JANUARY, 1895.

GOOD HEALTH

CONDUCTED BY

J. H. KELLOGG M.D.

Subscription price $1.75
(Including Companion Volume)

PUBLISHED MONTHLY.

GOOD HEALTH, VOL. 30, NO. 1.

CONTENTS.

BATTLE CREEK, MICH., January, 1895.

VIEW OF SERINGAM, INDIA.

GOOD HEALTH
A JOURNAL OF HYGIENE
MENS SANA IN CORPORE SANO.
VOL. XXX. NUMBER 1.
BATTLE CREEK, MICHIGAN. JANUARY, 1895.

BIOGRAPHICAL HEALTH STUDIES.

BY F. L. OSWALD, M. D.,
Author of "Physical Education," "The Bible of Nature," etc.

12. Oliver Wendell Holmes.

A FEW years ago an *attaché* of the Boston *Herald* published an interesting collection of longevity recipes, gathered from personal interviews with a number of centenarians in New England and Southern Canada; but one of his critics shrewdly remarked that the significance of those rules ought to be discounted by the healthfulness of the experimenter's occupation. In other words, a code of health that would enable a game-keeper to live a century, might be inferior, in general value, to a system that would keep a physician or a lecturer alive for eighty years. Forest air and outdoor exercise had possibly saved the ranger from the penalties of manifold dietetic errors, while sickroom microbes might have shortened the doctor's life in spite of excellent sanitary habits.

According to that criterion of competence, Oliver Wendell Holmes, lecturer, author, and physician, ought to have been the best latter-day authority on the art of prolonging life. Without the heritage of a specially vigorous constitution, he preserved his mental and physical health almost to the end of his eighty-fifth year, in spite of indoor work and late hours, business worry, poetic paroxysms, and frequent exposure to the lung-congesting atmosphere of hospitals and crowded lecture halls.

Holmes was capable of writing away at the rate of two thousand words an hour, from sunrise to sunset, when the heat of controversy had warmed him up to his work, and more than once sacrificed a whole night's rest to an interesting book; but the influence of his early education had saved him from the risk of becoming a bookworm in the Berlin professor sense of the word. He was born near Cambridge, Mass., at a time when the north shore of Charles River was not yet lined with factories and unapproachable country residences. Riverside villas had begun to spring up, but there were large interspaces of pastures and playgrounds, and a mess of fish could be caught anywhere between Brighton bridge and the harbor. Oliver's father, the Rev. Abiel Holmes, of the Cambridge Congregational church, was an easy-going educator, conniving at huckleberry picnics and aquatic sports, and so strongly opposed to the cramming system of the public schools that he preferred to let his youngsters get the rudiments of their book learning from private tutors, and give them the benefit of frequent extra vacations.

As a consequence, young Oliver never learned to hate his books, but came to like reading (magazine reading) before the end of his tenth year, as a pleasant alternation of boating and berry picking. He was rather a precocious youngster, and as usual in such cases, his intellectual progress got the start of his physical development, but his love of outdoor sports revived at every surfeit of literary or social luxuries. He would postpone his lecture engagements to join a party of pickerel fishers on the Merrimac; and in Paris, at the dinner table of the *Frères Provenceaux*, he would leave the Burgundy untasted, while he "tinkled his fork against the sides of the bubble-like glass, dreaming that he heard the cowbells, as he used to hear them when the deep-breathing kine came home at twilight from

the huckleberry pasture in the old home, a thousand leagues toward the sunset."

In his fifteenth year, Oliver was sent to Phillip's Academy, at Andover, and confesses that occasional fits of homesickness first tempted him to seek solace in poetry. The knack of versification, thus acquired, proved its utility the very next year, when he translated portions of the "Eneid," with its passionate pæans of Nature worship. The young poet attracted the attention of his teachers within a few months after his transfer to Harvard, though the roll of his classmates included such names as Benjamin Curtis, S. T. Bigelow, and James Freeman Clarke. An incidental poem, "Old Ironsides," made its author's name a household word from Boston to New Orleans, and is said to have shamed the Washington authorities into a revocation of an order which came near dooming the frigate "Constitution" to the disgrace of a junk-dealer's auction: —

> "Nail to the mast her holy flag,
> Set every threadbare sail,
> And give her to the god of storms,
> The lightning and the gale!"

That the poet himself could prefer his "Chambered Nautilus" to that ringing rhapsody, is an additional proof of how constantly his heart turned from the arena of politics to the scenes of his boyhood sports.

Holmes's father had intended him for the study of the law, but after a year's struggle with Blake, he turned his attention to medicine, or the "healing art," as the future satirest of the drug-delusion preferred to call it, even at that time. Among the souvenirs of his college life there is a memorandum book filled with notes on "Pragmatic Hygiene"— the interpretation of abnormal symptoms, the sanitary tendency of various articles of diet, etc., which already outlines the keen observer's chief pathological tenets, and in connection with the study of Jennings's "Medical Reform" and similar works may have influenced his choice of a vocation, or rather of a coördinate profession, since it may be questioned if the versatile Yankee's study hours were not about equally divided between poetry and medicine. Like Dr. Faust, he had, however, made up his mind to "search the cursed nostrum-pots to the bottom," and studied for two and a half years at Boston, before he went abroad to finish his course at Paris and Edinburgh.

The young New Englander's political principles became liberalized in the "metropolis of civilization," but it cannot be said that the broadening of his views on the temperance question was at first much of an improvement on his family tenets. Up to 1850, *i. e.*, for nearly fourteen years after his return from the French capital, he was apt to quiz his Boston friends on the zeal of their teetotalism, and when challenged to define his objections, evaded the main point by an attack on sham Puritans: "Better eternal and universal abstinence than the brutalities of those days, that made wives and mothers and daughters and sisters blush for those whom they should have honored, as they came reeling home from their debauches. Yet, better even excess than lying and hypocrisy; and if wine is upon all our tables, let us praise it for its color and fragrance and social tendency, so far as it deserves,, and not hug a bottle in the closet and pretend not to know the use of a wineglass at a public dinner! . . . Whatever may be the hygienic advantages or disadvantages of wine, there is no doubt about its being the grand specific against dull dinners. A score of people come together in all moods of mind and body. The problem is, in the space of one hour, more or less, to bring them all into the same condition of slightly exalted life. Food alone is enough for one person, perhaps,— talk, alone, for another: but the grand equalizer and fraternizer, which works up the radiators to their maximum radiation, is now just where it was when six great vessels, containing water, the whole amounting to more than a hogshead full, were changed into the best of wine." —"*The Professor at the Breakfast Table*," *p. 32.*

With the exception of some of his bitter diatribes against the followers of Hahnemann, Holmes would probably have cancelled that passage sooner than any other portion of his controversial writings, and permitted its re-publication merely to indicate the theoretical standpoints of his younger years. "The reader of to-day," he says in the preface of a subsequent edition, "will not forget, I trust, that it is nearly a quarter of a century since these papers were written." Holmes had, indeed, lived to see a time when wine was no longer found "upon all tables," even of the convivial classes, and had learned to make a change of occupation an all-sufficient diversion from professional drudgery.

For the same purpose he recommended farm work, and treated himself to liberal doses of his own prescription. "Digging for health," he says, "would make a suggestive title of a useful book. Ditch digging is a panacea for the evils of indoor life, even without reference to the cure-all functions of a sexton. 'Go far west, young man,' I should tell a youth who could not stand New England farm work, as a sanitary prescription, but could be trusted to dig violently for California nuggets."

But his favorite outdoor sport was boating. "I do not deny the attraction of walking," he says, in his facetious manner, "I concede that it is a fine invention of which old age ought constantly to avail itself. . . . Saddle leather is in some respects even preferable to sole leather. The principal objection to it is of a financial character. But you may be sure that Bacon and Sydenham did not recommend it for nothing. One's *hepar*, or in vulgar language, liver,— a ponderous organ weighing some three or four pounds,— goes up and down like the dasher of a churn, in the midst of the other vital arrangements, at every step of a trotting horse. The brains also are shaken up like coppers in a money box. Riding is good for those that are born with a silver-mounted bridle in their hand, and can ride as much and as often as they like, without thinking all the time that they hear that steady grinding sound, as the horse's jaws crunch with calm lateral movement the bank bills and promissory notes upon which it is notorious that the profligate animal in question feeds day and night. . . . But you will observe that, in riding on horseback, you always have a feeling that, after all, it is not you who does the work, but the animal, and this prevents the satisfaction from being complete."

"Now let us look at the conditions of rowing. My boat is from seven to eight yards long, and as it is only three feet wide, you understand the purpose of those, 'out-riggers,' or projecting iron frames with the rowlocks. Here you are, then, afloat with a body a rod and a half long, with arms or wings, as you may choose to call them, stretching more than twenty feet from tip to tip; every volition of yours extending as perfectly into them as if your spinal cord ran down the center strip of your boat, and the nerves of your arms tingled as far as the broad blades of your oars,— the nearest approach to flying that man has yet made, or perhaps ever will make. As the hawk sails without flapping his pinions, so you can drift with the tide when you will, in the most luxurious form of locomotion indulged in by an embodied spirit. But if your blood wants rousing, turn round that stake in the river, which you see a mile from here, and if you come back in sixteen minutes, then say if you begin to feel a little warmed up or not! It has been long agreed that there is no way in which a man can accomplish so much labor with his muscles as in rowing. . . . I dare not publicly name the rare joys that intoxicate me on some sweet June morning when the river and bay are smooth as a sheet of beryl-green silk, . . . and I can skim over the flats and see the crabs crawling and the sculpins glide busily and silently beneath my boat. . . . What a city of idiots we must be not to have covered this glorious bay with gondolas and wherries, as we have just learned to cover the ice in winter with skaters!" — "*The Autocrat of the Breakfast Table*," *p. 170.*

"How doctors differ," says Holmes, in commenting upon the whim of a Russian physician, who held that "repose should precede exhaustion," and consequently rested every few steps in mounting a flight of stairs. "My own experience, on the contrary, has taught me the occasional usefulness of physical

O. W. Holmes.

as well as mental fatigue, because their effect, deep, dreamless sleep, has a peculiar remedial tendency."

"Not very flattering to the state of our sanitary knowledge," he says, in allusion to the same fact, "that nature can do her remedial work most effectively when the recipe-fraught mind is undergoing the eclipse of deepest slumber."

From his thirtieth to the end of his fortieth year Dr. Holmes was perhaps the busiest mortal mentioned in the history of literature since the death of the elder Pliny, or in modern times, since the resignation of Baron Bourrienne, the Hamburg factotum of the

French empire. Holmes was not only a popular lecturer and indefatigable writer, both of prose and poetry, but a successful physician, and in 1839 was made professor of anatomy and physiology at Dartmouth College, and soon after Parkman, professor of physiology at Harvard, within easy reach of his Beverly country seat, where he often tried his hand at amateur farming. But as usual, successful work proved a sustaining factor in the vital economy of the busy man. Holmes outgrew the nervous affections of his college years, and overcame the dread of microbes in the consciousness of a self-sustaining, contagion-proof organism. Sickroom visits, as a rule, did not put him to the trouble of wasting time on the problem of self-preservation, though experience taught him to make an exception in the case of puerperal fever, which he came to consider both the cause and effect of an atmospheric contagion to be combated by strong antiseptics, and he also admits that he felt a nervous shudder at the sight of a dissecting table, after witnessing the agony of a prosector who had been blood-poisoned by a mere scratch on his hand.

He found the intellectual atmosphere of a large city a potent aid to brain work,—"a mental tonic as efficient almost as the gratification of approbativeness," but apt to be offset by the uproar of traffic:—

> "The very air vibrating like a sea
> Over a pent volcano. Woe is me!
> All the day long!"

"Stint yourself in food, sooner than in sleep," was his advice to literary men, but the question of late or early hours he apparently considered a matter of secondary importance. "The silence of the midnight hours," he says, "often makes them specially propitious to mental labor, and it is a question if the objections to daylight sleep are not mere trifles compared with the nervous irritation caused by constant interruption." Savage Landor, in his Florentine exile, is said to have become so exasperated at the continual interruptions of his reveries that he once grabbed a street piper and half killed him with his own instrument, and Holmes, too, confesses that there were times when wanton noises irritated him like personal insults, and often almost beyond self-control: "Boys cracking a whip or pounding a drum under my window often tangle my threads of thought beyond the possibility of unraveling the coil. Gobbling turkeys make me long for Thanksgiving days of reckoning; caterwauls force me to suspect the truth of Aquina's doctrine of total animal depravity, and moon-baying dogs spoil my vigils, but I forgive them, because they have taught me a useful lesson; viz., the truth that vocal efforts are better than no exercise at all."

One of his hygienic essays emphasizes the interaction of body and mind, and the life-prolonging tendency of cheerfulness. "That circumstance," he says, "may partly explain the survival of school teachers, who suffer the vicarious martyrdom of a whole parish, but in recess have a chance to get young again with the young, like that Roman pedagogue who lived a hundred years '*canhelitu puellarum*.' A sort of sanitary instinct, I suspect, prompts the devotees of austere monastic orders to seek relief in school teaching." "A similar instinct," he adds, "prompts our countrymen to remedy the lack of American holidays with a surplus of reunions and local festivals. Our Southern fellow-citizens, especially, have invented picnic pretexts enough to improve the chances of longevity thirty per cent,—at least since the logic of climatic exigencies has taught them caution in the use of alcoholic aids to festivity." European analogies, by the way, led Holmes to predict that local option would achieve its most permanent triumphs south of the Potomac, though in 1886 he suggested that "the besetting foible of the Mormons ought to be condoned as a concomitant of their Mussulman temperance tenets."

The bibulous habits of our Western miners he ascribed to the rigorous winter climate of the midland Sierras, but held that, on the whole, frost, as a microbe killer, was worth untold carloads of antiseptic drugs. "We cannot yet dispense with opium," he says, "nor with the vapors that work the miracle of anæsthesia; but if, with those exceptions, the whole materia medica, as now used, could be sunk to the bottom of the sea, it would be all the better for mankind, and all the worse for the fishes." —"*Currents and Counter-currents*," *p. 36.*

Holmes's violent and repeated attacks on the theories of homœopathy contrast strangely with the genial table talk of the Beacon street philosopher, and would suggest a suspicion that contradiction had goaded him into a loss of his philosophic temper, but it is withal possible that his invectives were inspired by the dread that the doctrines of Hahnemann would perpetuate the drug delusion and thus prove an obstacle to the progress of sanitary reform. Personally he was an almost total abstainer from drugs, and his writings abound with hints on the best methods for weaning the masses from their nostrum-worship. "'Water freezes,' 'water boils,' we read on our Fahrenheits, and it would greatly modify the

mortality rate of our crowded cities if we could distribute thermometers with the legend: 'Babies die (say at 98° F.) unless you ventilate your nurseries.'"

Excess of food and lack of the leisure needed for its digestion he accounts, on the whole, the principal offset to the life-prolonging influence of American freedom and elbow-room. "After-dinner work is the Juggernaut of our mammon worship and the main cause of chronic dyspepsia;" but next to that, the fatal superstition of the nostrum mania. "The popular belief is all but universal that sick persons should feed on noxious substances," he says, and treats his readers to an anecdote about a Boston physician who was called to the bedside of a man with a terribly sore mouth. "On inquiry, he found that the man had picked up a box of mercurial pills on Howard street, and proceeded to swallow them on general principles, — pills being good for people."

During the first twenty years of his long literary career, Dr. Holmes continued to banter the temperance enthusiasm of his New England neighbors, but experience obliged him to admit the progressive tendency of the alcohol habit, and his ultimate verdict on the doctrine of Anacreon is pretty nearly expressed in his parody of a Bacchanalian ode: —

"The purple-hued clusters (half-ripened apples) their life dews have bled,
How sweet is the breath (taste) of the fragrance they shed (sugar of lead)
And summer's last roses (rank poisons) lie hid in the wines,
That were garnered by maidens that smiled through the vines (stable boys smoking long nines)."

It is, indeed, probable that Holmes had valued wine less as a stimulant than as an aid to cheerfulness, which he considered under all circumstances "a duty which the human soul owes to its physical yokefellow."

The confident hope of recovery he recognizes as a principal factor in the efficacy of many vaunted prescriptions, and deems it a physician's duty to encourage that life-preserving illusion, even in apparently desperate cases. "Beware," he tells the graduates of his Harvard class, "how you take away hope from any human being. It is evidently the purpose of the Creator to lead his children blindfolded to the brink of the precipice, and without very good reasons, temporal or spiritual, we should not incur the responsibility of interfering with that benevolent plan."

Nature repaid the kind old doctor by leading him, too, to the very threshold of Nirvana, before he suspected the seriousness of the symptoms that had now and then alarmed his medical friends, and the peace of his last moments almost verified his theory that under normal conditions the extinction of consciousness should be as calm as its eclipse in welcome slumber.

(To be continued.)

CIVILIZATION AND THE STRUGGLE FOR EXISTENCE.

In the case of civilized man, natural selection is subject to numerous and extensive limitations. The struggle for existence still goes on vehemently enough; but it is changed in character; and instead of animal rapine we have industrial competition. The brutal and relentless acts of self-assertion that in a savage state secured the survival of the fittest — that is to say, of those best adapted to savage surroundings — have been condemned as unsuitable to a more artificial existence, and are punished as crimes, and the conflict is carried on by cunning devices which abolish the weakest slowly and unobtrusively, and do not outrage certain moral feelings opposed to violence which have in the meantime grown up. But, more than that, in social progress the struggle for existence becomes in certain directions a surrender, not of the feeblest, but of the strongest and the best. A recognition of the obligations which man owes to his fellow-men and the promptings of "love's divine self-abnegation" impose restraints on some of the competitors who, instead of forcing their way to the front, as they are well able to do, stand aside, and allow themselves to be beaten by those less fitted to survive. To adapt the illustrations of Malthus, nature still spreads her feast for twenty guests, while thirty stand by ready to partake of it, but, whereas in primitive times, the twenty strongest would have unhesitatingly appropriated the sustenance, in these more virtuous days fifteen of the strongest and five of the weakest secure it, because five of the strongest have chosen to abrogate their natural claims. The census returns clearly show that while the usual age of marriage in this country steadily rises among the educated and affluent classes, it remains painfully low in agricultural districts and in the poorer quarters of the great towns.

The interference with the struggle for existence which civilization and ethical development involve is familiar to medical men above all others, for their professional career is one sustained endeavor to prevent the extermination of the unfittest and, therefore, to check the operation of natural selection.

It is theirs to succor the victims who have been smitten in the fight, and who, but for their aid, would perish; it is theirs to preserve weakly lives which, left unprotected, would be ruthlessly stamped out; it is theirs to circumvent conquering bacteria, and so prevent mortality and swell the millions contending for a bare subsistence; it is theirs, as the chosen ministers of the higher ethics, on the one hand, to counteract the life-destroying checks which operate chiefly on the feeble and incompetent, and, on the other, to inculcate the prudential considerations which are most influential with the finest types of mankind. No doubt the wider scope which modern science has given to medical practice enables those who pursue it to render services to the strong as well as to the weak, and to compensate in some degree for the general lowering of vitality which the maintenance of sickly lives tends to produce. Sanitary improvements and the removal of many of the causes of disease not only keep the infirm alive, but insure increased vigor to the constitutions of the robust.

But still the result of medical work as a whole at the present time must tend toward the intensification and the thwarting of the struggle for existence, and perhaps to some deterioration of the species; for medical work does intermeddle with nature's rough-and-ready methods in selecting her breeders. Great numbers of weakly infants who would formerly have perished in their infancy are now reared to a weakly maturity, and enabled to propagate their weakliness (for the weakly are often highly prolific), while they take part in the life battle on terms sometimes made unduly favorable to them by the commiseration that their weakliness commands; and this fact ought not to be lost sight of when we are congratulating ourselves on our greatly diminished death-rate. An enormous saving of life has been effected, but mainly in life's earlier decades. The death-rate is actually increasing among males at all ages above thirty-five, and among females at all ages above forty-five; and it is not difficult to prove that this increased mortality at post-meridian ages is due, partly to the enhanced wear and tear of modern existence, and partly to the survival of weakly lives artificially protected and prolonged.—*Sir James Crichton Browne, M. D., in Popular Science Monthly.*

JAPANESE DIET.

BY MASATOSHI OHARA,
Otsu Omi, Japan.

THE Japanese are generally vegetarians, but not all are strict vegetarians.

Soldiers, farmers, and peasants are mostly vegetarians; merchants and doctors are semi-vegetarians; Buddhists, Buddhist monks (except the Shinshu sect) and some other men are strict vegetarians. Laborers are sometimes strict vegetarians on account of their poverty, vegetable diet being cheaper in Japan than flesh food. Christians and their missionaries are almost always meat-eaters, which is a matter of much regret. As to health among the classes mentioned above, we find vegetarians enjoying it in the highest degree, the semi-vegetarians in the middle, and the meat eaters in the lowest.

It may be of interest to know why the Buddhists and their monks are strict vegetarians, and why the others are not. In one of our Buddhist scriptures are these words: "You, the Buddha's sons, should not voluntarily eat flesh food of any kind. If you eat it, it destroys all the spiritual seeds of great compassion. All living beings seeing you eat flesh, walk away with contempt. For this reason all the Bodhisattvas are not allowed to live on any flesh food." In view of this, we Buddhists abstain from flesh eating.

Vegetable diet is called by our Buddhist teachers, *sho-zin-mono*, or literally "diet that promotes spiritual progress." Therefore, say we Buddhists, those that aspire after spiritual enlightenment should not eat even the least flesh food. But why cannot flesh-eating men attain the spiritual enlightenment? Why cannot we reach the final goal — the Buddhahood — if we live on animal food? — Because, according to the wisest investigation and experience, animal food destroys our spiritual aspirations, and gives rise to gross thoughts and so to gross, vulgar doings. If we live upon flesh food, we must necessarily be the murderers of certain beings. And we believe that to ruthlessly take the life of any living creature is to commit one of the greatest sins. The true enlightenment is a state free from all sins and vulgar thoughts. Thus it is evident that we must abstain strictly from meat eating if we aspire to reach enlightenment and Nirvâna — the Buddhahood. These are the reasons given by our Buddhist teachers for the practice of vegetarianism, it being their

opinion that flesh eating is not only harmful to the bodily health but also to the mental, besides its necessitating the needless taking of life, an act which we Buddhists are careful not to commit. Shintoists and Confucianists say nothing in regard to the practice of vegetarianism, and so they do not abstain from flesh food; yet in the old times they did not eat it as they do at present.

In our country, vegetarianism was once the universal practice, but some five hundred years ago, certain of the lowest classes of Chinese people came and settled in this country. These men began to hunt wild animals, kill domestic ones, and to eat them greedily. Their brutish doings made the pure native Japanese who were Buddhists refuse to receive them and to call them *etta*, the literal meaning of which is "men full of dirt" or "dirty race;" and these "men full of dirt" were not allowed to marry with the pure natives, or to associate with them in any way. Until about twenty-five years ago most of the people did not eat animal food, but chiefly vegetables and sometimes fish; but from the time of the introduction of various Western customs and ideas, some thirty years ago, the practice of flesh eating became more and more widespread. Adding to this, Christian missionaries encouraged flesh eating, and this made a deep impression upon the bewildered natives. In Ozaha, Kioto, Tokio, Nagasaki, Kohe, Yokohama, Hakodate, and in other cities and ports, Christian missionaries often said in their sermons that flesh eating makes man healthy; health makes him wealthy; and wealth makes him moral; hence, to be moral, he must be a rich man; to be rich, he must be healthy; and to be healthy, he must be a meat-eater. They also taught that animals were created to be the food of man. These strange statements we have heard very frequently, I heartily regret to say, for I do not believe that Christianity teaches people to live upon animal food. We read in the Bible: "Behold, I have given you every herb bearing seed which is upon the face of all the earth, and every tree in which is the fruit of a tree yielding seed; to you it shall be for meat."

A few months ago a French Catholic missionary by the name of Billiaun, addressed an audience of some hundreds in Kioto, and among other things he said: "The Western lands are richer and stronger than the Eastern, a fact which no intelligent person can deny; and the wealth and vigor of the Western people are owing to their flesh eating. Remember, a merciful God created the cattle and animals for the food of man, and to be of service to him. For this reason we must live upon animal food, and regard all these creatures as the servants of man." I read this in his paper, "*Katorice-kyo.*" And these irrational, unscriptural teachings were readily accepted by the ignorant natives, and some of them have already become meat-eaters. I find the Protestant missionaries do not teach flesh eating so publicly as the Catholic missionaries. The latter profess that animal food is the "gift of God to men," while the former privately believe it. But both of them are meat eaters. Seven hundred foreign Christian missionaries here in Japan, but no vegetarians! Send to this country some true vegetarian missionaries, and we Buddhists will, though we differ in our belief, gladly work with them to show the people that both Christianity and Buddhism do not teach flesh eating, but vegetarianism. It is easier to convert our flesh-eating people into vegetarians than in any other land, for nearly one half of our whole population are already strict vegetarians, and four fifths of the remainder are semi-vegetarians, so only a small part of our people are flesh eaters, though they number four hundred thousand. But the tendency to flesh eating is increasing rapidly from the seashore to the interior, and from city to village. The present is therefore a most important time to work for its prevention. I have translated and published the "Proper Diet for Man," in a most influential journal, and distributed about one thousand copies of it among the flesh-eating men and women of our country, with good effect.

Our people who live in native style take their meals three times a day, breakfast, dinner, and supper, besides which they rarely take lunch. We see that foreign men and women here in Japan take food many more times a day than our natives. Our native family motto is, "A small quantity in eating and drinking and a long and happy life."

A sample bill of fare of our well-to-do people for each of the meals of the day is as follows: —

WINTER AND SPRING.

Breakfast.— Boiled rice and well-salted radishes.

Dinner.— Boiled rice, boiled salad, boiled young bamboos, boiled lily-root.

The supper is almost the same as the breakfast.

SUMMER AND AUTUMN.

Breakfast.— Boiled rice and salted cucumbers or fruit of egg-plant.

Dinner.— Boiled rice, boiled lotus bulbs, pumpkin, egg-plant, fruit, white cucumber, tōfu (a very soft, digestible food prepared from white peas), etc, etc.

The supper is almost the same as the breakfast.

A sample bill of fare of our peasants for each of the daily meals is : —

WINTER AND SPRING.

Breakfast.— Boiled wheat and salted radish.

Dinner.— Boiled wheat, boiled potatoes, onions, sweet potatoes.

The supper is almost the same as the breakfast.

SUMMER AND AUTUMN.

Breakfast.— Boiled wheat and well-salted radish or turnip.

Dinner.— Boiled wheat, boiled peas, boiled beans, salted egg-plant, fruit.

The supper is almost the same as the breakfast.

At another time I will speak more in detail of our different foods and meals.

I will close this article with one statement, which I am proud to make : Our dietetic habits are generally vegetarian. Even the lowest class of our people who make a practice of eating flesh food, never take it on the death day of one of their relatives ; for, though they are so brutish that they kill animals, boil, and eat them, still they think it is not fitting to do so on that day.

THE USE AND COST OF STIMULATING BEVERAGES.

UNDER this head, the *American Grocer*, New York, publishes a paper in which is tabulated the cost and consumption of wines, spirits, beer, tea, and coffee, in the United States, and which shows, by the figures given, that while the consumption of tea and coffee and light wines is practically at a standstill, the per capita consumption of alcoholic and malt liquors is a steadily growing one.

The following simple table places in forcible array comparative figures showing the per capita use of stimulating beverages : —

PER CAPITA CONSUMPTION.

Year	Spirits. Gals.	Wines. Gals.	Beer. Gals.	Tea. Gals.	Coffee. Gals.
1893	1.51	.45	16.08	10.56	14.00
1892	1.50	.44	15.10	10.96	16.34
1891	1.42	.45	15.28	10.32	13.60
1890	1.40	.46	13.67	10.64	13.32
1889	1.32	.56	12.72	10.32	15.58
1888	1.26	.61	12.80	11.20	11.58
1887	1.21	.55	11.23	11.92	14.50

In the above table the per capita quantity of tea and coffee consumed is reduced to its equivalent in infusion, on the basis that one pound of roasted coffee beans makes two gallons of infusion, and one pound of tea, eight gallons. An allowance of fifteen per cent is made from the quantity of green coffee used, for the loss in weight which results from the process of roasting.

It is estimated that twelve per cent of the quantity of spirits withdrawn for consumption is used in the arts, deducting which we have the following table representing the quantity of all liquors drunk as a beverage, and which, figured at the retail cost, makes the nation's drink bill as follows : —

	Gallons.	Per Gal.	Totals
Spirits, domestic	86,418,455	$4.50	$388,883,048
Spirits, imported (including brandy, cordials, etc.)	1,307,422	.....	*10,912,154
Wines, domestic	26,391,235	2.00	52,782,470
Wines, imported	5,596,584	4.00	†22,386,336
Beer, domestic	1,071,183,827	.50	535,591,913
Beer, imported	3,362,509	1.25	‡4,203,136
Grand total			$1,014,759,057

*Import cost, $5,082,515. †Import cost, $14,831,988.
‡Import cost, $2,782,630.

Last year the total consumption of tea was 88,131,088 pounds. At a fair average retail price, forty cents per pound, we have $35,252,435 as the cost of tea.

Coffee was the popular beverage until distanced by beer in 1890. The consumption based on net imports of the raw bean has been as follows : —

COFFEE CONSUMPTION.

	Per Capita. lbs.		Per Capita. lbs.
1887	8.53	1891	7.99
1888	6.81	1892	9.61
1889	9.16	1893	8.24
1890	7.83		

or about 560,000,000 pounds, which, at an average price of twenty-five cents per pound, gives $140,000,000 as the cost of coffee.

During the year ending June 30, 1893, the inhabitants of the United States spent for stimulating beverages, including tea and coffee, the sum of $1,190,617,281, or an average of $17.77 per capita. The entire expense of the United States government per capita was $6.69, of which liquor paid $2.05.

In 1893 the United States government collected a revenue from domestic spirits of $94,720,261 ; from beer, $32,548,893 ; from imported liquors, $9,256,617 ; total revenue from alcoholic stimulants, $136,525,861, or nearly thirty per cent of the total revenue. These figures explain the enormous leverage wielded by the liquor interests in national affairs.— *Literary Digest.*

Mrs. Smith— "Your boy looks bad ; what ails him ? "

Mrs. Jones — "Bad doctorin', I say, mum. Us poor people needs to pray with all our hearts : 'From all false doctrine, good Lord, deliver us.' I never did quite see the meanin' of it afore." — *Ex.*

Loss of Sleep.—Few persons who suffer from insomnia realize the fact that sleeplessness in itself is not a tenth part as harmful as the worry which usually accompanies it, or the habit which it so often induces of taking drugs and soporifics. The soundest sleepers are by no means the longest lived, notwithstanding popular opinion to the contrary. It is with the hope of speaking a helpful word to the habitually sleepless that Mr. George T. Angell, well known as the President of the Humane Society, gives his experience in this particular. He says:—

"I suppose there are very few persons in this country who have slept less than I have. In founding the Massachusetts Society for the Prevention of Cruelty to Animals, I had very little sleep for several months, in England no more; and I was often so weak that I could not walk the streets without dizziness. My attacks on adulteration were full of wakeful nights, and my lectures and addresses have rarely failed to cost me in their delivery one or two nights of little or no sleep, and in their preparation often many nights of little sleep."

Yet, notwithstanding all these years of incessant activity, when he felt that he was doing well to get *four hours of sleep* in a night, Mr. Angell finds himself in his seventieth year still active and happy, anticipating the hope that he may be usefully employed throughout eternity. He had to choose, he says, between living the life of a vegetable or losing his sleep, and he chose the latter. Many of his fellow-workers and friends who were sound sleepers have long since gone to their last sleep, showing that one may live to a good old age when the mind is absorbed in some noble, unselfish effort, and do a great deal of work with hands and brain, on a very limited allowance of sleep, if, as in Mr. Angell's case, there is neither the habit of worrying about the loss of sleep, nor the still more ruinous practice of taking anodynes or sleeping potions.—*Laws of Life.*

The Human Family.—The human family living on earth to-day consists of about 1,450,000,000 souls — not fewer, and probably more. These are distributed liberally all over the earth's surface, there being no considerable spot on the globe where man has not made his home. In Asia, the so-called "cradle of the human race," there are now about 800,000,000 people, densely crowded together, an average of about one hundred and twenty to every square mile. In Europe there are 320,000,000, averaging one hundred to the square mile, a population not so crowded as Asia, but everywhere dense. In Africa there are, approximately, 210,000,000, and in the Americas — North, South, and Central — 110,000,000, these latter, of course, thinly scattered over broad areas. On the islands, large and small, there are probably 10,000,000 more. The proportion of the extreme blacks and the whites, is as five to three; the remaining 700,000,000 are intermediate, brown, yellow, and tawny in color. Of the entire race, 500,000,000 are well clothed, that is, they wear garments of some kind; 250,000,000 habitually go naked, and 700,000,000 only cover the middle portions of the body; 500,000,000 live in houses, 700,000,000 in huts and caves, the remaining 250,000,000 virtually having no place to lay their heads.—*London Exchange.*

Will-power and Disease.—There is a great deal to be said in favor of what is best described as the "mental-science" cure for many of the minor ills of life. It is possible to throw off weakness, inertness, and languor, and infuse new life and spirit into one's own failing system by mere effort of will. True, it is hard at first, but with every trial it comes easier, until one may almost feel that the mind has gained a supremacy over the body. It is certain that the mind can, to a great extent, control the body, and drive away much that saps vitality and undermines the strength. To keep ever before the mind the idea that will-power is one of the strongest forces in nature, and steadfastly to refuse to yield to weakness, is to have gained something that, once possessed, no one will ever be willing to lose.—*Sel.*

A Hard Lesson.—(1) A barrel of apples is placed in the cellar of a house in a town in New Jersey, and is forgotten. (2) Nature does her relentless work and the apples decay. (3) Daughter No. 1 is found ill with malignant scarlet fever and dies the same day. (4) The sixth and last member of the family dies. (5) Cause of the extinction of the Laverty family: Germs, born through decay. Moral obvious.—*Congregationalist.*

Invisible Color.—*Teacher*—"Microscopical investigations lead us to believe that there are colors too delicate to be discerned by the human eye, invisible colors, we may call them."

Quite Young Student—"I know the name of one of them, sir."

Teacher (surprised)—"Indeed! What is it?"

Quite Young Student—"Blind man's buff."—*Texas Siftings.*

EXERCISE AS A REMEDY FOR OBESITY.

THERE is no class of patients to whom exercise, as a remedial measure, is of greater importance than to those suffering from obesity. In fact, in the rational treatment of this malady, exercise is indispensable; there is no physical substitute for it.

A person who weighs from one hundred and twenty-five to one hundred and fifty pounds more than he ought to weigh is a fat person; he is, in fact, obese. A man who weighs three hundred pounds when he ought to weigh but one hundred and fifty pounds, is compelled, so to speak, to carry about upon his back, constantly, another man of his own weight. Let any man weighing one hundred and fifty pounds take upon his shoulders another man of equal weight, and then undertake to walk a long distance, climb stairs, or go up and down hills, and it will be found that only a very strong man would be able to accomplish such a task. But this is just what the overfat man is compelled to do. His excessive flesh is a dead weight,—just as much a dead weight as though it were a mass of iron or stone.

The excessive weight of the fat man is due to a deposit, everywhere in the body, beneath the skin and around and in the muscles, in the cavities of the body, in every part of the body, in fact, of an excessive amount of residual tissue, or fat. In consequence of this accumulation of fat, the fleshy man finds exercise difficult, and sometimes even a very small amount of exercise is rendered almost impossible.

There are several very cogent reasons why the overfat man finds exercise difficult. In the first place, in addition to this extraordinary amount of weight which the obese individual has to carry and the extra work which he must do, the abnormal accumulation of fat directly interferes with exercise, so that he has to do the extra work at a disadvantage. There is, in the first place, an accumulation of fat about the heart, which is always present in the overfat man. This overburdens the heart, interferes with its movements, and weakens it. Then there is an accumulation of fat about the lungs. Fat accumulates between the cells of the lungs and in the pleura which lines the chest, so that the lungs are compressed. By the accumulation of fat in the abdominal cavity the same effect of compression is produced there. The distention of the abdominal cavity also interferes with chest-movements. The muscles are necessarily hampered by the abnormal accumulations of fat about and within them. The fat may be deposited in the muscular fibers themselves, which may, in time, become entirely replaced by fat, the muscles thus undergoing what is known as fatty degeneration. Not only the voluntary muscles but such important involuntary muscles as the heart, may undergo this fatty change. Thus we see that there are abundant reasons why the overfat man becomes easily fatigued,—his muscles are weak, his heart is weak, his lungs are compressed, and yet, notwithstanding these disabilities, he has an unusually large amount of work to do, even in the movements required for ordinary exercise.

But there are several other important reasons why the fat man suffers excessively from fatigue. The sense of fatigue is produced by the presence in the blood of an excessive amount of waste or poisonous substances thrown off from the tissues. An excessive accumulation of adipose tissue is necessarily accompanied by an accumulation of waste matter, for the reason that the tissues of the overfat man are spread out, so to speak, and there are many terri-

tories which lie at such an unusual and abnormal distance from the blood vessels that they are imperfectly drained. There being also an excess of these waste matters present in the tissues, it is evident that only a small amount of exercise is required to so increase the quantity of poisonous substances in the body and the blood that the nerve-centers will give rise to a sense of fatigue.

Deficient oxygenation of the tissues is another cause of fatigue. We depend upon oxygen to burn up these waste substances and bring them into a form to be easily eliminated. The compressed lungs are unable either to introduce the amount of oxygen required to destroy the waste substances as rapidly as they accumulate during exercise, or to eliminate with sufficient rapidity the toxic substances which have been prepared for elimination.

Still another reason for excessive fatigue in obese persons is the excessive accumulation of heat within the body, due to the fact that the body is covered with a thick, non-conducting coat of fat. Suppose that a healthy person who is not excessively fat should put on a padded cloak an inch in thickness and so made as to completely cover every portion of his body,—arms, lungs, legs, and trunk,—and should wear this cloak all the time, night and day, in all seasons of the year, in summer as well as in winter. Now let the individual so clad exercise vigorously by climbing stairs, climbing a hill, walking fast, or by any other means; it is readily apparent that the poor man would find himself much hindered in his exercise, and would speedily complain of breathlessness, fatigue, and all the inconveniences which distress the overfat man. The condition of the obese man is often worse than that of a man wearing a thick cloak. His cloak of fat is not simply an inch in thickness, it may even be three or four inches in thickness in some portions of the body; and its weight is much greater than that of an ordinary padded cloak. As a non-conductor of heat, it is still more effective, since it is non-porous, and does not allow the circulation of air which even the thickest cloak would permit to some extent. This cloak of fat retains the animal heat which should be thrown off by the free circulation of the blood through the surface and by vigorous perspiration. The blood cannot readily reach the surface, and the cooling which takes place from evaporation at the surface is less efficient than in a thinner person. The internal temperature naturally rises to an abnormal degree as the result of exercise, and fatigue and breathlessness are the result.

Another form of fatigue from which the obese man is very liable to suffer is what is known as consecutive, or secondary, fatigue. This is a condition similar to that from which the foundered horse suffers. It is due to the accumulation of certain poisons within the body, poisons which result from exercise, and which are always present in excess in the overfat man, so that only a slight additional accumulation of the poisons is necessary to induce a morbid state. This condition may be induced in a healthy person by excessive exercise, and is manifested by stiffness and soreness of the muscles and joints, often accompanied by slight fever. The overfat man is much more liable to this condition than the ordinary individual, for the reason that he is much more liable to take excessive exercise than an ordinary person. If he takes a walk with a friend, he must walk more rapidly than he is really able to do, in order to keep pace with his companion. The overfat man, carrying perhaps double weight, walking at the same rate as another person, does twice the amount of work performed by a man of ordinary weight. This is readily shown by a simple formula: The amount of work done by a person walking at the rate of three miles an hour is readily determined by multiplying the distance walked, in feet, by the weight of the individual, and dividing by twenty. The result will give the number of foot-pounds lifted by the individual in walking a given distance, or their equivalent; for example, if a person weighing one hundred and fifty pounds walks one mile, we multiply the number of feet in a mile (5280) by the individual's weight (one hundred and fifty pounds), and divide the result by twenty, a factor which has been determined by carefully conducted experiments. The result is 39,600. In other words, in walking one mile a person weighing one hundred and fifty pounds does an amount of work equivalent to lifting 39,600 pounds, or nearly twenty tons, one foot high; in other words, he lifts the weight of his own body through one twentieth of the distance through which he travels. It is evident, then, that a man of double the weight of another man, each walking the same distance, does twice the amount of work, and in walking at the same rate he is evidently liable to do an excessive amount of work, and so is more than usually liable to suffer from secondary fatigue.

The breathlessness or susceptibility to fatigue, of an overfat person is something more than an inconvenience. We often see an overfat person panting for breath. This condition is not simply one of inconvenience, but it involves a positive danger. The weakened and overworked heart of the obese person

may, from a little additional overexercise, become completely exhausted and paralyzed. The overfat person is very liable to die from heart-failure. It not infrequently happens that an overfat ox falls dead in the street while being hurried on his way to the slaughter-house, just as the overfat man drops suddenly upon the pavement and dies before assistance can reach him, as the result of extra exertion, perhaps in catching a train. On account of this danger, it is important that the obese person should regulate his exercise with great care. A very fleshy person cannot take the same exercise as would be a proper prescription for a person of ordinary weight. The first exercises taken must be very gentle in character, and the amount of exercise must be systematically increased from day to day as the accumulation of fat diminishes and the muscular power of the individual increases.

The obese person requires more exercise than the ordinary individual, but has less capacity for exercise than persons of normal weight. His obesity may be the result of sedentary habits. Idleness and overfeeding are the two most common causes of obesity. There are many exceptions to this rule, nevertheless it holds good in a large majority of cases.

(To be concluded.)

THE FOOTBALL WAR.

For many years Thanksgiving day and the Thanksgiving holiday season have been the favorite time for public exhibitions of the game of football and rival matches between "teams" of different colleges. It can hardly be imagined that the game of football was ever other than a rough game, but the interest in these annual encounters has increased from year to year to such an extent that they have practically ceased to be athletic, and have come to be actually little more than fights, and, in many instances, pugilistic encounters of the fiercest character. A few quotations from recent newspaper accounts of the game of college football will give the reader, who may not already have formed an opinion on this subject, ample data for deciding as to its character. The following is from a New York daily paper, describing a game played two years ago:—

"The game was a good one. J. was ruled off for slugging, W. taking his place. Capt. D., of the —— team, had a bad scalp wound, and ten minutes were lost while it was sewed up, after which he pluckily continued the play. S. sprained his ankle severely and had to be helped from the field, C. succeeding him; and B. was stunned in a wedge rush, and L. took his place. Such minor matters as bleeding noses and flesh cuts were not counted, and both teams were like Comanche Indians in their war paint when the game was over.

"There has not been a game played in this neighborhood within a year, of any importance, where there have not been from one to half a dozen men injured."

The following extracts we copy from the Sunday *Inter Ocean* of November 25, and the daily *Inter Ocean* of Friday, November 30, of the present year: —

"In spite of the new rules, the time consumed this year was greater than last, owing chiefly to the examination of numerous injuries received by the players. Wrightington's collar bone was broken; Hallowell was carried off the field disabled; Murphy lay bleeding and insensible on the ground, the result of a hard punch in the stomach; Brewer was hurt in the first half, but was able to resume play, though subsequently retired by the physician's order.

"Just before the game began, George Gray, the Harvard half-back, who broke his leg in a practice game, hobbled down the line on crutches and received an ovation. He sat just inside the lines with his broken leg stretched out on a chair — a hoodoo and a horrible example. In his crippled condition he would not have made a bad type of his team.

"The only Butterworth was more severely injured this afternoon than ever before in his football career. His right eye was almost gouged out in the first half, and he cannot see out of it at all. Besides, the great full-back has a badly wrenched knee and ankle. Murphy, who was insensible for several hours, has improved rapidly."

"*Rochester, N. Y., Nov. 29.*— To-day's game of football on the campus between the University of Rochester and Hamilton College elevens was the roughest but one of the best exhibitions of the kind ever seen here, and the twelve hundred spectators were thoroughly pleased. Twice during the play the stretcher was used to carry an injured player off the field. Rochester had a heavier team and won by a score of 16 to 0.

"Henry Storm, Rochester's left tackle, had his right leg broken below the knee during a scrimmage. He had no sooner been carried off the field than Jessup, of Rochester, had his nose broken. His in-

juries were repaired and he went back to his post. Five minutes later a Hamilton heavy-weight kicked him in the face and broke the nasal bone in another place. Jessup kept playing, and sustained no further injury. Aiken, of Hamilton, had his nose broken during a rush, and was carried unconscious to the field hospital."

"*Kalamazoo, Mich., Nov. 29.*— The high school and college football teams played here to-day, the score being 16 to 16. It was the hardest fought and most brutal game ever witnessed here, and those members of the teams who were not nearly overcome by exhaustion were badly injured, there being broken arms and fingers and cut heads galore. This will probably be the end of football in this city, for this season at least."

The above is scarcely a tithe of the casualties recorded in the papers as the result of games played during Thanksgiving week, but they are amply sufficient to demonstrate the brutal character of this so-called "sport." If these same men had met in equally rough encounters in defense of what they considered personal rights, the law would have stepped in at once and landed all of them in jail. If an accident had occurred in a theater or a church by which so large a number of persons had been injured, the fact would have been telegraphed to all parts of the world by the Associated Press as a great calamity. If public notice had been given by the men who engaged in these fights, that they proposed to meet on a certain street-corner or in a given gymnasium for the purpose of punching one another's noses, twisting one another's legs until put out of joint or broken, knocking one another insensible, gouging out one another's eyes, and pommeling one another generally, the police would have turned out in force to stop the exhibition. The only apparent difference is, that instead of making an announcement of what it was really proposed to do, the announcement was, that football games would be played, and under the guise of football, the participants proceeded to bruise one another to their hearts' content.

We are glad to note that several leading colleges have prohibited football for the future among their students. The brutal sport has still survived, as there seems to be a growing liking for this sort of thing in certain quarters; but in the opinion of the writer this is a sort of training which does not comport with a highly advanced degree of civilization. If men want to compare notes as regards strength, agility, courage, or mental acumen, other means can be found by which a much more fair and accurate test of these qualities can be made than by these so-called athletic games, which are really nothing more than battles fought in a fierce and often in a degrading manner.

The effect of these exhibitions is degrading, not only to the participants, but to the spectators as well, as is shown by the following note, which we clip from an account of a recent game: —

"When the crowd began to gather at the grounds, there was a grand crush. There were pushing, shoving, swearing, and tearing of clothing, until finally the crowd became partially civilized and commenced to enter the gate in the proper manner."

"You look pale this morning."

"Yes," replied the young man, "I feel very much out of condition. You see, there 's a girl living in our house who practices her vocal lesson continually, and I guess I 've gotten high C sick." — *Washington Star.*

Vegetarianism for Pedestrians.— We quote the following from an editorial in the London *Spectator*, referring to the European walking-match, which took place sometime since, in which vegetarians won the first and second prizes: —

"If there is one thing certain about the races which eat no meat, it is that they can march. Sikhs and Hindostanees who live on millet and milk and whose ancestors have done so for two thousand years, can walk rapidly as long as life remains in them. A Sepoy regiment will walk a European regiment to death on food their competitors would pronounce wholly insufficient to sustain vigorous life. A Hindostanee carrier, with a weight of eighty pounds on his shoulders,— carried, of course, in two divisions, hung on his neck by a yoke,— will, if properly paid, lope along over a hundred miles in twenty-four hours, a feat which would exhaust any but the best-trained English runners.

"Nor is this confined to any particular race. Highlanders, fed on milk and porridge, are the most active gamekeepers in the world; and half a century ago the best rough masons in Scotland and the best ploughmen in England, were men reared on a diet in which meat played no part. These facts prove that men can live and grow strong when fed only on vegetarian food."

The man who is perfectly proportioned weighs exactly thirty and three quarters pounds for every foot of his height.

TEACHING CRUELTY TO CHILDREN.

BY MARY WOOD ALLEN, M. D.

THE Indian brings to his papoose a miniature bow and arrow that he may begin in infancy his training as a future hunter. The civilized man brings to his baby a whip; he doubtless could not say for what reason, but the lesson is one in cruelty. With this whip he is taught to strike the cat, the dog, his brothers, and even his parents. The person who is struck pretends to cry, and every one else laughs, and so he is taught to take pleasure in the sufferings of others; for he has no comprehension of the fact that the manifestations of pain are only a pretense. If no whip is at hand, he perhaps is taught to pound with his fists, to strike with open palm, or to pull hair, stimulated to increase these demonstrations by the encouraging laughter of lookers-on. It is "so cute" in the baby, but by and by when, in a fit of angry disobedence, he strikes mamma in the face, he is surprised to be struck by her in return, and no doubt wonders at her injustice, as well he may.

In the spirit of retaliation, which is a spirit of cruelty, children are taught to strike the chair or door against which they have fallen, and to say, "Naughty chair, to hurt baby." The child does not distinguish, by its reason, between revenging himself upon an inanimate object and upon a person; so it is not surprising that, when he is hurt by some one, accidentally or not, he flies at the person in a fury, and puts into practice the lesson he received in regard to the chair.

Cruelty to animals is often taught by the acts of older people. The father kicks the cat or dog, and when remonstrated with, replies angrily, "Let it keep out of my way, then;" and the child imbibes the idea that dumb creatures have no rights which creatures who can swear and scold are bound to respect, and, instigated by the former lessons of taking pleasure in the sufferings of others, amuses himself by tying tin cans to the dog's tail, or swinging the cat by hers.

The poet says:—

> "I would not enter on my list of friends,
> Though graced with polished manners and fine sense
> (Yet wanting sensibility), the man
> Who, needlessly, sets foot upon a worm."

Do many parents entertain such sentiments when, in their country walks with their children, they ruthlessly and needlessly crush out the lives of animate creatures, which to them seem only ugly, but which, to the discerning eye, are full of wondrous beauty? And their children are not eagerly searching for the beauties of animated nature, but their sons are robbing birds' nests or stoning frogs, and their daughters are decorating their hats with the dead bodies of sweet, feathered songsters, without a reproach of conscience. I have often thought that the "noble sport" of hunting and the gentler one of fishing were lessons in cruelty, and have wished that the taking of life might cease to be regarded as a sport.

A refinement of cruelty is often taught children by the unkind remarks of older persons concerning those who are unfortunate in birth or surroundings. In many a cultivated family, where all the amenities of life are scrupulously regarded as far as people of equal rank are concerned, the children show the spirit of home training by treating with disdain the children of the poor, who are not responsible for having been born poor or brought up in neglect. In their conduct the more fortunate children are but repeating the daily lessons imbibed with the home atmosphere,—that there is some personal virtue in social rank, and that it is an evidence of superiority to despise those to whom Providence has not shown such favor. Ruskin says that there are only two faults that are of real consequence—idleness and cruelty. Are not

the high-born in danger of being both idle and cruel?

Our historians are chargeable with teaching cruelty, from the fact that to most of them history is principally a recital of wars and cruel deeds. We learn little or nothing of the life of the people, their customs, dress, or speech, but we are compelled to be interested in this war and that, the date when it occurred, and how many were killed in each battle, and the bravest man is he who has been responsible for the greatest slaughter. Parents who are telling their children to-day about our Civil War do not spend as much time in making clear to them the cause, and teaching them to hate that most cruel institution,—slavery,—as in the details of special battles, and laudation of the men who did the most daring deeds. Ah! if they could only teach it so that we might, as Ruskin says, "trace the hidden equities of divine reward, and catch sight, through the darkness, of the fateful threads of woven fire that connect error with its retribution," then indeed would history be no longer a lesson in cruelty.

LITTLE SLOYD TEACHERS.

BY MARTHA WATROUS STEARNS.

Little Miss Muffet
Sat on a tuffet,
  Drawing a paste-board tray!
When there came a great spider,
Who sat down beside her
  And asked if he could n't stay!

You see, Mother Goose had been dead a good many years, and some very silly ideas had died with her. Our Miss Muffet of 1895 had no desire to do so unhygienic a thing as to eat sour milk — she could have told any one that it was swarming with bacteria! And as for being afraid of spiders, she had never thought of such a thing. She had been taking nature studies at school, and sloyd too, and knew that spiders were very interesting members of society from both standpoints; so instead of being "frightened away," like the Miss Muffet of former days, she said, "I am so glad you 've come, for I have been wanting to get a good look at you under my glass. Now just hold on there, still, a minute, while I get my glass ready. Why! I never knew your feet were like combs, before. I see now why you can walk on those little web ropes without falling off. What lovely fur you 've got on your legs, and how clean you keep it! I should think it would get all tangled up in your webs, Mr. Spider."

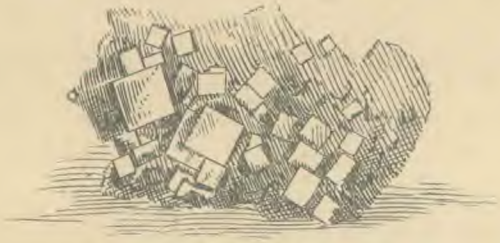
The Spider under Miss Muffet's Glass.

Miss Muffet under the Spider's Glass.

"Oh, yes, Miss Muffet, but you see I have combs in my jaws as well as on my feet, and when I am through weaving, I always comb my hair and all the specks of dust and bits of webs I comb out and roll up in a little ball and throw away."

"Now if you please, Spider, dear, just turn about so I can get a look at your spinneret," and Miss

Muffet gently pulled him around by one leg. "Oh, how funny! you 've got five little bags of liquid thread, and each bag is full of fine needle points,

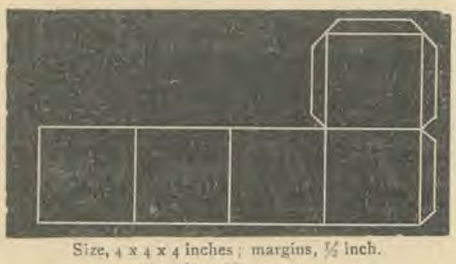


CUBE FORM.

and the thread comes through each point and stiffens out when it feels the air, like my sloyd glue, in little shiny strands. Why, Spider, dear, I never dreamed you were such a wonderful little thing! To think that you twist all these together to make one line for your web!" and Miss Muffet pulled one of her own silky hairs and laid beside the fine web threads, "it 's like wire rope beside your web."

"Of course it is, Miss Muffet, it takes four million of my threads to make one of your hairs."

Now Miss Muffet was so lost in admiration of her new friend that she could never tell whether he began to grow larger (as is apt to be the case when we keep our eyes fixed on the fine points of others, instead of ourselves) or whether Mr. Spider pulled out some magical reducing glass for bringing great objects like herself within his range of vision. The result was the same,— she felt herself perceptibly diminishing in size, until she was conscious of being the object of Mr. Spider's special consideration. It did seem just a little funny at first to see eight big round eyes staring at her— "Branch, vertebrata; class, mammalia; order, bimana; genus, girl," Mr. Spider was just saying. "O dear, I wonder if he is going to chloroform me for his cabinet," and Miss Muffet squirmed a little. Then Mr. Spider began to run his feet combs through her hair, saying, "How fine for



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THE BOX UNFOLDED.

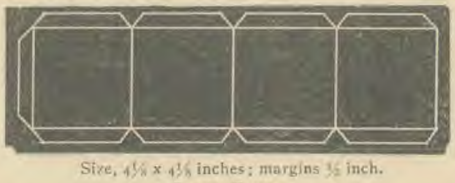
webs that would be if it could only be reduced sufficiently!" Miss Muffet kicked vigorously. "Just hold still there, Miss Muffet, a minute, till I get through using my glass. You are too active a specimen, my dear little girl. Now I want to see you do sloyd work, it would be very interesting to see what a queer little creature like you could do. Sit right up there under my glass, and I will show you how."

Miss Muffet tried to obey, but her lines did not look any straighter than they did in the sloyd room.

"Why!" exclaimed Mr. Spider, "you don't even know how to make straight lines with your ruler and pencil, while I make them with just thread!

"How do you do it?" humbly inquired Miss Muffet.

"It 's very simple, little girl. Did you ever study my webs, and notice what beautiful angles and cir-



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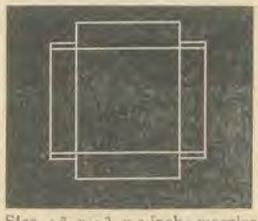
PAPER COVER.

cles I make, *all* with straight lines! I just remember one thing, I get my starting point right, and I find out just where I want to go, and then I spin the *shortest* way across; the shortest way between two points is always a straight line. You did n't know I could teach geometry, did you? Crooked lines and lies are always the longest way around; for if you make one, you must make another to cover it up, and it always spoils the work and the worker."



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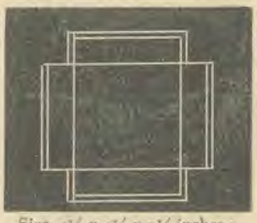

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PAPER COVERING.

"Thank you, I will try to remember," sighed Miss Muffet, "I wish I could make the edges of my boxes as beautifully straight as you do your webs, and, O Mr. Spider! my teacher told me I must make a square box, but it must measure just the same on every side, and have a cover that will go on easy, and not fall off when the box is turned upside down; and the hardest part of it is, that I must find just that same shape in something natural. Your webs are beautiful, but they are flat. Now can you tell me of anything solid that we can find outdoors, that shape,— something natural, you know? You

have so many legs you must have run around the world a great deal and seen most everything."

"Well, Miss Muffet, your two legs will take you over to that old dump, just as fast as my eight will me, and when you get there your two eyes will be enough to show you some shining little square things down in the rock that was dumped from that old prospect hole. I have spun many a web there, and unless my eyes have very much deceived me, you will find just what you want; but before you go, come with me, I have a sloyd room," and Mr. Spider pulled her off by one hand to a roomy little place under some bushes, and sure enough there was a regular sloyd room.

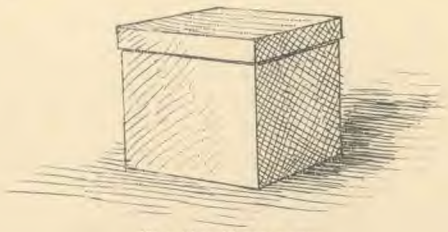
"Here's my friend, little Miss Muffet; she is learning to do some of our work; please show her all you can."

Miss Muffet rubbed her eyes in surprise as she looked around, but it was true, there was basket sloyd going on in a branch overhead. The worker was dressed in feathers, but was weaving as fine a basket house as one would wish to see; then there were other little workers in violet dresses, with wings not just what Miss Muffet thought carpenters should wear, but carpenters they were nevertheless, doing some fine wood sloyd on an old stick, boring out a good-sized house; then there were some of the vespian family in long, bronze, tight-fitting coats, and sleek wings, at paper sloyd. Beside these there were the plump black and yellow wax workers, who had just completed a long row of six-sided prisms.

"Well, what do you think of us?" inquired the big spider.

"I think the wise man said true, that 'there are some things that are little upon the earth, but they are exceeding wise,' and I think I should like to learn more about your sloyd work; but if you will please stop reducing me, I should like to go to my sloyd class."

"Certainly, Miss Muffet, you are at liberty," and Mr. Spider graciously bowed her out, and there Miss Muffet found herself sitting on the rocky dump studying iron cubes. The crevices between the rocks were filled with shining webs, and now and then a big brown spider scampered in and out. Miss Muffet wondered if all she had seen was really true. Was it?



THE BOX COMPLETED.

HOW MISS MUFFET MADE HER BOX.

First she counted all the sides of the shining little cubes. Then she thought how they would look, all spread out flat, then she planned how they could be put on the pasteboard so they could be cut and folded together in a box without wasting the pasteboard. Next she planned the margins for gluing her box together, and then it was ready to be creased, cut, and glued. After that she thought out the paper cover, so it would be large enough to cover the box. Then she went to the blackboard and told it all in chalk, as you see in the pictures. And this is the way she made her box. Can you make one like it?

THE GRAY WOOLEN SOCK.

VARIOUS exclamations greeted Nell Erwin as she entered the schoolroom and drew out her work,—a coarse, gray woolen sock.

It was "fancy Friday" at Daisy Hill Seminary,—something peculiar to the place. Three Fridays out of the month were spent in the customary elocutionary exercises; but the afternoon of the fourth was spent in a cozy, informal way, the girls, both day scholars and boarders, bringing their fancy work, and Madame Lane reading to them from some standard work.

On this particular Friday there was a brilliant display of fancy work, Helen Grant was embroidering a pair of slippers, with splendid purple and yellow pansies; Lulu Fletcher, a sofa pillow, with a cluster of lilies on cardinal satin; Kate Lee was at work on an elaborate stand-spread; Mary Morse was crocheting a fleecy white shawl; Carrie Evans was making an applique bracket; a dozen or so girls were deep in the delightful mysteries of "crazy quilts;" and—but dear me! I have n't the time to enumerate all the beautiful things. Seats and desks were covered with a dazzling array of silks and worsteds. So it was no wonder that Nell's humble gray sock created such a sensation. However, though she blushed a little at the pleasantries of her mates, she took her seat and courageously set to work.

"Why, Nell, I thought you were going to bring that lovely foot-rest!" said Helen Grant. "You told me yesterday that you were going to finish it to-day. Have you it already done?"

"Oh, no!"

"Then why under the sun did n't you bring it instead of that solemn old sock?"

Nell blushed still redder. Then she said hesitatingly: "Well, you see, girls, I did think I 'd bring the foot-rest. In fact, I had it all done up in my work-bag, and then I remembered that I would need a pair of scissors. So I went to mother's work-basket; and in rummaging around there, I got an idea!"

"An idea in a work-basket! How very remarkable! Now, I shall know where to go when I am obliged to write a composition and can't think of anything to say!" said Maude Hasket.

"What I mean is this," said Nell, earnestly; "I found that work-basket full — yes, full to overflowing — with things to mend, make, and fix! There were Billy's mittens to mend, the baby's petticoats to be shortened, buttons to be sewed on Kitty's apron, a patch on Tom's jacket, and all for my dear little mother's one pair of tired hands. And all to be done this afternoon or evening! I tell you, girls, I felt ashamed when I looked at my own nonsensical piece of fancy work. And then and there I made up my mind to do something toward lessening the contents of that basket. So I seized this sock, for I remembered hearing mother say only a few days ago that father needed a new pair. I 'm not much of a hand at knitting; but I 'll do all I can this afternoon, working on the leg, and when I get home to-night, mother 'll show me about fixing the heel."

There was a short silence. Presently Maude said: "Well, girls, I dare say the most of us have mothers whose work-baskets are in the condition of the one Nell has described. I've no doubt that I can find one in my own home. There are six of us children,—four younger than myself. It would take one woman's time to keep our little Ben in anything like decent order. He is a veritable Peggoty for button-bursting! And Sister Flo is almost as bad."

"Well, it's pretty much the same at our house," observed Maggie Gray. "Of course there are not so many of us; but still, mother is sewing, mending, and darning about all the time."

"And mine, too!" said Laura Harris. "It was only last evening that I heard father ask mother if she would n't go to the lecture with him; and she said she would like to very much, but could n't because she had to patch Jack's trousers, so that he could wear them to school the next day. And I sat there, like an unfeeling wretch, working on a silly, good-for-nothing lamp-mat! And mother did look *so* tired and wistful, poor darling! Father seemed disappointed, too. Now, I might have offered to do the patching, and so given her a chance to go. It would have done her so much good!"

"Well," said Maude, briskly, "I guess we 're all in the same fix. We have been going on and doing our own sweet wills; and I, for one, propose that we make a change. Suppose we all agree to go to our mother's mending-basket and get work from it for our next 'fancy Friday.'"

"All right! we will!" echoed the others. Further conversation on the subject was put an end to by the entrance of Madame.

Four! chimed the great clock in the hall.

"Young ladies, you are dismissed," said Madame, closing her book. "Next time, I think we will have a little prose instead of poetry. It will be a change, you know. Good afternoon."

"Prose instead of poetry," Maude repeated, as she put on her wraps. "And we 'll have the prose of sewing instead of its poetry, won't we?"

And Nell answered by a wave of the gray woolen sock. "You dear old sock," she whispered as she rolled it up, "how I did hate to bring you this afternoon, for I was so afraid the girls would make fun of me! But all turned out nicely, after all; and you had a mission, did n't you, you humble thing?"
— *The Pansy.*

WHAT TO CULTIVATE. — An unaffected, distinct, silver-toned voice.

The art of pleasing those around you, and seeming pleased with them and all they may do for you.

The charm of making little sacrifices quite naturally, as if of no account to yourself.

The habit of making allowances for the opinions, feelings, or prejudices of others.

A good memory for faces and facts connected with them, thus avoiding giving offense through not recognizing or bowing to people or saying to them what had best be left unsaid.

The art of listening without impatience to prosy talkers, and smiling at the twice-told tale or incident.
—*Christian Observer.*

GRAINS WITH FRUIT SAUCES.

THE different preparations of grain, particularly those milled from wheat, oats, corn, and barley, are among the most nutritious foods, and when properly cooked and served with dressings prepared from fruits and fruit juices, form exceedingly pleasing and palatable dishes. These dressings are easily prepared, and give a flavor and piquancy to the grain which is frequently relished much more than the ordinary dressing of cream and sugar. Especially is this true of the use of grains by children. The following are some of the many excellent ways in which grains and fruits may be thus served : —

Cerealine with Grape Sauce.— Into one measure of boiling liquid (either milk or water or part of both) stir an equal measure of cerealine flakes, and cook in a double boiler from one half to three quarters of an hour. Serve with a dressing of hot grape pulp, or one prepared from the juice of grapes heated to boiling and slightly thickened with a little corn-starch, in the proportion of a tablespoonful of the starch, previously rubbed smooth in a little cold water, to one pint of fruit juice. If the juice is quite thick, dilute it with one third water. Cook until thickened, sweeten if desired ; strain to remove any lumps, and serve while warm on hot grains. Farina and cornmeal are also excellent served with grape sauce.

Boiled Wheat with Lemon Sauce.— Select newly cut wheat, well rubbed or threshed out. Look it over carefully, wash, and put to cook in five times its measure of water. Cook gently until the grains burst open, and can be readily mashed between the fingers. This will require from four to ten hours, the time depending upon the age and variety of the wheat used. To prepare the sauce, heat a pint of water in the inner cup of a double boiler. Into this, when boiling, stir a dessert-spoonful of corn-starch, previously rubbed smooth with a little cold water, cook five or ten minutes, until it thickens. Score a large lemon with the tines of a silver fork, and when the oil is exuding, rub a small quantity of sugar over the surface, to flavor it. Afterward cut the lemon and squeeze the juice from it. Add the juice and one half cup of the flavored sugar to the hot corn-starch mixture, allow the whole to boil up once, stirring constantly, then take from the fire and serve hot or cold on hot grains.

Pearl Barley with Lemon Sauce.— Carefully look over and wash a cupful of pearl barley. Cook in a double boiler in five cups of boiling water for four hours. Serve hot with a lemon sauce prepared as above. Cracked wheat, pearl wheat, and oatmeal are also excellent served with lemon sauce.

Graham Grits with Blueberry Sauce.— To four parts of water boiling in the inner dish of a double boiler add slowly, so as not to stop the boiling of the water, one part of graham grits. Stir until thickened, then place in the outer boiler and cook from three to five hours. Serve hot with a sauce prepared the same as grape sauce, from the juice o canned or fresh blueberries.

Browned Rice with Black Raspberry Sauce.— Spread a cupful of rice on a shallow baking tin, and put it into a moderately hot oven to brown. It will need to be stirred frequently to prevent burning, and to secure a uniformity of color. Each rice kernel, when sufficiently browned, should be of a yellowish brown, about the color of ripened wheat. To each cup of browned rice add two cups of water, and steam in a steamer over a kettle of boiling water or in a patent steamer for a half hour or until each kernel is soft, separate, dry, and mealy. Serve with a sauce prepared from canned or fresh black raspberries in the same manner as directed for grape sauce.

E. E. K.

A HISTORY of sugar was written in 1799, by a Dr. Mosely. It states that sugar, when first introduced into each country, was used only medicinally. Pliny, the naturalist, leaves no room for doubt on this point. Even in Arabia, in the time of Avicenna (A. D. 980–1038), though sugar was an article of commerce from the East, there is no record of its being used for dietetic or culinary purposes, nor for several centuries afterward. It was chiefly used to make nauseating medicines pleasant to take.

TO TAKE OUT MILDEW.— Mix soft soap with powdered starch, half as much salt, and the juice of one lemon ; spread the mixture on the part on both sides, with a brush ; let the goods lie on the grass day and night till the stain comes out.

TO TAKE the brown discoloration off dishes which have been used to bake custards, pies, puddings, etc., rub with a damp flannel dipped in whiting, scouring sand, or sand soap.

SURFACE FRICTION AS A REMEDIAL AGENT.

THE health of the body as a whole, and also the functional integrity of each organ, depend so much on the proper blood supply that any measure which will improve and strengthen vascular walls and increase the activity of the circulation, is always of importance.

There are three kinds of vessels through which the blood flows in its course through the body,— the arteries, the capillaries, and the veins. The arteries start in the left ventricle, a large cavity in the left side of the heart, which receives the pure blood after it has been oxygenated by contact with the air in the lungs. The walls of this cavity contract, thus forcing the blood out of the ventricle into the artery. The artery then passes down through the center of the thorax and the abdomen, but close to the spinal column, giving off branch arteries to each one of the principal organs of the body.

Arterial blood contains all the material needed for the growth and repair of the living tissues, and it also carries oxygen to neutralize the poisonous gases arising from the waste products of tissue change, the tissue being worn out by bodily exercise.

The walls of the arteries are too thick and strong to allow this nutritious matter to escape through them into the tissues, thus to fulfill its purpose in the body, so nature has provided a set of small, hair-like tubes, only a fraction of an inch in diameter, with very thin walls made up of cells flattened so as to be much thinner than the finest tissue paper, and these little vessels are connected at one end with the arteries and at the other end with the veins.

The blood stream in the arteries runs quite swiftly, as we can tell by feeling the pulse or watching the heart beats; but it becomes slower in these small capillary blood vessels, thus giving time for the oxygen and the nutritive matter in the blood to pass out through their coats, and for the waste products to be taken in and carried on to the veins. Wherever this takes place perfectly, we find the part well nourished.

In those hair-like vessels much of the force of the heart's contraction is lost, and many things may occur to hinder the return of the blood through the veins to the two large vessels, the ascending and the descending vena cava. From the right side of the heart the blood passes to the lungs through a large vessel called the pulmonary artery, where the corpuscles dispose of their load of carbonic acid and other waste matters, and reload with oxygen.

There are twice as many veins as arteries, yet very often,— as from bad position ; change of temperature, as chilling of a part ; constriction ; compression, as from tight bands ; tumors, constipation, pregnancy, and the like ; also weakness from idleness, overwork, sedentary habits, or disease,— the circulation is disturbed, the blood flow becomes sluggish in the capillaries and veins, and the part is poorly nourished. The veins become dilated, as is often seen in the condition of the lower extremities, known as varicose veins ; and in extreme cases the circulation of a part may cease entirely and the part die, as in senile gangrene in the aged, and bed sores in those weakened by fevers and other severe acute diseases. Sometimes the arteries pour blood into a part more rapidly than it can be used for nutrition ; then the veins are unable to convey the blood away rapidly enough. This condition is present in all acute congestions and inflammations. It first causes increased functional activity, and may terminate in an abscess or what is known as broken breast, in death and destruction of the whole or a part of the organ. This increased activity of the circulation also causes a rise of temperature, and in the sluggish after-flow a corresponding abnormal depression or acute inflammation. A boil or an

overactive secretion of milk in the breast are examples of the former, and a cold, clammy skin and cold extremities are examples of the latter.

Physical exercise properly taken, as walking, running, sawing or chopping wood, household duties, and other useful manual labor, as well as many out-of-door sports, all tend to quicken and excite a healthy circulation of the blood. But many invalids are too weak to exercise in this way, and there are also some occupations, like street-car driving, where there is little chance for change of position, and in all sedentary occupations in which the lower extremities are kept for a great length of time in an inactive, dependent position, the veins become overcharged with blood, which causes permanent dilatation and the troublesome condition known as varicose veins. Sometimes the result is so serious as to cause death of the tissues and the formation of indolent ulcers, which may continue for years.

In cases in which the circulation is too feeble to bring about a healthy reparative process, bed sores are often formed in patients who are obliged to lie in one position for a great length of time, as the result of compression by which the circulation of the part is entirely cut off. In high fevers the surface is often blanched, and the patient feels chilly, because there is too little blood at the surface and too much in the internal organs of the body; or the surface may be hot and livid from capillary distention and blood stagnation, and the volume of blood on the surface remain unchanged, the temperature being thus maintained because of imperfect heat radiation and the failure of the circulation to bring fresh blood into the surface vessels to be cooled.

The judicious use of water in all these cases is a very efficient means of reducing the temperature as it cools the surface and quickens the blood flow. Similar results may be obtained by using simple friction or rubbing with the hand. In fact, some physicians have proposed to substitute the cool air bath, supplemented by a brisk hand rub, for the cool water bath.

To give a hand rub it is not necessary for the operator to understand how to give massage as would a trained professional nurse; but he should remember a few simple principles: first, that a light, brisk, to-and-fro dry rub will warm a chilled and bloodless surface and bring a glow to the skin after any cold water treatment much sooner than one given more forcibly but more slowly. Secondly, always rub from the circumference toward the center of the body, following the returning blood flow through the veins, when operating to relieve any congested organ. Thus, in case of varicose veins of the legs and feet, or congestion from standing or sitting, rub briskly and firmly upward; for the same condition of the hands and arms, rub upward toward the shoulder; for congestion of the head and neck and the upper part of the spine, rub downward toward the heart; for the lower hips and abdomen, rub backward toward the spine. This is called centripetal rubbing, because the stroking follows the current of the venous blood toward the center of circulation — the heart.

The rubbing for constipation should be circular and downward, following the course of the intestines.

To warm a patient who has been chilled either from prolonged exposure to cold, immersion in cold water, as in partial drowning; or from any other cause, place the patient in a warm room, wrap in warm woolen blankets, and give the skin a brisk to-and-fro dry rub. Two or more persons may take part in administering this treatment. The body should first be wiped dry, and the friction kept up until the surface becomes red and warm. Before beginning the treatment, be sure that the patient is breathing regularly. If in a warm room, rub the skin without having anything between it and the hand; but if the patient is out-of-doors, take him to the most sheltered available place, and lay him on the driest, warmest surface at hand, as upon warm sand or straw, dry leaves, grass, or a board, and apply the friction over some covering, as a dry, warm blanket, to prevent the air from increasing the surface chill. Keep this up until the circulation is well established and the patient is conscious.

In the case of a tired, overheated person who feels sick and sore after resting, a brisk, vigorous centripetal rub will start the blood in the external vessels to flowing toward the center, carrying with it the waste products which were hindering its progress, and rendering painful every muscular action. It will allow fresh blood to flow through the capillaries, furnishing the needed oxygen and the building and heating material to make needed repairs and furnish fresh energy for another day's work. The wise teamster thus treats his weary horse after a hard drive, giving him a good rubbing off to prevent founder.

To relieve the stagnation of blood due to remaining in one position too long a time, as of the back in long illness, turn the patient on one side and rub the spine briskly with the hand. This treatment repeated every few hours will not only prevent bed sores, but also the stagnation of blood in the lower

portion of the lungs, of the liver, and of other internal organs. Inflamed and rheumatic joints, especially when the disease is of a subacute or chronic form, can be relieved from pain and heat by elevating the part and rubbing it until it becomes cool and the pain is relieved. Gentle stroking of the head and spine will often relieve nervousness, and put a tired, restless patient to sleep. Every observing nurse knows that she can often relieve colic in infants by rubbing the abdomen and stomach, thus causing the gas to move off.

In fever cases, where, for any reason, water treatment cannot be easily applied, the heated surface may often be cooled and the temperature lowered by uncovering the patient and giving him a quick, gentle, to-and-fro, or centripetal rub in the cool air. The writer has often quieted a nervous fever patient in this way, and has had the satisfaction of seeing the skin become moist, the temperature fall a degree or more, and the patient drop off to sleep.

In cases of soreness and heat from overfullness of the breast during lactation, gentle stroking toward the nipple will bring the milk from the glands into the larger milk ducts just under the nipple, from which it can be easily pressed out. This is a much better method than using the breast pump.

Always avoid harsh, heavy rubbing, especially over sensitive organs. Briskness and evenness of motion will warm a surface quicker than slow, heavy rubbing. When rubbing toward the center of the body, the stroke should be steady and firm. A rub after any treatment should be kept up until all damp, chilly feelings disappear. The warming, stimulating effects of surface friction may be increased by using a flesh brush or a Turkish or crash towel.

As every person always has the means for applying this treatment, and every one can keep in practice by treating himself, there is no valid reason why any one should be unable to relieve pain and discomfort, to soothe the nervous, or to reduce pain and swelling in a sprained ankle by this simple treatment. A course of instruction in massage is very desirable, but do not think that because you are not an expert in this line you cannot give any treatment. By carefully following the above directions and using common sense in their application, a person of ordinary intelligence can give these treatments very successfully.

CAUSES OF MANY COMMON AILMENTS IN INFANCY AND CHILDHOOD.

THE causes of disease can usually be arranged in two classes, the exciting and the predisposing. The exciting causes of most acute diseases are minute vegetable organisms which find a lodgment in the tissues of the body, and there grow and multiply, dissolving the tissues and living on the nutrition thus obtained. In this process, poisonous substances known as ptomaines are formed, and being taken into the circulation by the absorbents, pass into the blood and poison the whole system, causing chills and fever, as well as the constitutional symptoms of all acute diseases.

The living tissues when in health are provided with structures which resist and destroy these disease-producing germs, and the surface of the skin and all the lining membranes, as that of the mouth, nose, throat, etc., have a protective covering of cells, which, when unbroken and healthy, shuts them out of the tissues. The healthy secretions of different glands, as the saliva, the gastric juice, the bile, etc., either destroy the germs outright, or prevent their growth and multiplication. The predisposing cause of disease is anything which cripples the action of these useful defenders of the body.

If a baby is given a wrong start in life by having the digestive organs deranged by improper food at its first meal, and the respiratory mucous surfaces congested by the chill of the first bath, the foundation is laid for disease of the digestive organs in after life, and a nasal catarrh is fastened on the baby, which, creeping slowly onward, will gradually involve the pharynx, or back part of the mouth and upper part of the throat, the ears, and finally the windpipe and bronchial tubes. In cases of chronic catarrh, the nose and throat are always more or less sore, and, being covered with unhealthy discharges, they become fruitful fields for germ culture. The open wounds are so many avenues for germs to enter the tissues of the body, causing swollen glands, abscesses in the ears, erysipelas of the head and face, tonsillitis, quinsy, diphtheria, consumption, and pneumonia. Disease germs are always with us more or less, and we can only limit their power for evil by cutting off their chances of finding an easy entrance into the body, a suitable growing place, and suitable food.

The mucous surfaces of the nose, mouth, and throat can be easily inspected, and they should be kept clean and the surface disinfected. The hard crusts in an infant's nostrils should be removed by

softening them with warm sweet oil or vaseline used on a cotton swab. Both before and after nursing, the baby's mouth should be washed with a saturated solution of boracic acid water, and kept free from congestion. Any ulcers or other broken surfaces should be disinfected at once, by washing with a solution of peroxide of hydrogen, one part in four of water, twice daily until healed. The throat should be gargled or swabbed with the boracic-acid solution or the peroxide, when it is irritated or looks sore and inflamed. A case of enlarged and ulcerated tonsils should be reported to the family physician; and all decaying teeth and sore, spongy gums should be given over to the care of the dentist, that the teeth may be either drawn or filled; not only the permanent, but the first teeth also should be treated.

The first processes of digestion take place in the mouth, and the saliva continues to digest starchy foods for half an hour or more after they enter the stomach. If the food enters this organ mingled with catarrhal discharges from the mouth and throat, —as pus, blood, and other foul matter, instead of a healthy digestive fluid,— we can easily conceive how the digestion must be disturbed, and how many kinds of disease germs may be introduced into the stomach. To keep the mouth, throat, and nose clean, and their structures and secretions in a healthy condition, should be the aim of every nurse, mother, or any one having the care of children. And this needed protection from disease-producing organisms can be secured only by intelligent vigilance and watchfulness.

Years ago, patients undergoing surgical operations and women during confinement died by the hundreds in all the hospitals of the great cities in this country and Europe. To-day these fatal results are practically unknown. These cases are under the charge of trained surgeons and nurses. But the matter of personal hygiene must be just as strictly studied and its principles applied in caring for young children, if we are ever to reduce the mortality and sickness resulting from lack of cleanliness and care during infancy and childhood.

THE long, heavy skirts so often worn by young infants, impede and hinder the action of the legs and feet, and cause deformities and an ungraceful habit of walking in after life.

VARIETY FOR THE PATIENT.— To any but an old nurse or an old patient, the degree would be quite inconceivable to which the nerves of the sick suffer from seeing the same walls, the same ceiling, the same surroundings, during a long confinement in one or two rooms.

The superior cheerfulness of persons suffering severe paroxysms of pain over that of persons suffering from nervous debility has often been remarked upon, and attributed to the enjoyment of the former of their intervals of respite. I incline to think that the majority of cheerful cases is to be found among those patients who are not confined to one room, whatever their suffering, and that the majority of depressed cases will be seen among those subjected to a long monotony of objects about them. The nervous frame really suffers as much from this as the digestive organs from long monotony of diet, as, for example, the soldier from his twenty-one years' "boiled beef."

The effect in sickness of beautiful objects, of a variety of objects, and especially of brilliancy of color, is hardly at all appreciated. Such cravings are usually called the "fancies" of patients. And often doubtless patients have "fancies," as, for example when they desire two contradictions. But much more often their (so-called) "fancies" are the most valuable indications of what is necessary for their recovery. And it would be well if nurses would watch these (so-called) "fancies" closely.

I have seen, in fevers (and felt, when I was a fever patient myself), the most acute suffering produced from the patient not being able to see out of the window, and the knots in the wood being the only view. I shall never forget the rapture of fever patients over a bunch of bright-colored flowers. I remember (in my own case) a nosegay of wild flowers being sent me, and from that moment recovery becoming more rapid.

People say the effect is only on the mind. It is no such thing. The effect is on the body, too. Little as we know about the way in which we are affected by form, by color, and light, we do know that they have an actual physical effect. Variety of form and brilliancy of color in the objects presented to patients are actual means of recovery.

But it must be slow variety, that is, if you show a patient ten or twelve engravings successively, ten to one that he does not become cold and faint, or feverish, or even sick; but hang one up opposite him, one on each successive day, or week, or month, and he will revel in the variety.— "*Notes on Nursing*," *by Florence Nightingale.*

GOOD HEALTH
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BATTLE CREEK, MICHIGAN.

THE CLIMATE OF MEXICO, IN RELATION TO HEALTH.

THE value of climate as a curative agent was known to the physicians of ancient times. Hippocrates made a careful study of climate, and his observations upon the subject of airs and places indicate that he was both an acute observer and a wise interpreter of facts. The careful studies of climatic conditions which have been made in modern times by the aid of instruments of scientific precision, and the careful clinical study of the effects of climate upon invalids of various classes, especially upon patients suffering from pulmonary disease, by well-trained physicians, has greatly increased our knowledge of the value of climate and of its proper application in the treatment of disease. No point is at the present time better settled in relation to this matter, than that the climate of elevated regions is superior to all others for persons suffering from certain grave pulmonary disorders, particularly tuberculosis, or consumption.

For years it has been the custom of the writer to say to consumptive patients consulting him for treatment, "Go a mile up in the air, if you wish to find health." An elevation of from three thousand to seven thousand feet seems to be not only beneficial for these cases, but for many patients an absolute necessity. Most invalids find an altitude of about one mile, or a little more than five thousand feet, most suitable. The writer has the satisfaction of knowing that a considerable number of persons are to-day living and enjoying good health, who would long ago have been in their graves but for the timely advice, "Go a mile up in the air, and live there." A large number of these patients have been sent to Colorado; some have gone to Arizona and New Mexico. The entire Rocky Mountain region, extending from British Columbia far down into South America, may be regarded as a great sanitarium, especially for consumptives, and also for many other classes of invalids. The great objection to the Rocky Mountain region in this country is the severity of the winters. If the patient has sufficient vitality and vigor to endure the changes of climate to which he is subject in Colorado and other northern latitudes, the cold may be considered as a tonic or an invigorant, and is, perhaps, an aid to recovery; but invalids whose constitutions have been greatly weakened by disease, and who are especially susceptible to cold, find more southern latitudes decidedly preferable.

Our friend, Mr. D. T. Jones, the superintendent of the Medical Mission and Sanitarium at Guadalajara, Mexico, has had an extended personal experience in the Rocky Mountain region all the way from British Columbia to the tropics, and at our request has written for presentation to the readers of GOOD HEALTH, the following account of the climate of Mexico, or of that part of it in which he is located, which is generally recognized as being one of the most genial and salubrious in the known world:—

"Mexico is situated between the fifteenth and thirty-second parallels of north latitude and the eighty-seventh and one hundred and sixteenth degrees of west longitude. The tropic of Cancer passes through the center, dividing the country into two very nearly equal parts, one half being in the torrid and the other half in the north temperate zone. The city of Mexico, the capital of the Republic, is situated five degrees south of the tropic. The most productive part of the country lies in the torrid zone. But there are other considerations than the geographical location which must be taken into account in forming a correct opinion of the climate of Mexico.

"It is a well-known fact that elevation, ocean cur-

rents, etc., are powerful factors in determining the temperature of any given locality, often exerting as marked influence as does the distance of the given location from the equator. For example: France has the same latitude as Northern Minnesota, but the climate is so tempered by the Gulf Stream that it is about the same as Georgia and Northern Florida. The frozen regions of Thibet, which are almost inaccessible to Americans and Europeans on account of the cold, are only a few degrees north of the tropic, being eight degrees nearer the equator than the most southern point of Italy. This difference in climate is caused by the great elevation of Thibet. In Mexico, latitude and elevation combine to produce climatic conditions which are rarely found elsewhere.

"The whole interior of Mexico is a plateau, or table-land, having a mean elevation of six thousand feet. In the narrow strips of low land along the coasts it is very hot. There tropical fruits of all kinds are produced in abundance. The climate in these districts is generally unhealthful, being conducive to the different fevers usually found in the tropics, and, in some places, to scourges of cholera and yellow fever. But this strip of low land is narrow, and at a distance of from ten to thirty miles from the coast an elevation of from two thousand to three thousand feet is reached. At this elevation the climate is temperate and much more healthful, and the products are similar to those of Florida.

"A little farther back from the coast the table-land is reached; this is called by the natives '*terra fria*' (cold land), and when compared with the '*terra calliente*' (hot land) along the coasts, it may with some degree of reason be called cold, although in reality it is temperate and very salubrious all the year round. On the table-lands, wheat, corn, barley, and many kinds of vegetables and fruits are produced; and in the *barrancas* (deep, narrow valleys along many of the water courses), which are often from 2000 to 3000 feet below the level of the country, oranges, bananas, mangoes, aguacotes, and other semi-tropical fruits are grown, as well as coffee, nuts, etc. The table-land is entirely free from the diseases which are so prevalent and so much dreaded along the coasts.

"In the months of November and December, 1893, the writer visited fifteen of the principal cities and towns on the central plateau of Mexico, from Chihuahua on the north to Tehuacan — a few miles north of Oaxaca — on the south, in search of the most favorable location for health, especially for pulmonary troubles. The places visited ranged from four thousand to eight thousand six hundred and fifty-three feet in elevation, the latter being the elevation of Toluca, a city of twenty-five thousand inhabitants, situated forty-five miles west of the city of Mexico, and with one exception the most elevated city in the Republic. Notwithstanding its great elevation, Toluca is surrounded by a large, beautiful, and very fertile valley; but the atmosphere is chilly and there is some snow in winter. After carefully considering the advantages of the different places visited, Guadalajara, the capital of the State of Jalisco, was selected as presenting more favorable conditions, both natural and artificial, than any of the other places visited. The remainder of this article will be devoted to a more particular description of the climate of Guadalajara and vicinity.

"This city is situated near where the twenty-first degree of north latitude crosses the one hundred and third degree of west longitude; it has an elevation of five thousand one hundred and seventy feet, and a population of eighty thousand. It has but one rival, Puebla, in contending for the honor of being the second city in size and commercial importance in the Republic of Mexico; while its sanitary conditions are said to be the best of any city in the country.

"The temperature is very equable. The official reports of the State observatory for the year 1893 show that the highest point reached by the mercury in that year was 89° and the lowest 42° Fahrenheit; and the reports of the same for the first ten months of 1894 show the highest temperature to have been 92° and the lowest 44° Fahrenheit. May is the warmest month, and December the coolest.

"The rainy season usually begins the last week in May and closes the first week in September. The official reports of the weather bureau for 1893 show that there was no rain at all in the months of November, January, February, March, and April, only one light shower in December, and but little in May and October; while in July, which is the wettest month, there was a rainfall of 273.9 m.m. The humidity of the atmosphere the same year, ranged from forty-four in February to seventy-four in July. From the middle of October to the middle of May the sun is seldom obscured by clouds; and even in the rainy season the sun shines the larger part of the day, the rains usually falling in the afternoon or night. The rains come in showers, when it will rain very hard for an hour or an hour and a half, and then the clouds will pass off and leave the sky clear. There is no damp, foggy weather such as is often experienced in the lake regions and in the Mississippi Valley of the United States. The rainy season is considered

by many the most delightful season of the year.

"There is very little wind in Guadalajara, as compared with the eastern slope of the Rocky Mountains in the United States. There are very few days in winter when it is unpleasant for invalids to be in the open air for five or six hours in the middle of the day; and there are few, if any, days in summer when one suffers any inconvenience from the heat. There are no sudden changes of temperature, which are usually so trying to invalids and persons of weak constitution.

"The elevation of Guadalajara is about the same as that of Denver and Boulder, Colorado, and other conditions combine to make it, in the estimation of the writer, one of the most favorable locations for pulmonary diseases to be found anywhere. This conclusion is based on practical experience.

"In January, 1893, I had a severe hemorrhage of the lungs, followed by a rise of temperature ranging from 103° to 105°; in March, under the advice of Dr. J. H. Kellogg, I went to Colorado, being compelled to keep my berth in the sleeper nearly all the way, and after arriving in Boulder kept my bed for about two weeks, all the time following strictly a line of treatment prescribed by Dr. Kellogg. I presently began to improve, and continued to improve till October, when, under the advice of the Doctor, I left Colorado and came to Mexico. I have now been one year in Mexico, ten months of which have been spent in Guadalajara. Every trace of the lung trouble has disappeared, and my general health is better than it has been before for five or six years."

As the result of observations made during two rather brief visits to Mexico, and from the statements made by physicians whom we had the pleasure of seeing at the meeting of the American Public Health Association, held in the city of Mexico in 1892, we are satisfied that the climate of Guadalajara is to a remarkable degree adapted to the needs of nearly all classes of chronic invalids, except those suffering from grave chronic disease of the heart, who might find the altitude somewhat too great. For a person suffering from consumption, there is certainly no climate which approaches it, except that of Colorado, and for those who need protection from cold, Mexico offers remarkable advantages.

Tuberculous Milk.— Duclaux, in the *Annals de l' Institute Pasteur* for November, reviews the subject of tuberculous infection through the medium of milk. He calls attention to the investigations of M. Frijis, of Copenhagen, who, among a lot of thirty cows, the milk from which was regularly sold, found nearly all affected by visible signs of disease. One animal was almost too weak to stand. The milk furnished by this animal was a yellowish, watery secretion, but was almost until the last day of the animal's life, mixed with the common product of the herd and sold for human consumption. The danger of infection through milk is, by this writer, believed to be so great that there is no safety except in avoiding the use of milk which has not been submitted to a temperature sufficient to destroy the tubercle bacilli. It is safer that the milk should be boiled, but a temperature of 160° is said to be sufficient to kill all disease germs.

Observations made by other authorities show that tubercle bacilli are capable of surviving a full month in butter, and for a much longer time in cheese. It is thus apparent that the only perfect safeguard against infection by consumption through the medium of milk, is to be found in the use of sterilized butter and the avoidance of cheese, or, if the latter is used, it must be cooked.

Rest in Heart Affections.— Lauder Brunton, the eminent English therapeutist, recommends absolute rest in cases of advanced mitral disease. Rest enables the circulation to recover its balance, the excessive accumulation of blood in the veins giving place to the proper distribution of the blood between the brain and the arteries; the dropsical effusion and general venous engorgement of the various organs, including the viscera, thus disappear. The change from absolute rest in a horizontal position to the vertical position, with gentle exercise, must be very gradual indeed. Massage and manual Swedish movements are of the greatest value in making the transition, and also in aiding the reëstablishment of the normal circulation. The timely enforcement of rest, in cases of this sort, may save the beginning of the valvular malady of the heart, and thus by judicious management restore the patient to a condition of comparative health and comfort. We have found hot and cold sponging of the surface of the body of great value in the restoration of the normal balance of the circulation.

Dr. Brunton very properly calls attention to the danger of enforcing the rest cure too vigorously in cases of anæmic girls, who, by too prolonged rest, are likely to fall into a state of exhaustion in which the heart will receive greater injury than from gentle exercise.

DRINKING-WATER A SOURCE OF MALARIAL DISEASE.

THE well-known investigations of Laveran and his successors have very clearly established the fact that the real cause of malarial disease is not a miasm, as

FIG. 1.

was formerly supposed and as the name would indicate, but an animal parasite which by some means finds entrance into the blood, where it thrives and multiplies at the expense of the blood corpuscles. The accompanying cuts (Figs. 1 and 2) show some of these parasites in different stages of development.

How and where parasites develop outside of the body, and how they get access to the blood, are questions which have been studied with great interest by physicians in different parts of the world, particularly in malarious portions of Italy and in the vicinity of Rome and in Algeria. Recently interesting studies of the subject have been made in this country, particularly by Dr. Richard H. Lewis, secretary of the North Carolina Board of Health. Dr. Lewis has, by correspondence with a large number of physicians and laymen, obtained indubitable evidence, in North Carolina at least, that malarial disease is connected with the use of bad drinking-water, particularly surface water. It is the almost universal testimony of Dr. Lewis's correspondents that while using water from shallow wells, they suffered much from malarial disease, but on exchanging this for cistern water or water from good springs or deep driven wells, they have enjoyed almost absolute immunity from malarial fever.

Dr. Lewis has collected a large amount of testimony in support of his theory that malaria is usually contracted through the use of drinking-water. We quote some extracts from his interesting paper in the December number of the *Sanitarian*. The following is from Laveran: —

"1. There have been observed cases in which, in the same locality, persons living in identical conditions, but using drinking-water from different sources, the one group being attacked in a large proportion, while the other group of persons are scarcely affected at all.

"2. In certain otherwise unhealthy localities the paludal fevers have been seen to disappear by supplying pure drinking-water instead of the previously used stagnant waters.

"3. In localities otherwise healthy one can contract intermittent fever by drinking water from an

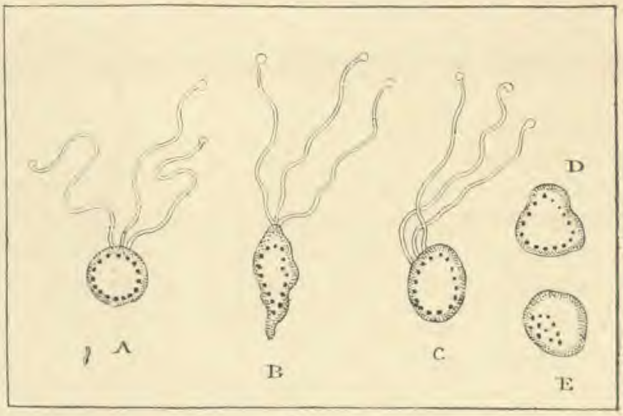


FIG. 2.

unhealthy locality. The persons most affected are those who drink the water most freely.

"4. Travelers in malarial countries have found

that on boiling their drinking-water they escape the disease in a large proportion of cases."

The following instances are cited as illustrations of the contraction of disease through the use of drinking-water: —

"In 1884 a party of workmen sent to repair a bridge over the Chuka, drank of this stream, and out of thirty only three escaped fever, while several of them died."

"One hundred and twenty soldiers embarked in the 'Argo,' for transport from Bona, in Algiers, to Marseilles. During the voyage one hundred and eleven of them, thirteen of whom died, suffered from different forms of malarial fever. Two other vessels, carrying between them six hundred and eighty soldiers, also from Bona, and arriving at Marseilles the same day as the 'Argo,' had no case of illness at all, and the only ascertainable difference of circumstance between the troops in these ships and those in the 'Argo' was the difference of drinking-water. The latter were exceptionally supplied with water, which was said to have an unpleasant smell and taste, from a marsh near Bona; those on the other ships were supplied with good water. Finally the nine soldiers on the 'Argo' who escaped were said to have purchased wholesome water from the crew of that vessel."

"In January, 1866, a company of forty healthy marines were sent to the navy yard of Pensacola, Fla. During the first year, frequent attacks of malaria began to show themselves among these men, which increased in number during the second year, and during the third year the disease became so prevalent that before August twenty-five of the party were in the hospital at one time. During this year they were so broken down that they were all sent to Norfolk, Va., where they all recovered. These marines drank the water from a driven well at the yard. The officers and their families drank only from a cistern, and no case of malaria appeared among them, proving that the wells were probably the cause of the sickness among the marines."

Many other similar accounts have appeared in medical literature within the last few years. It is entirely possible that malaria may sometimes be communicated through the air. The spores of malarial parasites, as well as those of microbes and particles of dust, may be carried by fogs, and may be thus received into the body. But the evidence is rapidly accumulating that the most common source of malarial disease is to be found in the use of contaminated drinking-water.

Raw Oysters and Typhoid Fever. — Some years ago the health officer of Liverpool traced an extensive epidemic of typhoid fever, which was then prevailing in that city, to the use of oysters. It was also affirmed that a case of disease which occurred in the Royal family of England originated in the use of raw oysters. Last year a number of cases of typhoid fever were reported in the city of Berlin, in which the use of oysters was believed to be the cause of the disease.

Recently an epidemic occurred in the State of Ohio, which the health officer attributed to the use of oysters; and, according to the *Medical Record*, the matter has recently been brought to public notice again in a most striking manner, "through the development of an epidemic of typhoid fever among the students at Wesleyan University, Middletown, Conn. Thirty cases occurred almost together, with one death. All were among college students who had attended certain society suppers where raw oysters were served. Among the students who attended other suppers where the oysters were cooked, no typhoid developed. The oysters had been placed by the oysterman in the tide-water shallows of a river near New Haven. Typhoid fever had been present in the family of the oyster grower. His house was near the river, and his sewage drained into it."

The *Medical Record* has not considered the case against the oyster quite made out, as yet, and manifests a decided hesitancy to disturb the equanimity of the millions of consumers of the bivalve and the thousands who are engaged in the cultivation and marketing of these creatures. That the oyster should be a conveyor of typhoid fever is certainly not a remarkable circumstance, since its scavenger habits and its fondness for sewage are well-known characteristics. The scavenger was intended by nature to cooperate with other lowly creatures in consuming the slime and ooze of the ocean, thus keeping its waters from becoming putrescent and pestilential. Man has certainly greatly overstepped the bounds of prudence as well as propriety in making himself the chief of all scavengers by adding to his dietary the oyster along with the hog and other scavenger creatures.

ANSWERS TO CORRESPONDENTS.

HICCOUGH — TOASTED BREAD.— D. K., N. Y., asks: "1. What is the cause of hiccough? 2. What will relieve or prevent it? 3. Is toasted bread hard to digest? 4. Would you advise its use by persons of moderate digestive power?"

Ans.— 1. Irritation of the abdominal sympathetic nerve, usually originating in the stomach.

2. A number of remedies are useful as a means of relieving hiccough; the following are a few of the best: (1) Holding the breath for half a minute after inflating the lungs to the fullest extent. (2) Swallow ten drops of chloroform well diluted in half a glass of milk or gum water. (3) Drink a small bottle of Seltzer or Apollinaris water or any other water charged with CO_2, or carbon dioxide. (4) Applications of faradic electricity over the region of the stomach and beneath the lower ribs.

3. The digestibility of bread is increased by thorough toasting.

4. Yes.

REMOVAL OF SUPERFLUOUS HAIR—BLEACHING.—V. S., Penn., asks: "1. Please give directions for the removal of superfluous hair. 2. Also please give directions for bleaching superfluous hair."

Ans.—1. The most effective method of removing superfluous hair, permanently, is by means of electricity. A current of galvanic electricity is applied to the root of the hair by passing a fine needle into the hair follicle. The following formula is also recommended as useful for removing superfluous hair, but it must be expected that the hair will grow again when removed by chemical means, although it is stated that by repeated applications the growth of the hair will after a time cease: —

The best method for the temporary removal of superfluous hair is by the use of barium sulphate, which may be obtained in the form of powder. It is used by mixing two parts of the powder to one part each of common starch and oxide of zinc. Sufficient water is added to form a soft paste. This is spread upon the surface from which the hair is to be removed, and scraped off after ten minutes, when the skin will be found to be smooth.

2. The method is as follows: Wash the parts thoroughly first with a little soap, then with a saturated solution of borax, and lastly rub on with a camel's hair brush or a small bit of cotton, a concentrated solution of peroxide of hydrogen (Marchand's), which can be bought at any drug-store. An application should be made several times a day, until the hair is thoroughly bleached, and should be renewed from time to time, as may be necessary.

COUGH — CONSTIPATION — FREQUENT MICTURITION.—This correspondent, B. E. T., Kansas, has been a subscriber to GOOD HEALTH for nearly thirty years. He asks advice in regard to his health. He is sixty-eight years old. He has a bad cough, and expectorates much thick, tenacious mucus; is badly constipated; is troubled with a constant irritation of the bladder, causing frequent micturition; has a poor appetite; has led a sedentary life, but has always been a vegetarian and has taken no drugs. Would be grateful for any suggestions as to treatment.

Ans.—It is a mistake to suppose that vegetarianism and abstinence from the use of drugs are virtues of sufficient potency to ensure perfect health. Nature requires active as well as negative virtues. The habitual reception into the system of poisons through the use of flesh food and the habitual use of drugs is pretty certain to cause, sooner or later, serious morbid conditions. But it must be remembered that poisons are generated within the body, and that exercise is one of the means which nature has ordained for the elimination of these poisons. It is possible to trace all the disorders mentioned to sedentary habits. It is hardly possible to make a prescription that this gentleman could carry out at home with any prospect of relief. Chronic invalids need training, not simply treatment. We should have to advise our afflicted friend to personally consult a physician. If tuberculosis exists, it is possible that he should make a change of climate. Bladder irritation may require local treatment. It may be an enlarged prostate gland which requires attention. Free water-drinking and an out-of-door life, with as much activity as is possible under the circumstances, are about the only suggestions we can properly make without an opportunity for a personal examination of the case.

YELLOW STAINS OR BLOTCHES ON THE NECK.— L. E. S., Oklahoma, inquires: "1. What can be the cause of yellow stains or blotches on the neck of a perfectly healthy woman? 2. I use little meat, and take a good deal of exercise, drink a cup of coffee in the morning, and use no tea or other stimulants. Do you think the blotches are due to the coffee-drinking?"

Ans.—1. Coloration of the skin is due to increased production of pigment; it is an evidence of disturbed nutrition. Sometimes a disordered state of the liver exists in connection with coloration of the skin of the sort described, but that is not necessarily the cause. The difficulty is sometimes of a nervous origin.

2. It is quite probable that coffee-drinking may be to some extent responsible for the pigmentation of the skin described. It has long been known that the use of coffee produces a "muddy" complexion.

WOODEN OR IRON PUMPS.— A. B. G., Iowa, wishes advice as to which is preferable, a pump of wood or of iron for a house well. As the wooden tubing holds so much black filth and slime, he thinks it might be best to use an iron pump. Is this a correct conclusion?

Ans.— By all means use the iron pump. A little rust in water is comparatively harmless, although inconvenient.

SICK HEADACHE IN A CHILD.— N. G., Mich., inquires: "What would cause sick headache in a boy eight years old? He has regular attacks, as often as once in two weeks, but seems well in other respects."

Ans.— A dilated stomach and an improper diet.

RELIEF DEPARTMENT.

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

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

The purposes of this department, as regards these two classes, are are 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.

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

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

☞He wishes especially to state that those who apply for children will be expected to accompany their applications by satisfactory letters of introduction or recommendations.]

No. 241.— A half-orphan baby boy living in Michigan needs the care of some kind-hearted mother. He is but four months old, with blue eyes and dark hair. He will need kind attention, and the love which only a true mother can bestow. We doubt not that the friends who will take this little one into their home will be fully rewarded for the time spent in caring for him.

A LITTLE German boy (No 244), nine years old, is in need of a home. He has blue eyes and light brown hair, and is now living in Florida with his mother, who is unable to care for him. He is said to be kind-hearted, and we doubt not, if he is surrounded by good influences and receives proper instruction, that he will be an honor to those who will thus direct his steps in the right path.

LITTLE Earl (No. 246), a Michigan baby seven months old, is in need of some kind motherly body to care for him, who will give him the care and attention that it is very necessary he should have at such a tender age. He is a pleasant and good-natured child, with blue eyes and light hair. Here is another opportunity for some one to train a child for usefulness.

No. 250 is a little girl nine years old, living in Kansas. She is at present with her mother, who has two younger children to care for, and owing to her financial condition, wishes to place the child in some good family where she will receive Christian care and training. She has gray eyes, dark, curly hair, and is of an affectionate disposition. Will some one offer assistance in this case?

TWO ORPHANS (NOS. 251 AND 252).— We have just received word respecting a girl and boy aged respectively eleven and six years. They are now living in Indian Territory with kind relatives, who have cared for them since their parents' death. The relatives are no longer able to care for the children, and request that they both be placed in the same home, where they will receive Christian training. The children have brown eyes and light hair, are in good health, and are now living in the country. The children know scarcely anything of the care or love of an own mother and father, as they were deprived of such care when very young. Is there not a home in the Southern or Western States that will open its door to these children who are in such great need?

WILLIAM (No. 254) is a boy thirteen years old living in Michigan. He has a slight blemish in one eye, impairing the sight; otherwise the boy is in excellent health, and bright and clean. This boy's mother is dead. His father is in poor health, so he wishes to place the boy in a private family.

STELLA (No. 255) is a little girl eight years old, with brown eyes and hair, and her brother (No. 256) is six years old, having blue eyes and light brown hair. These are just as needy and deserving of a home as are orphans. Their stepfather has deserted them, and their mother, who is failing rapidly with that dread disease, consumption, wishes to see her children placed in good homes. The children have been living in the country, not having had many associates, and have not been neglected. The children are now living with relatives in New York, who can care for them but a short time longer.

Two half-orphan girls (Nos. 257 and 258), eleven and nine years old, need a mother to care for them. Their father is not able to work all of the time, on

account of ill health, hence desires to place his children in private families. The children both have blue eyes and light hair, and are of a loving disposition. They are now living in one of the New England States. Will some kind friends in the East offer them a home?

No. 259, another Michigan boy, nearly two years old, with blue eyes and auburn hair, needs a home. The mother lives in hopes of sometime being able to provide for the child, but at present she wishes to place him in some good family.

No. 260 is a little girl nearly ten years old, with dark brown eyes and hair. She is said to be intelligent, generous, and very playful. She has not had many school privileges, hence there is a grand opportunity for some one to see that she is trained properly and receives the instruction that will be the means of preparing her for a life of usefulness.

We are very much pleased with the kind responses from persons who are so willing to take some of the needy children into their homes. One friend writes: "I believe the blessing of the Lord will follow those who open their hearts and homes to take in the destitute."

The following letter received from friends who have taken one of our boys, gives us an example of the final results of the untiring efforts of loving hearts:—

"Yours received. I have been waiting to report success. I can safely say it now. We have been passing through quite a trial, but the Lord has helped, and to-day S—— is a changed boy. He is a good boy at heart, but just when he needed a mother's watchful care she was snatched from him. He is always ready to acknowledge a wrong and to ask our forgiveness. He had had his own way so long that it was hard for him to give up to others. In fact he had just run wild. We are very hopeful of him. With the help of the Lord we are going to succeed."

Last summer one of our boys living in Michigan went to South Dakota to live with some kind people who had no boys and were willing to give a home to one. His new mother writes: —

"Your letter is at hand, and in reply I will say that H—— is well. He has not been sick a day since he came here, and seems to be perfectly happy. He goes to school every day and is learning well. We like him pretty well. Of course he has his faults, but he is improving and minds well."

We are glad to learn that H—— is improving. This little boy had not enjoyed many of the advantages most children have, but he was a bright boy, and we are sure the efforts bestowed upon him will in time bring forth good results.

Persons making applications for children advertised in this department are requested to send with their applications the names and addresses of two or more persons as reference. If possible, these should be known, either personally or by reputation, to some member of the Board of Trustees.

VISITING DAYS AT THE HASKELL HOME.

Persons intending to visit the Haskell Home will please note that the visiting days are Sunday, 4 to 6 P. M., and Wednesday, 2 to 6 P. M. It is necessary to make this announcement, as so large a number of visitors have been calling at the Home that the very interest of the friends, which we have no desire to discourage, has been something of a hindrance to the workers. J. H. Kellogg.

CLOTHING FOR THE POOR.

The call for clothing of all kinds and the numerous offers to supply assistance of this sort, have led us to organize a Clothing 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 at 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 grimy by long use in some dirty occupation, should find their way to the rag bag instead of the missionary box.

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

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

5. Clothing intended for the Chicago Medical Mission should be sent to 40 Custom House Place, Chicago, Ill.

LITERARY NOTICES.

THE NEW STANDARD DICTIONARY OF THE ENGLISH LANGUAGE.— Published by Funk & Wagnalls Company, 30 Lafayette Place, New York.

The following is the opinion of one of GOOD HEALTH Publishing Company's editors and proofreaders, concerning the Standard Dictionary:—

"It was with a thrill of pleasure that I found myself possessed of a new Standard Dictionary, full Morocco binding, with all the wonderful contents between those two covers, about which I had read so much. Like any other enthusiastic proofreader, I began looking up those disputed points which are so provokingly prevalent in our work, and what was my delight to find that the good editors had not left us in the dark, as had their predecessors, to grope our way along between the disjointed parts of what should have been a compound word, or leaping over hyphens that should have been left out of the path altogether; but in this spendid new Standard they have actually showed us the best way out of all this labyrinth of inconsistency from which we have been vainly seeking egress, lo, these many years.

"But this is only a tithe of the good things served up between the lids of that famous book. Time would fail me to speak of all its merits. One colored plate was of special interest to me,— the plate of precious stones, colored so exactly like the original handiwork of God that one might know the real stone by comparison.

"The book has been advertised as a special aid to proofreaders, and whoever of that craft becomes possessed of one, in office or home, will surely feel that he has a treasure."

"CHILD'S CHRIST-TALES."— Kindergarten Literature Co., Women's Temple, Chicago, Ill.

This interesting juvenile book has now reached its third edition. It is embellished with twenty-five illustrations from the great masterpieces. Everywhere parents are looking for Bible stories, and this is one of the best. The volume is attractively bound, and retails for one dollar. The publishers will send with the book a package of choice leaflets for distribution, if requested. Send for regular catalogue with dealers' rates.

SCRIBNER'S MAGAZINE for January begins the XVII volume, and gives a foretaste of a number of the important projects which are to characterize the coming year. The frontispiece of the number is an engraving of a painting by W. M. Chase, and is the first of a series of frontispieces to represent the best work by American wood-engravers. The magazine opens with the first of a series of papers by Robert Grant, on "The Art of Living." Noah Brooks begins a group of three papers on American Party Politics. George Meredith has a novel, "The Amazing Marriage." Notable among the single articles is Mrs. Maud Ballington Booth's account of "Salvation Army Work in the Slums," a most pathetic and dignified narrative of a work which has won the admiration of all philanthropic people. Other articles are a narrative poem by A. Conan Doyle; an essay on "Good Taste," by Augustine Birrell; "Reminiscences of Dr. Holmes as Professor of Anatomy," by his successor in the Harvard Medical School, Dr. Thomas Dwight; "A Study of the Mental Characteristics of the Japanese," by Professor George Trumbull; and a short account of an important art discovery, by Edith Wharton, entitled "A Tuscan Shrine." There are also two short stories, and the usual department, "The Point of View," which is always in itself valuable.

"THE POLITICAL ECONOMY OF NATURAL LAW."— By Henry Wood, M. D. Lee & Shephard, Boston.

The purpose of this work is to outline a political economy which is practical and natural rather than theoretical and artificial, being a study of inherent laws and principles. In 1887 this author issued a volume entitled, "Natural Law in the Business World," which was well received and passed through several editions. The present book is not a revised edition, but substantially a new book, of double the size.

The titles of a few of the twenty-four chapters will give some idea of its contents. Among them are: The Law of Cooperation, The Law of Competition, Combinations of Capital, Combinations of Labor, Profit Sharing, Socialism, Economic Legislation, Can Capital and Labor be Harmonized? The Distribution of Wealth, The Centralization of Business, Booms and Panics, Money and Coinage, Tariffs and Protection, Industrial Education, etc.

Mr. Wood has the faculty of rendering this usually dry subject not only instructive, but positively entertaining. He has given many years of careful study to the practical phases of social economics, in their relation to natural law, and each chapter is thoroughly original and telling in its special department.

PUBLISHERS' DEPARTMENT.

GOOD HEALTH FOR 1895.—Being determined to make GOOD HEALTH for 1895 superior to any of its predecessors, the publishers have arranged for several additions to its corps of contributors, and promise their readers for this year a larger store of valuable information communicated in an interesting way, than in any previous year. If the reader has not renewed his subscription, now is the time to do so.

* *
*

WE call the attention of our readers to the first of a series of valuable articles by Mrs. Stearns, which appears in this number. One of the most serious faults in the educational methods which have been in vogue for the last thousand years or more, and which still dominate in the educational world, is the disproportionate education of the head and the neglect of the hands; in other words, too much education of the brain in proportion to the amount of attention given to manual training. Mrs. Stearns will present in a series of articles, some of the results of her extensive experience in the teaching of the various forms of sloyd, and will make the matter so simple that any intelligent mother who herself possesses a reasonable degree of manual dexterity, will be able to establish a sloyd school in her own home. Every progressive mother ought to have GOOD HEALTH to read in 1895, in order to receive the benefits which may be derived from the information contained in this interesting series of articles, and others of equal interest which the journal will contain.

* *
*

A SPECIAL feature of the journal during 1895, which will make it a desideratum for every woman interested in healthful dress for women, will be a series of articles describing new styles and designs of healthful dress for women and children. Each number will contain at least one new design. These designs will be furnished by the Dress Department of the Battle Creek Sanitarium, which employs not only most experienced dressmakers, but artists, and a special designer who was for several years employed by Butterick & Co., and furnished to that well-known company a large number of very popular designs.

* *
*

A FEW years ago the editor of an Eastern agricultural journal, in writing home to his paper an account of a winter trip through Michigan, described the State as having much more sunshine to the acre than the State of New York, the reason for which he was not quite able to understand, although the fact was apparent. We feel sure that if the editor had spent the last few weeks in Michigan, he would have been still more thoroughly convinced that Michigan, although having a longer water-line than almost

any other State in the Union, and which is everywhere known as "The Beautiful Peninsula," as its Indian name signifies, is, notwithstanding, blessed with a great amount of sunny weather. Bicycles and cycling parties on Christmas, with lawns almost as green as in summer (greener in some instances, for the summer was somewhat dry) are no more unusual than in some portions of the country south of Mason and Dixon's line. Where, outside of Michigan, in the Northern States, will one meet with such scenes on the 25th of December? Michigan is certainly a wonderfully favored State. The great bodies of water which surround it on the east and west and north absorb so much heat during the summer season that the biting blizzards which come down from the northwest, and occasionally from the northeast, are shorn of their fierceness long before they reach the shores of the southern peninsula of the State, the Great Lakes serving at once as a comforter and a footwarmer for the animal and vegetable life which is so fortu nate as to be situated within their protecting embrace. Likewise, in the summer time, the waters of the Great Lakes which have been cold during the winter months, absorb a large amount of the surplus heat from the hot winds which sweep over them, thus serving the State as a refrigerator. Michigan is naturally one of the most delightful, salubrious, and pleasant localities in the world.

***

DR. PLACE reports that the Sanitarium recently established at Boulder, Colorado, is rapidly filling up with patients, and that the prospects for a very successful future are most encouraging. An institution of this sort has been very much needed in Colorado. Heretofore there has not been a place in the Rocky Mountain region where an invalid could have, in addition to the excellent climatic advantages, the benefit of all the resources of rational medicine in his battle for health. We are constantly recommending patients to go to Colorado, and know of no place where they can receive so excellent care as at the Colorado Sanitarium at Boulder.

***

DR. LOPER reports that the Sanitarium at College View, Neb., will be open to receive patients January 1. Very convenient and completely equipped bathrooms have been arranged in connection with this new institution, and although it is not a large establishment, patients will be able to receive here thorough and excellent treatment at the hands of experienced and well-trained nurses and attendants. The institution is evidently much needed, and it is believed that its advantages will be appreciated by the people of Nebraska and adjacent States.

***

PEROXIDE OF HYDROGEN.—H. Endemann, Ph. D., Chemist, formerly connected with the Health Department of New York City, has recently made an investigation of the various brands of Peroxide of Hydrogen and similar compounds which are manufactured in this country. The result of this investigation showed that the Hydrozone manufactured by the Drevet Manufacturing Co., of 28 Prince St., New York City, is superior to all other preparations of this kind, containing 27.3 volumes of available oxygen,—more than twice the amount contained in any other preparation except Peroxide of Hydrogen made by the same house, which contains a little more than half the quantity of available oxygen, representing active properties. The investigation also showed that Hydrozone is prepared in such a manner as to have excellent keeping qualities, whereas some of the preparations tested were so inferior in this respect that they had evidently lost whatever value they had previously possessed. Hydrozone is a most admirable, and one may even say perfect, disinfectant agent, since it is at one and the same time an active destroyer of germs of all sorts, and the ptomaines and other poisonous products of germ action, while wholly non-toxic to human beings.

***

THE Michigan Agricultural College, has taken another step forward by inaugurating a college extension course of reading. This plan aims to furnish a systematic course of reading on subjects relating directly to agricultural and kindred subjects. While the course as planned recommends a progressive line of work, discussing first the underlying principles of agriculture, and later taking up special departments, yet it is largely elective, and so flexible that a person interested in any branch of farming may select books pertaining only to his chosen line. For example, the class devoted to live stock aims to give a general knowledge of the feeding, breeding, and handling of horses, cattle, sheep, and swine, and includes also a book on dairying. If, for any reason, the reader does not desire to take all the work in the class devoted to live stock, and is especially interested in dairying, he may select only that portion relating to dairy work, and receive proper credit.

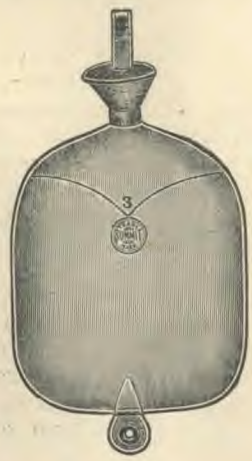
***

"BODY RESTED, MIND AT EASE."—That is what it is when traveling on the fast trains of the Chicago, Milwaukee & St Paul Railway; besides there is no chance to "kick," for the accommodations are up to date, the trains keep moving right along, and get there on time. These lines thoroughly cover the territory between Chicago, La Crosse, St. Paul, Minneapolis, Aberdeen, Mitchell, Sioux Falls, Sioux City, Yankton, Council Bluffs, Omaha, and Northern Michigan. All the principal cities and towns in that territory are reached by the "St. Paul" lines, connecting at St. Paul, Council Bluffs, and Omaha with all lines for points in the far West. Write to Harry Mercer, Michigan Pass'r Agent, Detroit, Michigan, for one of their new map time tables and a *brochure* giving a description of the Compartment Sleeping cars. Tickets furnished by any coupon ticket agent in the United States and Canada. The finest dining-cars in the world are run on the solid vestibuled, electric-lighted, and steam-heated trains of the Chicago, Milwaukee & St. Paul Railway.

***

WINTER TOURS VIA THE MICHIGAN CENTRAL.—November 1, the Michigan Central placed on sale round-trip tickets to all the principal winter resorts in Florida, Georgia, South Carolina, Alabama, Louisiana, Mississippi, Texas, and New Mexico. Tickets will be on sale until April 30, 1895, and limited for return until June 1, 1895. For full particulars, rates, etc., call on or write to Geo. J. Sadler, ticket agent, Battle Creek, Mich.

HOT-WATER BAGS.



Style A.
WHITE RUBBER.

As a foot-warmer, or for applications of either moist or dry heat, this bag is invaluable. For moist heat, wring a flannel cloth from hot water, and lay on the bag. It is a durable article, and one not willingly dispensed with after once using.

STYLE B. FLANNEL COVERED.

The same bag covered with flannel or sateen, which to many makes it much more agreeable as a foot-warmer.

Style B.
FLANNEL COVERED.

SPINE BAGS.

RUBBER SPINE BAGS. Very strong and durable; essential in the treatment of some forms of Dyspepsia, Spinal Irritation, and many nervous diseases.

- - - SEND FOR CATALOGUE - - -

SANITARY AND ELECTRICAL SUPPLY CO., Battle Creek, Mich.

CHICAGO & GRAND TRUNK R. R.

Time Table, in Effect Nov. 18, 1894.

GOING EAST. Read Down.					STATIONS.	GOING WEST. Read up.				
10 Mail Ex.	4 L't'd Ex.	6 Atl. Ex.	42 Mixd Tr'n.	2 Pt. H Pass		11 Mail Ex.	1 Day Ex.	3 R'd L't'd	23 B. C. Pass.	5 P'fic Ex.
a m	p m	p m				p m	p m	pm		a m
9.00	3.30	8 15	a m	.....	.....D.Chicago A.....	6.45	1.50	9.10	.....	7.50
11.25	5.05	10.30	6.00	.....	.....Valparaiso.....	5.05	11.35	7.10	.....	5.45
p m										
1.05	6.30	12.00	10.05	.....	.....South Bend.....	3.10	10.15	5.44	....	4.10
1 46	7.12	1 .45	12.40	.....	.....Cassopolis	2.15	9.40	5.13	.....	3.28
2.33	.....	†1 33	3.42	.....	.....Schoolcraft.....	1.20	.....	.....	.....	.....
2.44	7 .5	1 48	4 :0	a m	.....Vicksburg.....	1.10	8.52	.....	p m	2.37
3.30	8 36	2.40	6.20	7.00	.....Battle Creek.....	12.15	8.15	3.55	9.35	1.50
4.33	9.26	3.25	.....	7.47	.....Charlotte.....	11.14	7.23	3.07	8 40	12.53
5.1	9.55	4.00	.....	8.20	.....Lansing.....	10 0	6.55	2.40	8.00	12.20
6.30	10.45	5.03	.....	9.30	.....Durand.....	9.35	6.05	1.55	6.50	11.28
7.30	11 17	5.40	.....	10.05	.....Flint.....	8.35	5.35	1.28	5 47	10.35
8.15	11.50	6.15	.....	10.43	..... Lapeer.....	7.49	5.02	1.00	5.10	10.01
8.42	a m	6.35	.....	11.06	.....Imlay City.....	7.28	.....	.....	4.48	.....
9.50	1.00	7.30	.....	12.05	.....Pt. H'n Tunnel.....	6.50	3.50	11.55	3.50	8.45
	p m					a m	a m	a m	p m	p m
9.25	.....	.....	.....	.....	..... Detroit.....	.....	.....	10.40	4.05	8.45
	a m	p m					p m			p m
.....	8.15	6.25	.....	.....	..... Toronto.....	.....	9.20	.....	.....	1.00
	p m	a m					a m			
.....	8.15	7.25	.....	.....	..... Montreal	.....	9.15	.....	.....	.....
	a m	p m					a m			
.....	9.12	7.15	.....	.....	.....Boston.....	.....	8.30	.....	.....	.....
	a m	p m					p m	a m		p m
.....	7.50	4.25	.....	.....	.....Susp'n Bridge.....	.....	10.15	7.05	.....	2.25
	a m	p m								p m
.....	7.00	5.40	.....	.....	.....Buffalo.....	.....	.....	.....	.....	1.00
	p m	a m					a m	p m		p m
.....	8.58	8 03	.....	.....	.....New York.....	.....	8.15	6.10	.....	8.00
		a m								p m
.....	.....	10.20	.....	.....	.....Boston.....	.....	.....	.....	.....	7.00

Trains No. 1, 3, 4, 6, run daily; Nos. 10, 11, 2, 23, 42, daily except Sunday.

All meals will be served on through trains in Chicago and Grand Trunk dining cars.

Valparaiso Accommodation daily except Sunday.

Way freights leave Nichols eastward 7:15 a. m.; from Battle Creek westward 7:05 a. m.

† Stop only on signal.

A. R. MCINTYRE,
Asst. Supt., Battle Creek.

A. S. PARKER,
Pass. Agent, Battle Creek.

MICHIGAN CENTRAL

"The Niagara Falls Route."

Corrected Nov. 18, 1894.

EAST.	*Night Express.	†Detroit Accom.	†Mail & Express.	*N. Y. & Bos. Spl.	*Eastern Express.		*Atl'ntic Express.
STATIONS.							
Chicago.....	pm 9.30		am 6.50	am 10.30	pm 3.30		pm 11.30
Michigan City.	11.35		8.50	pm 12.17	5.20		am 1.19
Niles.....	am 12.45		10.15	1.15	6.23		2.45
Kalamazoo....	2.15	am 7.20	11.55	2.30	7.49		4.35
Battle Creek...	3.00	8.10	pm 12.50	3.05	8.18		5.22
Jackson.....	4.30	10.00	2.40	4.25	9.35		6.50
Ann Arbor.....	5.40	11.05	3.50	5.15	10.25		7.47
Detroit.....	7.10	pm 12.20	5.30	6.15	11.25		9.20
Buffalo.....				am 12.35	am 6.45		pm 5.30
Rochester.....				3.38	9.55		8.40
Syracuse				5.40	pm 12.15		10.45
New York.....				pm 1.45	8.45		am 7.00
Boston				3.45	11.45		10.50
WEST.	*Night Express.	*NY.Bos. &Chi.Sp.	†Mail & Express.	*N.Shore Limited.	*Weste'n Express.	†Kalam. Accom.	*Pacific Express.
STATIONS.							
Boston		am 10.30		pm 2.00	pm 3.00		pm 7.15
New York.....		pm 1.00		4.30	6.00		9.15
Syracuse		8.30		11.30	am 2.15		am 7.20
Rochester.....		10.37		am 1.20	4.10		9.55
Buffalo.....		11.45		2.20	5.30		pm 3.30
Detroit.....	pm 8.45	am 6.30	am 7.20	8.30	pm 1.10	pm 4.35	11.10
Ann Arbor.....	10.25	7.30	8.43	9.25	2.12	5.57	am 12.15
Jackson.....	11.40	8.35	10.48	10.30	3.15	7.35	1.25
Battle Creek...	am 1.17	9.48	pm 12.15	11.48	4.31	9.13	2.55
Kalamazoo	2.10	10.27	1.00	pm 12.23	5.09	10.00	3.36
Niles.....	4.00	11.48	3.00	1 40	6.27		5.00
Michigan City.	5.09	pm 12.50	4.25	2.45	7.22		6.00
Chicago.....	7.10	2.40	6.35	4.30	9.05		7.50

*Daily. †Daily except Sunday.

Kalamazoo accommodation train goes west at 8.05 a.m. daily except Sunday.
Jackson " " east at 7.27 p. m. " "

Trains on Battle Creek Division depart at 8.10 a. m. and 4.35 p. m., and arrive at 12.40 p. m. and 6.35 p. m. daily except Sunday.

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

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

NON-ALCOHOLIC KUMYSS

AFTER careful and long-continued experiments, we have devised a method of preparing kumyss which is not only free from alcohol, but also possesses other advantages of a superior character. Ordinary kumyss contains a considerable amount of alcohol, due to the fermentation of cane sugar, which is added for the purpose of producing carbonic acid gas. The amount of alcohol depends, of course, upon the amount of sugar added and the age of the kumyss. The sugar is made to ferment by the addition of yeast. Kumyss made in this way contains yeast alcohol, and, if the alcoholic fermentation is not complete, a variable quantity of cane sugar. In addition, ordinary kumyss contains a variety of toxic substances, resulting from the development of the miscellaneous microbes which are usually found in milk.

The improved form of kumyss which we offer is made from sterilized milk, and by processes which render it absolutely uniform in quality. The method of manufacture is such that its constituents are definite and constant. It is more palatable than ordinary kumyss, in consequence of the absence of foreign microbes, and is particularly suited to cases in which milk in its ordinary form disagrees with the patient, and in which so-called "biliousness" is a troublesome symptom. Cases of hypopepsia are rapidly benefited by it. It is also of great service in the treatment of gastric neurasthenia, or nervous dyspepsia.

It is extensively used in some of the largest medical institutions in the country, and has received the highest commendation from those who have investigated its merits. This kumyss is put up in pint and quart bottles, and will be shipped to any address at the following price: —

Pint Bottles, per doz., = = $2.00.

Sanitarium Health Food Co.,

BATTLE CREEK, MICH.

ARTIFICIAL LIMBS. .

BEST LEG WITH WOOD OR RUBBER FOOT, AND WOOD OR ADJUSTABLE LEATHER SOCKET. **$50 to $70**

Arms with Ball and Socket Wrist Joints.

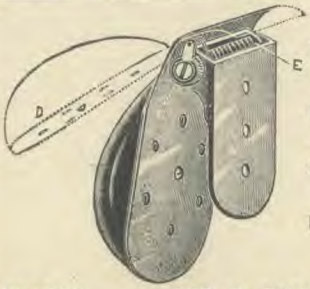
These limbs have been endorsed by such men as Prof. Esmarch; Valentine Mott, M. D.; Willard Parker, M. D.; Gordon Buck, M. D.; and scores of other eminent members of the profession.

We make one-fourth of all Limbs supplied the U. S. Government for Pensioners.

Send for catalogue and state particulars. Established 1857.

TRUSSES.

50 STYLES in Hard Rubber, Celluloid, Leather, Wire and Elastic.



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Standard Prices, Less

25 TO 50%

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Send for Book on Mechanical Treatment of Hernia.

ELASTIC STOCKINGS, CRUTCHES, SUPPORTERS, ETC.

Box 2011. GEO. R. FULLER, Rochester, N.Y.

AN IMPORTANT CLUB OFFER.

SCRIBNER'S MAGAZINE.

BY special arrangement with the publishers we are enabled to offer SCRIBNER'S MAGAZINE for 1895 and a full year's subscription to

GOOD HEALTH

For $3.50. If purchased separately these Periodicals would cost **$4.00.**

IT IS THE PLAN OF SCRIBNER'S to give its readers next year a history of the past 25 years in the United States (1869-'95). These years have been unparalleled in the history of the world for national development and material progress. The narrative will be written in a graphic and picturesque style by President Andrews, of Brown University, and capable artists will illustrate it.

ROBERT GRANT, whose "Reflections of a Married Man" will long be remembered, has written a series of articles on "The Art of Living," in which he sets himself to solve, as far as such problems can be solved, questions which beset every well-to-do family: The Income—The Dwelling—Household Expenses—Education of Children—Married and Single Life—The Summer Problem, etc., etc. Beautifully illustrated.

GEORGE MEREDITH, whom more than one good authority has pronounced the greatest of living novelists, has written a strong serial, "The Amazing Marriage," to begin in January.

W. D. HOWELLS will contribute a novel entitled, "The Story of a Play."

IN THE LAND OF DON QUIXOTE will be a series of three sketches illustrated by a number of Daniel Vierge's wonderful drawings.

SINGLE ARTICLES in great variety have been arranged for, and the illustrations will be elaborate.

SCRIBNER'S FOR 1895 WILL BE BETTER THAN EVER.

If you desire only SCRIBNER'S MAGAZINE, remit $3 to the Publishers:

CHARLES SCRIBNER'S SONS, 153-157 Fifth Avenue, N. Y.

SANITARIUM

TWO CELL
THREE CURRENT

MEDICAL BATTERY

The Advantages Claimed for this Battery Are:

Efficiency, Durability,
Simplicity of Construction,
Ease of Management,
Cleanliness, and lastly,
Small Cost of Maintenance.

THE CELLS HAVE THE FOLLOWING ADVANTAGES:

The elements are zinc and carbon.
The excitant is a solution of muriate of ammonia (sal ammoniac) and water.
There are no fumes or strong acids to corrode battery parts.
They will run for medical purposes many months without the slightest attention.
There is no consumption of the zinc element when battery is at rest.
They are perfectly sealed, so that evaporation is impossible.
High electro-motive force. Small internal resistance. Great power of recuperation.

Price, with Electrodes, complete, $10.00.

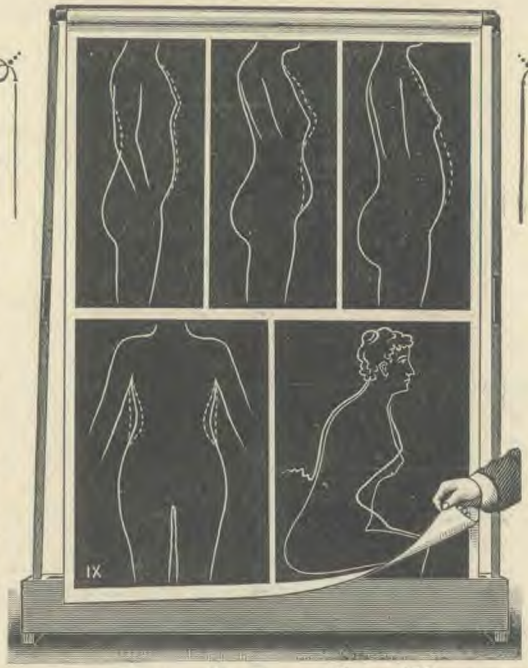
SANITARY AND ELECTRICAL SUPPLY CO.,

BATTLE CREEK, MICHIGAN.

Outline Studies of the Human Figure.

The following expression regarding the value of DR. KELLOGG'S **"Outline Studies of the Human Body,"** is from Jay W. Seaver, A. M., M. D., President of the Chautauqua Schools of Physical Education, and Medical Director of the Yale University Gymnasium: —

"Dr. Kellogg's 'Outline Studies' I am sure will prove to be very helpful to any person who is studying the human body, or who is teaching personal hygiene. These outlines should be widely introduced into public schools, where their mere presence on the walls would be a constant object lesson."



SIZE OF CHARTS,
36 by 50 inches.

PRICES:

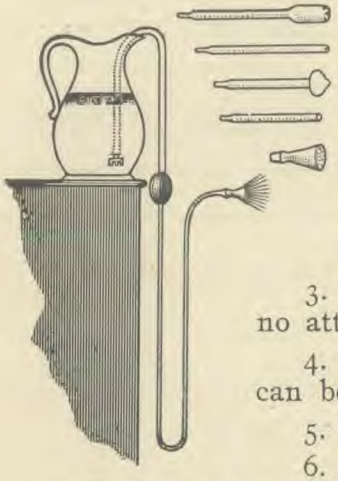
In Sheets, on Heavy Coated Manila Paper, - - $6.00

Mounted on Roller, with Exhibitor and Case, - $10.00

MODERN MEDICINE PUBLISHING CO.,
Battle Creek, Mich.

The accompanying cut represents these outline Charts mounted on a convenient Exhibitor, which is so arranged that both the Charts and the Exhibitor can be snugly packed in a compact case.

Universal Syphon Syringe



THE accompanying cut is a representation of a new form of syringe recently perfected, which possesses the following excellences:—

1. Requires no fountain, as it can be used with a pitcher, a pail, a basin, or a washbowl,—anything that will hold water.

2. It has no valves or other fixtures to get out of order, no bag to become leaky, never injects air, and is always ready for instant use.

3. It is automatic in action. After being once started, it requires no attention while in use.

4. It is the most compact automatic syringe ever devised. It can be carried in the pocket of a dress or coat.

5. It is the simplest of all syringes, and requires no special care.

6. It never fails to work.

7. It is offered at about half the price of ordinary fountain syringes, and is superior to any of them.

PRICE, including all fixtures, in a small box, $1.50. If sent by mail, 14 cents extra for postage.

SANITARY AND ELECTRICAL SUPPLY CO., BATTLE CREEK, MICH.

The Volatilizer

A NEW INSTRUMENT FOR THE TREATMENT OF

CONSUMPTION, COLDS, COUGHS, NASAL CATARRH, AND ALL CHRONIC DISEASES OF THE NOSE, THROAT, AND LUNGS.

This instrument, which is the result of long experience in the use of medicaments in the treatment of various affections of the air passages, is intended for the purpose of applying medicated air to the nose, throat, lungs, eustachian tubes, and ears. It has been tested in the treatment of a large number of cases at the Battle Creek Sanitarium and elsewhere, and is believed to be the most effective instrument for the purpose which has been devised. It is comparatively inexpensive and durable, being made of nickeled copper, so it is scarcely possible for it to get out of order.

A Nebulizer and Volatilizer Combined.

A nebulizing tube accompanies the instrument, so that if for any reason the use of a Nebulizer is desired, the instrument can be used for this purpose also, so it is not only a Volatilizer but a Nebulizer as well.

A list of formulæ adapted to different conditions accompanies each instrument.

PRICES:

Spun Brass, Nickel Plated, Complete, -	$2.50
Without Bulb and Nebulizing Tube, -	1.50
When sent by mail, add for postage, -	.12
Solutions for use with Volatilizer, per oz.,	.20

SANITARY AND ELECTRICAL SUPPLY CO.,

BATTLE CREEK, MICHIGAN.

Muscle-Beaters

SIMPLE, cheap, and efficient instruments for securing some of the effects of massage. By their habitual use one can obtain most beneficial results without the aid of an expert.

SEND FOR CATALOGUE.

SANITARY AND ELECTRICAL SUPPLY CO.,

Battle Creek, Michigan.

Cannon-Ball Massage

CANNON BALLS are effective in combating certain forms of disease, as well as in destroying life. An eminent German physician discovered a few years ago that by means of a cannon ball covered with leather a patient suffering from inactive bowels may often effect a cure by the regular use of the cannon ball, rolling it along the course of the colon, beginning low down at the right side. This remedy has been in successful use for many years at the Battle Creek Sanitarium.

Send for Catalogue. **SANITARY AND ELECTRICAL SUPPLY CO.,** Battle Creek. Mich.

Clubs and Dumb-Bells

By the use of these the muscles can be exercised and developed, giving vigor, appetite, and cheerfulness to the user.

SIZES: 1-2, 3-4, 1, 1 1-2, 2, 2 1-2, 3, and 4 lbs.

The ½ lb. is adapted to the use of children from 2 to 4 years of age; the ¾ from 4 to 8 years of age.

We furnish outfits for home gymnasiums at various prices from $10.00 upwards. One of these outfits ought to be in every home.

Send for Catalogue.

SANITARY AND ELECTRICAL SUPPLY CO.,

BATTLE CREEK, MICH.

The Umschlag

ONE of the most useful inventions of Dr. Priessnetz, the father of modern hydropathy, was the umschlag, or heating compress, as it is sometimes called by the Germans. There is no better remedy for indigestion, inactive bowels, or sleeplessness, than this simple measure, when properly applied. The umschlag consists of a properly-adjusted bandage, moistened and worn about the body at night, to be replaced by a dry bandage during the day.

Send for Catalogue.

SANITARY AND ELECTRICAL SUPPLY CO., BATTLE CREEK, MICH.

Lung Gymnastics.

CONSUMPTION begins with weak lungs. A hard cold, a pleurisy, a pneumonia, an attack of influenza or la grippe, leaves the lungs in a weak condition, unable to defend themselves against the microbes which cause consumption. These germs find a foothold, and thus the disease begins. Many persons, through lack of active muscular exercise, never develop proper lung vigor. A person who gets easily out of breath in going up-stairs, or who cannot, without great inconvenience, run a few rods to catch a train or a street-car, has weak lungs, and ought to give the matter of lung development immediate attention. All persons who have suffered from pneumonia, pleurisy, or any other serious lung affection, should also give special attention to lung gymnastics. A person who has consumption in its incipient stages may find in lung gymnastics perseveringly employed, a cure for his disease. Lung gymnastics afford, in fact, the most efficient of all means of combating this dread malady.

HOW TO EXERCISE THE LUNGS.

There are many ways of bringing the lungs into active play, as ordinary exercise, gymnastics, etc., but the most efficient means of exercising the lungs is the expiration tube, a recently-devised instrument, a cut of which is herewith shown.

The Exhalation Tube consists of a hard rubber instrument through which the breath is expelled, the instrument being held in the mouth for the purpose. It is so arranged that the outlet for the breath can be regulated at will, and thus adapted to various conditions. The effect of its use is to expand the lungs; to increase the depth of respiration, and to strengthen the respiratory muscles. It is indestructible from use, and is of convenient size so it can be carried in the pocket and used several times a day. Its use does not interfere with any other occupation in which the person may be engaged, except such as involve the use of the voice.

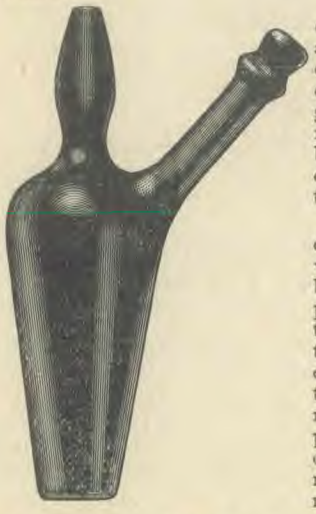
Both the expiratory and inspiratory muscles of respiration may be strengthened by using the expiration tube in the following manner: While lying upon the back and using the expiration tube in the usual manner, place a bag of shot weighing three or four pounds, a book of equal weight, or any similar object, upon the abdomen just below the pit of the stomach. In drawing the air at each breath it will be necessary to lift this weight, and thus the inspiratory muscles will be strengthened, while the expiratory muscles are strengthened by breathing out through the expiration tube. This exercise should be taken for ten or fifteen minutes three or four times a day, and will have the effect to rapidly increase the breathing capacity. Lung gymnastics are not only of benefit to the lungs, but are also of great value in diseases of the heart, stomach, liver, and in congestion of the brain.

Price of Breathing Tube, by mail, postpaid, 50c.

Address SANITARY AND ELECTRICAL SUPPLY CO., Battle Creek, Mich.

• EAR DOUCHE •

NO REMEDY is so valuable in the relief of earache as a current of hot water passed into the external canal of the ear. Many cases of inflammation of the ear resulting in perforation of the drum membrane and partial or complete destruction of hearing, might be prevented if the ear douche were employed early and perseveringly. Most of the cases of deafness resulting from diphtheria and scarlet fever would be prevented by the proper employment of this simple means of treatment.



The great obstacle to the use of the ear douche is the inconvenience of its application. A suitable tube may not be at hand, and even if a suitable tube is in readiness, it is exceedingly inconvenient for the patient to sit or lie in the required position for the length of time required to accomplish good results, and even the best-directed efforts of a skilled nurse do not always prevent the clothing of the patient from becoming wet about the neck and shoulders, and the subsequent chilling resulting sometimes makes the patient worse than before.

All these disadvantages are overcome by the ingeniously-devised tube for the administration of the ear douche, cuts of which are here shown. The instrument is made of hard rubber, and consists, as will be seen by reference to the accompanying cuts, of an inner tube which conducts the water to the ear, while an outer tube conducts it out, and at the same time is so shaped as completely to close the opening of the ear. The water is conducted off by a second tube attached to the device, into a receptacle. By the aid of this instrument a patient may lie in any position, and no attention to protection of the clothing is necessary. Thus the treatment can be kept up for several hours, if desirable, and in inflammation threatening complete destruction of hearing, the case may usually be speedily brought to a favorable termination.

EVERY FAMILY OUGHT TO POSSESS THIS INGENIOUS AND USEFUL INSTRUMENT.

It will be sent postpaid on receipt of 75 cents.

SANITARY AND ELECTRICAL SUPPLY CO., Battle Creek, Mich.

HEALTH FOODS

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

	Cts. per lb.
Oatmeal Biscuit	12
Medium Oatmeal Crackers	10
Plain Oatmeal Crackers	10
No. 1 Graham Crackers	10
No. 2 Graham Crackers	10
Plain Graham Crackers, Dyspeptic	10

	Cts. per lb.
Water Crackers	10
White Crackers	10
Whole-Wheat Wafers	10
Gluten Wafers	30
Rye Wafers	12
Fruit Crackers	15
Carbon Crackers	15

	Cts. per lb.
Wheat Granola (bulk 10)	12
Avenola (bulk 10)	12
Granola (bulk 10)	12
Gluten Food No. 1	50
Gluten Food No. 2	40
Gluten Food No. 3	20
Infant's Food	50

Sample packages containing specimens of each of our foods sent postpaid for 50 cents. Selected samples, 25 cents.

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

SANITARIUM HEALTH FOOD CO., BATTLE CREEK, MICH

J. FEHR'S

"COMPOUND TALCUM"

"BABY POWDER,"

The "Hygienic Dermal Powder" for Infants and Adults.

Originally investigated and its therapeutic properties discovered in the year 1868 by Dr. Fehr and introduced to the Medical and the Pharmaceutical Professions in the year 1873.

COMPOSITION.—Silicate of Magnesia with Carbolic and Salicylic Acid.

PROPERTIES.—Antiseptic, Antizymotic, and Disinfectant.

USEFUL AS A GENERAL SPRINKLING POWDER,

With positive Hygienic, Prophylactic, and Therapeutic properties.

GOOD IN ALL AFFECTIONS OF THE SKIN.

Sold by the Drug Trade generally. Per Box, plain, 25c.; perfumed, 50c.; Per Dozen, plain, $1.75; perfumed, $3.50.

THE MANUFACTURER:

JULIUS FEHR, M. D., Ancient Pharmacist,

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Only advertised in Medical and Pharmaceutical prints.

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BATTLE CREEK, MICH.

The Oldest and Most Extensive Sanitarium Conducted on Rational and Scientific Principles, in the United States.

SPECIAL ADVANTAGES:

An elevated and picturesque site. Remarkably salubrious surroundings.
Baths of every description.
Electricity in every form.
Massage and Swedish Movements by trained manipulators.
Pneumatic and Vacuum Treatment.
All sorts of Mechanical Appliances.
A fine Gymnasium, with trained directors.
Classified Dietaries.
Unequaled Ventilation, perfect Sewerage.
Artificial Climates created for those needing special conditions.
Thoroughly Aseptic Surgical Wards and Operating Rooms.
All Conveniences and Comforts of a First-Class Hotel.
Incurable and Offensive Patients not received.

Not a "Pleasure Resort," but an unrivaled place for chronic invalids who need special conditions and treatment not readily obtainable at home.

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SANITARIUM, BATTLE CREEK, MICH.