? 4. What diet is best for such a case? 5. What is the cause of weakness in the muscles of the back? 6. With one kidney out of place and the other movable, in what position should one lie down?"

Ans. — 1. A floating kidney requires the support of the abdominal walls, and in some instances, a special appliance for holding it in place.

2. For permanent relief, the abdominal muscles must be developed by massage, exercise, and applications of electricity. In bad cases, these means are only palliative, and a surgical operation is required, by which the kidney may be restored to its position and fixed there.

3. Pain in the back may arise from a variety of causes. The most common cause is a diseased condition of the ganglia of the sympathetic nerves of the abdomen, which is usually the result of disordered digestion. Other conditions, such as disease or displacement of the pelvic organs, rectal disease, or disease of the spine, may be an occasion of pain in the back. In rare instances, disease of the kidneys produces pain in the back. Disease of the spinal cord and disease of the kidneys, are, however, among the least frequent causes of pain in the back.

4. Such simple and digestible food as best agrees with the stomach.

5. Weakness of the muscles of the back is an exceedingly common condition in women, and is the result of their mode of dress, the compression of the waist, and the suspension of heavy skirts from waistbands.

6. The position assumed when lying, is not a matter of much importance, as there is no downward pressure or traction upon the abdominal viscera so long as the person remains in a horizontal position.

WHAT TO EAT — ROAST POTATOES — CANNED FRUITS — DRESS PATTERNS, ETC. — Miss M. B., of Florida, asks the following questions: —

"1. What can I eat in order to keep well? I have very good health, but sometimes, when I eat something which hurts me, I feel miserable for several days. I have a good appetite, but am very thin. What can I do to gain flesh?

"2. Are potatoes over-cooked and cooked with roast meat, injurious?

"3. Are canned fruits, such as peaches, apricots, jams, etc., injurious?

"4. Have you a pattern of the health dress? and what is the price?

"5. What underclothing is worn with this costume?

"6. Will the Sanitarium furnish dinners on the grounds at the World's Fair?"

Ans. — 1. Eat wholesome food, such as you can best digest, in proper quantity. No more specific directions can be given without a more perfect knowledge of specific conditions.

2. It is hardly possible to over-cook a potato. Potatoes cooked with roast meat and saturated with fat are very difficult to digest.

3. Canned fruits are wholesome, unless put up with an excessive quantity of sugar. Jams are objectionable on account of the great quantity of sugar which they contain.

4. Yes. Address "Sanitary Supply Co., Battle Creek, Mich.," for circulars and prices.

5. Union undersuits.

6. Probably not. The Sanitarium will open a Branch Institution at 28 College Place, Chicago, which is easily accessible from the World's Fair grounds.

CEREAL FOODS — EXCESS OF URIC ACID. — S. A. W., Nova Scotia, asks the following questions: —

"1. What is your opinion of Dr. Densmore's theory in regard to the injurious effects of all cereal food? 2. Please give a good general diet for one troubled with an excess of uric acid in the system (and dyspepsia), as disclosed by an examination of the urine; also state what foods to avoid."

Ans.— 1. Dr. Densmore is in error. His theory is based upon too small a number of facts and too limited an observation. The cases which he observed, and upon which he has based his theory, have evidently been cases of dyspepsia, and not cases of normal digestion.

2. Fruits, grains, and a moderate allowance of milk and cream. Eggs may be used occasionally. Meats, animal fats, cheese, and all unwholesome condiments should be avoided.

Onions, Radishes, and Lettuce.— Mrs. E. M. S., of N. D., asks: —

"1. Are onions, radishes, and lettuce proper food for healthy persons?

"2. What proportion of nutriment do they possess?"

Ans.— 1. Onions have a nutritive value, and if properly cooked, so as to remove the strong essential oil which gives them their characteristic flavor and odor, they may be eaten without detriment by most people, but are by no means an ideal food. Radishes eaten raw are almost indigestible. Very young, tender lettuce is digestible, but has a very small nutritive value. It may be eaten as a relish, but can scarcely be considered a food.

2. The nutritive values of the vegetables above mentioned are as follows: Onions, 13.3; radishes, almost nothing; lettuce, 4.9.

Celluloid — Kennedy's Medical Discovery — Etc.— A subscriber in Illinois asks the following questions: —

"1. Will celluloid cuffs and collar injure the flesh of the wearer in any way?

"2. What is the analysis of Kennedy's Medical Discovery?

"3. Where can a standard work on diseases of the skin, one which can be comprehended by the masses, be obtained, and what will be the cost?

"4. Is Daniel's Antiseptic Solution what they claim for it? Is it safe for any one to use? Is it sold by the Chicago Antiseptic and Fumigating Co., 409 Inter Ocean Bldg.?"

Ans.— 1. No, not unless they should catch fire from a lamp or a candle flame. It should always be remembered that celluloid is almost as inflammable as gunpowder; will take fire readily, and burns with a fierce flame.

2. See "Monitor of Health," page 390.

3. I know of no popular medical work devoted wholly to diseases of the skin. The information sought may doubtless be obtained by consulting the "Home Hand-Book of Domestic Hygiene and Rational Medicine," pages 1255 to 1286.

4. We have not investigated the solution.

Toasted Bread — Castoria.— M. C. F., of Ore., would like to know: "1. If you consider toasted bread constipating. 2. Is it injurious for children? 3. What is the analysis of Castoria? does it contain opiates? and do you consider it injurious for children?"

Ans.— 1. No. It is simply not irritating.

2. No.

3. The principal ingredients are water and sugar. See "Monitor of Health," page 387. It does not contain opiates, but might be a source of much injury if frequently used.

Discs for the Ear.— J. L. C., of Tenn., sends the following inquiry: —

"In a case of partial deafness of several years' standing, caused by closure of the Eustachian tubes, is it probable that any of the ear discs, sound discs, etc., would be of any advantage? If they did no good, would they cause any further impairment of the hearing?"

Ans.— Discs for the ear, or artificial ear-drums, would probably be of no benefit in such a case. By careful use, they might not do any harm, — except to the pocket-book. The actual cost of making a good disc is less than twenty-five cents. They are ordinarily sold for a larger price. The querist should ascertain, before investing any money, whether or not the disc would be of any benefit to him. Make a small, hard pellet of cotton of about the size of half a small pea, and tie a fine thread to it. Moisten this and introduce it into the ear with great care, placing it in contact with the ear-drum. If this improves the hearing, the hearing would also be improved by an artificial drum or disc. Probably, however, no greater improvement will be secured than is secured by the moist cotton. These contrivances are of no value, except in cases in which the drum membrane has been destroyed.

Superfluous Hair — Removing Red Veins. — A. H., of Ill., asks, "1. Do you remove superfluous hair by electricity at the Sanitarium? 2. How can red veins be removed from the nose? Will they gradually disappear by living hygienically, or will they require some other treatment?"

Ans.— 1. Yes.

2. By the same method. These enlarged veins rarely disappear after they have once developed.

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, 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.]

AGENTS OF THE MEDICAL MISSIONARY AND BENEVOLENT ASSOCIATION.

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Johnson, C., Marquam.
Logan, L. A., Elk City.
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Mulhollen, Louise, Flemington.
Owen, C. H., North Warren.
Parker, J. M., Mexico.
Rowe, Mrs. L. A., Titusville.
Spencer, Anthony, Canton.
Voorhees, L. W., Shinglehouse.
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Zeidler, W. H., 23rd Ward, Pittsburg.

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Stone, Mrs. S. D., Apponaug.
Sweet, Clark L., Slocumville.

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Bowen, Mrs. G. L., Newburg.
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WYOMING.

Worth, Mrs. Prudie, Buffalo.
Angleberger, G. W., Cheyenne,

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.

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, ,,
Mrs. Calista Gesler, Indiana.
Flo O. Hudleson, ,,
Mrs. E. Rodgers, ,,
W. G. Frame, Iowa.
James Hackett, Kansas.
Mr. Laman, ,,
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, ,,
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D. J. Marvin, ,,
Mrs. Mosher, ,,
Miss Corgan, ,,
Mr. Rooney, ,,
Wm. Allen, ,,
Mr. Wilkin, ,,
A. B. Rice, ,,
Mrs. W. H. Parker, Minnesota.
Mrs. Scott Snyder, ,,
Mrs. R. E. Crane, ,,
J. C. Kraushaar, ,,
Hans F Nelson, ,,
Miss Rose Lull, ,,
Lois Mathews, Minnesota.
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, ,,
Mrs. Elmira Dana, New York,
Mrs. Brooks, ,,
Mrs. M. J. Modill, Ontario.
Mrs. Lydia Strope, Ohio.
Maggie Potter, Pennsylvania.
Ezra Backus, ,,
Mr. Hough, ,,
Mrs. Geo. R. Sanderson, S. Dakota.
Mrs. M. A. Hanson, ,,
Mary A. Johnston, ,,
Martin B. Gibson, ,,
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C. A. Kenison, ,,
A. F. Leonard, ,,
John Leonard, ,,
Mrs. G. J. Link, ,,
R. S. Royce, ,,
J. B. Fassett, ,,
Mattie Rulaford, Washington.
R. P. Stewart, ,,
H. M. Chesebro, Wisconsin.
Stephen Roese, ,,
N. B. Carter, ,,
Mrs. T. L. Morton, Virginia.
T. E. Bowen, West Virginia.
Mrs. J. A. Holbrook, Texas.

TWO BOYS WHO NEED A TEMPORARY HOME (NOS. 106 AND 107).— A widowed mother, living in Michigan, asks for homes for her two boys, Carlos, aged 12, and Willie, aged 9. They are strong, healthy boys, but are living where they have no school privileges. The mother has her aged parents to care for, and is willing to clothe her boys, but is very anxious for them to be where they can have religious training and the advantages of school.

A FRIENDLESS BOY (NO. 108).—A little boy, in Pennsylvania, about 8 years old, needs a home where he can have good Christian care and love. Left an orphan, he has no one in the wide world to look out for him, and is at present in the care of the town authorities, who have secured for him board and lodging, but not a *home*.

TURNED ADRIFT (NO. 109).— Another little boy, in Michigan, aged 14, is left without a home because his stepfather refuses to support him. The one who writes of him says, "He is a very nice little fellow, with a good education for his years, and of good morals." Will not some one be willing to have their home made brighter by his presence?

TWO LITTLE SISTERS (NOS. 110 AND 111), in Pennsylvania, the older fifteen, are in need of a home or homes where they can be trained and educated for usefulness. The mother is a widow in needy circumstances, and will part with the girls rather than see them come up amid surroundings which may prove their ruin. They are bright, intelligent girls.

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 at one shipment, so as to get the benefit of the 100-pound rates. We 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.

THE *Literary Century*, always good, is, for May, a most desirable number, it being a Columbian souvenir number of the Michigan Woman's Press Association, and containing sketches of the members, together with twenty-seven fine half-tone engravings, including portraits of the President and other officers, and also many Michigan press women whose portraits have never before been given to the public. Good Health Publishing Company's editorial representatives here shown are Mrs. E. E. Kellogg, Miss E. L. Shaw, Miss Mary A. Steward, Miss Helen L. Manning, and Mrs. E. H. Whitney. The cover is white, of special design, and the number as a whole is a splendid souvenir. Single copies, twenty cents. New subscribers, sending in one dollar now for a year's subscription, will receive this elegant number free. Do not send postage stamps. Address, the *Literary Century*, Ann Arbor, Mich.

Babyland for June opens with a pretty picture, and continues with poems and pictures, stories and pictures, and merry little jingles, to its close. It is as dainty a number as any baby could wish.

Price 50 cents a year; 5 cents a number. D. Lothrop Company, Publishers, Boston.

FOLLOWING Mr. Howells' lead, apparently, both Frank R. Stockton and Mrs. Frances Hodgson Burnett, have gone over to the *Ladies' Home Journal*, and the most important works by these authors upon which they are now engaged, will shortly see publication in this magazine.

CASSELL'S "Portrait Catalogue" which has been in course of preparation for the past six months and more, is now ready. Besides containing a selected list of the Cassell Publishing Company's most important publications, it contains over forty full-page portraits of the firm's authors, made expressly for this purpose. Collectors will find these portraits admirably adapted for "extra illustrating" books. Catalogue sent to any address on receipt of two 2-cent stamps. The Cassell Publishing Co., New York.

THE Century Company will show in their exhibit at the Columbian Exposition a great number of interesting original manuscripts and drawings for important illustrations in the *Century* and *St. Nicholas*. Manuscript poems by Tennyson, Longfellow, Whittier, and Bryant will appear in the *St. Nicholas* exhibit. The originals of famous letters and documents quoted in Messrs. Nicolay and Hay's "Life of Lincoln" will be shown, including a certificate of a road survey made by Lincoln in 1834, with bill for his services at $3 a day; the letter of the committee apprising Mr. Lincoln of his first nomination for the presidency, and his reply, etc.

The Century Company will show also how an illustration is prepared for the magazine, from the artist's drawing to the printed page, by wood engraving, and by various photo-engraving processes. This exhibit, with that of other publishers, will be found in the north gallery of the Manufactures and Liberal Arts Building.

The *Chautauquan* for June contains among its many bright articles the following: "The Modern Maid of Athens and Her Brothers of To-day," by Prof. W. E. Waters, illustrated; "The Making of Paper," by Arthur Allen Black; "Epidemics and Our National Health," by Dr. Felix L. Oswald, an article of current interest; "Astronomy on Top of a Mountain," by I. H. Fickel; "Ecuador: Its Cities and Its People," by Willard Parker Tisdel; "Electricity at the World's Fair," by Wm. Igleheart, etc. The Chautauquan, Meadville, Pa.

Childhood is a new magazine lately come to our table, but one for which there is a wide field of usefulness. It is a journal for both parents and teachers. Although specialists in psychology and biology will be engaged to give the results of their study upon important topics relating to childhood, this magazine will not by any means be a technical journal. The intention of the editors is to make it a bright and spirited exposition of the most living subject in the world, and sketches and incidents of the daily life of children will be welcome to its pages, as well as more complete papers. The central thought seems to be to put ourselves in the place of the child, to learn to sympathize with him by putting ourselves back again into the mental attitude toward the world which we ourselves occupied as children, and in this way seek to train the child to its highest and noblest development.

Published by A. L. Chatterton & Co., 78 Maiden Lane, N. Y. Editors: Geo. Wm. Winterburn, Phar. D. M. D.; Florence Hull. Price, $1.00 per year.

PUBLISHERS' DEPARTMENT.

HEALTH MISSIONARIES.— The closing exercises of the Health Missionary department of the Sanitarium Missionary Training School, were held May 15 in the Sanitarium gymnasium. The instruction has extended over a period of six months, and this is the fourth class which has been prepared for this important field of work. The number enrolled was seventy-five, and nearly all were present on this occasion. The class motto, "Every man which striveth for the mastery is temperate in all things," was inscribed on a banner above the stage. The course includes physiology, anatomy, hygiene, sanitation, scientific cookery, chemistry of foods, physical culture, bandaging, accidents and emergencies, etc. The program was varied so as to bring forward what had been accomplished, and what the graduates expected to do upon leaving, and closed with an earnest address by Dr. Kellogg. Just four years ago this branch of work was undertaken with a mere handful of volunteers; now the numbers have grown so that there are two hundred, a large proportion of them young women, who are pledged to Christian help work, as health missionaries, for a long term of years, and many of them expect to make it the business of their lives. Provision is already made for opening a dispensary and bath rooms near the Harrison street police station in Chicago, one of the dirtiest and most wretched quarters of the city. It will be conducted on a unique plan, the baths and other forms of rational treatment practiced at the Sanitarium, predominating. As early as it can be brought about, through trained workers and the necessary means, similar missions are to be established in other large cities. Two of the graduates from the Nurses' Branch of the Missionary Training School have just gone to Sweden to inaugurate the work there, and so it is designed to spread throughout the world. As Dr. Kellogg said: "Christ taught a religion of practical helpfulness toward our fellow-men, and nothing but practical religion will suffice to win the world for him to-day."

* * *

CAPT. HENRY A. FORD, of Detroit, delivered a lecture in the Sanitarium parlors the 17th ult., upon "Life in Libby Prison," taking up the subject chiefly from a historical point of view. He with his wife, Mrs. Kate Brearley-Ford, spent about ten days at the Sanitarium. Both are well known in literary and educational circles in the State.

* * *

MRS. L. W. TREAT is continuing her series of excellent lectures upon kindergarten topics, the last two being upon "Stories for Children," and the "Mother-Play Book." In the first-named, she stated that five things were necessary to become a good story-teller, — culture, imagination and fancy, common sense, and dramatic fire. True culture consists in getting the best in life, taking it into our hearts, and living it; it is not dependent upon a college education. Fancy and imagination enable us to see the surroundings which our story implies, so as to make it realistic in its detail. Common sense is necessary to bring out the truth for which a story stands, else it will do a child no real good. And if we are to make a lasting impression, we must have dramatic fire enough to tell a story with earnestness. We are apt not to put enough of ourselves into our story telling, and a pretty sure indication of this is our being interrupted with questions. Dramatic fire is also good for the story teller, since it consumes his self-consciousness. The "Mother-Play" book is the least known of Froebel's writings, and yet he claims that it contains his very best and highest thought. Motherhood must always be understood in its higher sense, as spiritual rather than physical, embodied in any one who reaches a hand of loving helpfulness to another soul.

* * *

GOOD ROADS.— Mr. Albert A. Pope, the great bicycle manufacturer, has been doing some splendid missionary work in the interest of good roads. Besides agitating the matter in the newspapers in a way which has attracted a good deal of attention, Mr. Pope has secured an action of Congress making the best methods of road-making a matter of investigation by the Agricultural Department during the year ending June 30, 1894.

Mr. Pope has also induced the World's Columbian Commission to set apart a portion of its grounds to be used as an exhibition road-way. The plan proposed would be to construct this road in sections, beginning with the genesis of road making, by leaving a wagon mired in the mud in the first section, illustrating the average road in the country during a large part of the year, and then show, in sections of one hundred feet or less, the different methods of road construction common to our country, ending with sections showing methods in use abroad.

This is a matter in which everybody ought to be interested, and Mr. Pope is deserving of great credit for the interest which he has taken in this matter. Mr. Pope claims that the annual loss to the country through bad roads is not less than $500,000,000.

* * *

WE take pleasure in calling attention to the advertisement of Lindsay Brothers on our advertising pages this month. This well-known firm have built up a reputation and a business of which any firm might well be proud. Their perfect reliability has won for them a long trade list, and their integrity has bound their patrons to them year after year. Our readers will find this house a most satisfactory place to deal.

* * *

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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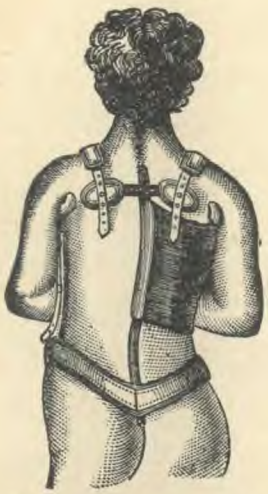

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Trusses,

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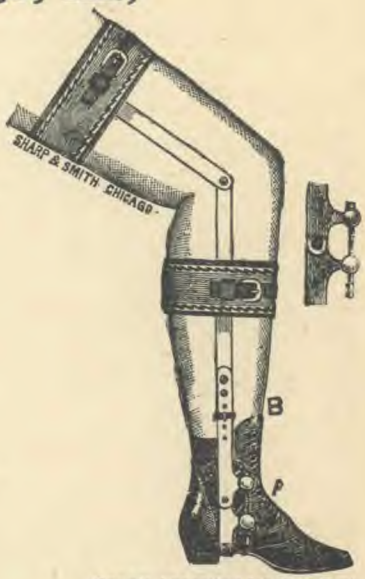

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"BABY POWDER,"

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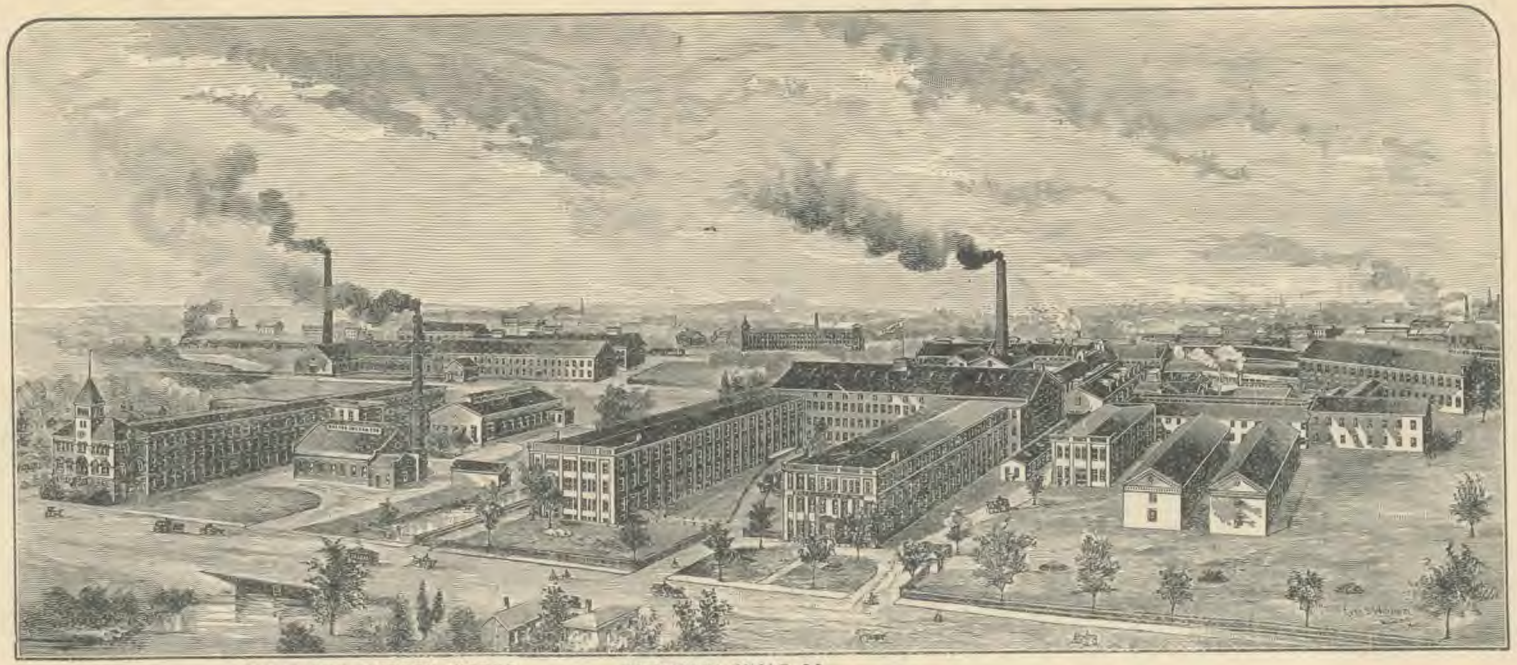

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Chicago & Grand Trunk R.R.

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	5.40	.....	.....	.....	.....	.....Montreal.....	.....	8.00	7.00	.....	.....
p m			p m				a m	p m			
11.30	.....	.....	1.00	.....	.....	..... Toronto	.....	8.35	5.25	.....	.....
			p m					a m			
.....	.....	.....	8.00	.....	.....	.....Detroit.....	p m 9.25	.....	7.45	9.25	.....
Day Exp.	B. C. Pass.	Lmtd Exp	Pacific Exp.		Mail Exp.		Mail.	Lmtd Exp.	Atlte Exp.	Day Exp.	Pri.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	.....	2.16	.....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	2.36	.....
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.
Trains run by Central Standard Time.
Valparaiso Accommodation, Battle Creek Passenger, Port Huron Passenger, and Mail trains, daily except Sunday.
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MICHIGAN CENTRAL

"The Niagara Falls Route."

Corrected Nov. 20, 1892.

EAST.	†Day Express.	*N. Shore Limited.	*N. Y. Express.	*N. Falls & Buffalo Special.	‡Night Express.	†Detroit Accom'n	*Atl'ntic Express
STATIONS.							
Chicago.....	am 9.00	pm 12.20	pm 3.10	pm 4.55	pm 9.30		pm 11.45
Michigan City	10.58	2.05	4.56	6.39	11.25		am 1.42
Niles.....	pm 12.40	2.57	5.48	7.31	am 12.30		2.50
Kalamazoo	2.05	4.00	7.04	8.57	1.57	am 7.10	4.28
Battle Creek...	2.45	4.30	7.37	9.28	2.35	7.52	5.20
Jackson.....	4.30	5.38	8.52	10.42	4.05	9.40	6.45
Ann Arbor.....	5.30	6.27	9.45	11.27	5.38	10.40	8.05
Detroit.....	6.45	7.25	10 45	am 12.30	7.10	11.52	9.35
Buffalo.....		am 3.00	am 6.25	7.35		pm 7.40	pm 5.00
Rochester.		5.50	9.55	11.20			8.20
Syracuse		7.50	pm 12.15	pm 2.10			10.20
New York.....		pm 3.45	8.50			am 8.45	am 7.00
Boston.....		6.05	11.05	am 6.15			10.50
WEST.	†Mail.	†Day Express.	*N. Shore Limited.	*Chicago Express.	†Kal. Accom'n	*Pacific Express.	* Chic. Special.
STATIONS.							
Boston.....		am 8.30	pm 2 00	pm 3.00		pm 6.45	
New York.....		10 30	4.30	6.00	pm 8.00	9.15	am 8.30
Syracuse..... ..		pm 7.30	11.35	am 2.10	am 3.50	am 7.20	pm 2.20
Rochester.		9.35	am 1.25	4.20	5.55	9.55	5.10
Buffalo.....		11.00	2.20	5.30	9.00	11.50	7 45
Detroit	am 8.20	am 7.30	9.05	pm 1.20	pm 4.40	pm 9.00	am 2.15
Ann Arbor.....	9.37	8.27	9.59	2.19	5.48	10.27	3.08
Jackson..... ..	11.35	9.35	10.58	3.17	7.15	am 12.01	4.10
Battle Creek ..	pm 1.18	10 43	pm 12.02	4.30	8.47	1.20	5.20
Kalamazoo.	2.05	11.30	12.39	5.05	9.45	2.18	5.59
Niles.....	4.00	pm 12.40	1.48	6.17		4 15	7.15
Michigan City	5 20	2.00	2.45	7.20		5.35	8.28
Chicago..... ...	7.35	3.55	4.30	9.00		7.55	10.15

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

Accommodation Mail train goes East at 1.18 p. m. daily except Sunday. Night Express goes West at 12.05 a. m. daily except Monday.

Trains on Battle Creek Division depart at 8.03 a. m. and 4.35 p. m., and arrive at 11.40 a. m. and 6.45 p. m. daily except Sunday.

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

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

THE SANITARIAN.

1873.—Twenty-First Year.—1893.

THE SANITARIAN is a monthly magazine devoted to the promotion of the art and science of sanitation, mentally and physically, in all their relations; by the investigation, presentation, and discussion of all subjects in this large domain, as related to personal and household hygiene, domicile soil and climate, food and drink, mental and physical culture, habit and exercise, occupation, vital statistics, sanitary organizations and laws,—in short, everything promotive of, or in conflict with, health, with the purpose of rendering sanitation a popular theme of study and universally practical.

THE SANITARIAN is filled with articles of scientific interest and practical value. It would be difficult to plan a better professional magazine than this, which is to the medical world what the *Scientific American* is to the artisan world. It deserves a greatly increased circulation. —*Baltimore Methodist.*

THE SANITARIAN is not only an interesting magazine to the specialist and the medical man, but it is of high value to thickly settled communities, to homes, to general readers, to city authorities—indeed, we would place the journal, for public good, in the hands of every adult, believing that misery and suffering would thereby be lessened and human happiness augmented by the knowledge the journal disseminates. —*Sacramento Record-Union.*

TERMS:

$4.00 a year, in advance; 35 cents a number; sample copies, 20 cents—ten two-cent postage stamps.

The SANITARIAN is published as hitherto, in New York. **THE AMERICAN NEWS COMPANY, General Agents.** Newsdealers will get their supplies from them.

☞ All correspondence and exchanges with the SANITARIAN, and all publications for review, should be addressed to the editor,—

Dr. A. N. BELL, Brooklyn, N. Y.

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By J. H. KELLOGG, M. D.

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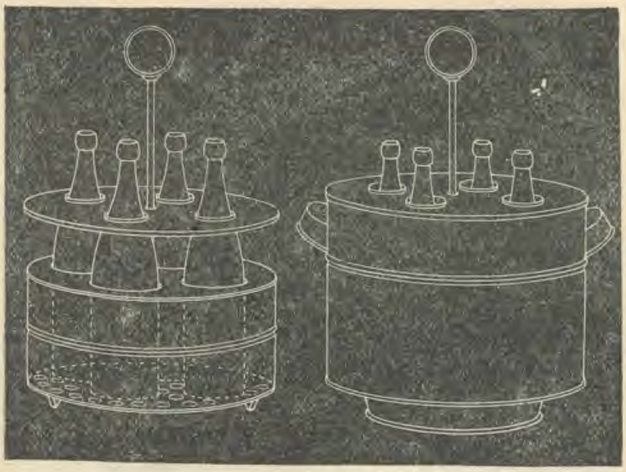

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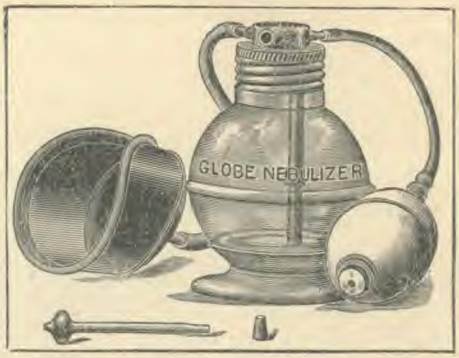

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The undersigned have for many years been engaged in the publication of books for the million, and several hundred thousand copies of their bound volumes are to be found scattered among the households of the United States and other English-speaking 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		
Second week	$244	Fifth week	$440
Third "	280	Sixth "	230
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This same agent sold *$180 worth of books in one day.*

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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.

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MODERN MEDICINE PUB. CO. (formerly Health Pub. Co.),
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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,
GRAHAM GRITS,

Various grades of
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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,
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"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.

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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, ...

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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.

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Simple Remedies for Common Diseases.
Accidents and Emergencies.
Hydropathic Appliances.
Tests for Adulteration.
Useful Hints and Recipes.

SIX COLORED PLATES.

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In which will be found the results of careful chemical analysis, made by competent chemists of

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