THE

HEALTH REFORMER.

Nature's Laws, God's Laws; Obey and Live.

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Diphtheria.

THIS disease, often so terribly fatal to children, is already beginning to show itself in many places; and although we have frequently published hints upon the proper treatment of the malady, we do so again, as the readiest means of answering the numerous queries which are presented us for consideration by anxious parents and others.

In the treatment of no other disease are the salutary results of prompt and efficient treatment more apparent than in this. A day or two delay, sometimes a few hours, has often added immensely to the gravity of the disease, and not infrequently has sacrificed a life which more vigorous action would have saved. When diphtheria is prevalent in a community, every parent should be constantly on the alert to note the first beginnings of the disease. The slightest soreness of the throat should lead to an immediate and careful examination of the throat of the child. If a little white patch is discovered upon any portion of the soft palate or fauces, the case may be safely considered one of diphtheria. The patch of false membrane is very commonly first seen upon one of the tonsils. If the membrane is firmly attached, not being easily dislodged, it is a certain evidence of the disease, and vigorous treatment should be begun at once. Even if there is simply an unusual redness of the fauces, if there is a feeling of soreness and fullness, indicating a congested and swollen condition of the mucous membrane, treatment should be applied without delaying for the appearance of more serious symptoms.

Diphtheria is now generally recognized as a germ disease. The false membrane which forms in the throat is accompanied by a fungous growth which produces great numbers of germs, or spores, which are not only capable of communicating the disease to others, but by absorption into the system greatly intensify the disease. There is no doubt that in all cases of diphtheria which are distinctly pronounced, the whole system is more or less contaminated by these poisonous germs.

The facts just stated form the principal data upon which is based the rational treatment of this really formidable disease. It should be kept in mind that neither the local manifestation of the disease, nor the fever, prostration, and other general symptoms which indicate the systemic disturbance, is the whole of the disease. Neither set of symptoms should receive exclusive attention. The practice of some in treating the disease as purely local in character is often productive of great injury, and results in useless loss of life. In fact, the cardinal principle to be followed in this as in all other cases of disease, is to treat the patient, rather than the disease. If this principle is kept in mind, it will save the physician from many errors.

In the treatment of diphtheria, the first indication is for destruction of the germs which are forming in the throat in great numbers and being dispersed thence to various parts of the system, and prevention of their formation. For the destruction of the germs, some application is needed which has the power to destroy vegetable fungi. There are numerous substances which possess this property. Among the most efficient and serviceable in cases of this sort may be mentioned a solution of permanganate of potash, dilute tartaric acid or lemon juice, common salt, salicylic acid, a solution of sulpho carbolate of soda, chlorate of potash, and chlorine water. All of these are good remedies for local application, if rightly employed. If only one is employed, the last-mentioned is undoubtedly the most efficient. The following are brief descriptions of the method of preparing for use the various remedies mentioned:—

1. Dissolve half a teaspoonful of crystals of permanganate of potash in two table-spoonfuls of hot water. Place in a bottle, and cork tightly. The solution, if good, will be of a beautiful dark purple color. When it be-

comes brownish, it is useless. To use, add ten or fifteen drops to a third of a glass of water. A quantity of this admirable remedy should be always kept on hand, as it is a most excellent disinfectant. It can be got at any drug store.

2. Make a strong solution of crystals of tartaric acid, or squeeze the juice from two or three lemons.

3. To half a glass of strong vinegar add an equal quantity of water and a teaspoonful of common salt.

4. Obtain at the drug store a solution of salicylic acid or sulpho-carbolate of soda, of the proportion of three grains of the substance to the ounce of water.

5. Add crystals of chlorate of potash to hot water until some of the crystals remain in the bottom of the bottle undissolved, showing that the solution is saturated.

6. Procure at the drug store a few ounces of chlorine water or solution of chlorinated soda. To one part of either solution add three parts of water to prepare for use.

The solutions may be used as gargles, but it is better to apply them with a swab made by winding a piece of soft cotton around the end of a lead-pencil or small stick. The swab should be well cleansed immediately after using, and should be well saturated with the solution employed. Care should be taken to apply it thoroughly to the whole of the diseased surface. It should be used as often as once in one to three hours, according to the urgency of the case.

The patient should be instructed not to swallow the mucus which accumulates in the throat, as it is highly charged with the poisonous germs. If drink is given, the mouth should be first well cleansed and disinfected. Germs taken into the stomach may be absorbed into the system, and so increase the general poisoning. Many germs will find their way into the stomach notwithstanding the precaution mentioned, and hence it is wise to adopt some means of destroying them. This can be best done without injury to the system by giving the patient once in three or four hours a teaspoonful of the solution of chlorate of potash.

The remedies described are all intended to destroy the germs after they are formed. It is also important to check their formation, as before remarked. This may be best done by the following method: Once in two hours apply to the throat flannel cloths wrung out of water as hot as can be borne. The cloths should be three or four folds thick, and should be large enough to envelop the neck and throat. The fomentations should be continued for twenty to thirty minutes, the cloths being changed every five minutes. During the intervals between the fomentations, cloths wet in cold water should be applied to the throat, being changed every ten or fifteen minutes. The water in which the cloths are wet should be as cold as can be obtained. In a case of extreme urgency, ice should be used. It may be simply added to the water, or small pieces of ice may be placed between the folds of the cloth, in which case they will not require so frequent changing.

The patient will often experience great relief from the inhalation of the vapor arising from the slacking of lime in water or diluted vinegar. A coffee-pot may be conveniently used for this purpose, the patient being allowed to inhale the vapor as it escapes at the spout. Or, almost any vessel may be employed, the vapor being conducted to the nostrils of the patient by a paper funnel. The patient may be allowed to take the inhalation as much as he pleases, and should be encouraged to apply it persistently.

At the same time that the local treatment is being prosecuted vigorously, the general treatment should be equally thorough. At first give the patient a warm blanket pack, which consists in wrapping him up in a woolen blanket wrung out of warm water. The pack may be continued fifteen minutes to half an hour, according as the patient is quiet or restless. Nervous children often require that one of the arms should be left out, to prevent disquiet from the confinement. The pack should be given once or twice a day. The additional general treatment consists in sponging the patient once or twice an hour, when the temperature is high, with cool or tepid water.

If the bowels are confined, they should be relieved by an enema once a day. If the false membrane appears upon any other part of the body, the same principles of treatment should be applied. If the part is accessible, lint or cotton saturated with chlorine water may be applied to the portion covered by the membrane.

Another essential of treatment is to give the patient plenty of nourishment. Oatmeal or graham gruel, with milk, and plenty of ripe fruit, constitutes a good dietary. The food should be given at regular intervals, and not more frequently than in health.

The only remark we have to add in conclusion is, under no circumstances allow the patient to be cauterized with nitrate of silver, pure carbolic acid, or any other powerful caustic. In our opinion the remedy is worse than useless, since it denudes the healthy mucous membrane, thus exposing it to the

poisonous influence of the fungus, besides exciting, in a very great degree, the local inflammation. We know of more than one hundred cases of diphtheria treated substantially in the manner described, without a single death in the whole number, and without any of the serious results which frequently follow this disease. If the instructions given are faithfully carried out, they will rarely fail to bring the patient safely to recovery; but promptness, energy, and perseverance are essential features of the treatment.

EDITOR.

Strength and Health.

DIO LEWIS, whose writings on bodiculture, if they are not very profound, have, at least, the merit of brevity and good sense, calls the attention of the public to the prevailing fallacy that strength is a synonym for health. He knows intelligent persons who really believe that you may determine the comparative health of two men by measuring their arms. The man whose arm measures twelve inches is twice as healthy as he whose arm measures but six. "This strange and thoughtless misapprehension," he says, "has given rise to nearly all the mistakes thus far made in the physical-culture movement. I have a friend who can lift nine hundred pounds, and yet is a habitual sufferer from torpid liver, rheumatism, and low spirits. The cartmen of our cities, who are our strongest men, are far from being the healthiest class, as physicians will testify. On the contrary, I have many friends who would stagger under three hundred pounds, that are in capital trim."

These truths seem so obvious, when thus stated and illustrated, as hardly to rise above commonplace. Why, then, repeat them? Because, by the vast majority of "health-lifters," gymnasium-frequenters, and would-be athletes, they are either unknown or practically ignored. Every pale, sickly, pigmy-limbed man wants to be physically strong; to be a Hercules, a son of Anak, at least a small Heenan, is absolutely essential, he thinks, to the enjoyment of perfect health. If he cannot expect to lift a ton, or to walk a thousand miles in a thousand hours, he must, at least, be able to take a daily "constitutional" of five miles and back, or to raise five hundred pounds without bursting a blood-vessel. But what is the meaning of the word "strong"? From the glibness with which some men repeat the term, one would suppose that nothing is easier than to define it,—that the proposition that a man is very strong is as simple as the proposition that he is six feet high. The truth is, however, that the word is ambiguous,—that under its seeming unity there lurks a real dualism of meaning, as a few facts will show.

In the first place, one of the most obvious tests of strength is the power of exertion. But great power of exertion may co-exist with extreme delicacy of organism, and even with organic disease. Napoleon, who slept four hours and was on horseback twenty,—who toiled so terribly that he half-killed his secretaries,—underwent fatigues that would have broken down nine out of ten "strong" men; yet his digestion was always delicate and easily deranged, and he died of an hereditary organic disease at the age of fifty-five. Julius Cæsar was not what is popularly called a "strong" man; yet he was a prodigy of exertion and endurance. Again: it is a striking fact that great power of exertion in one direction does not always imply its existence in another. There are hundreds of men who can perform tasks that severely tax the muscles, and endure with impunity all kinds of exposure and hardship, who collapse under a continuous and severe strain upon the eyes, the brain, and the nerves; and the converse is as often seen. Dr. Elam, the author of that deeply interesting work, "A Physician's Problems," tells us that not long ago a friend reviewed with him the names of six or eight upper wranglers at the English Universities for the last twenty years, and that, with *very* few exceptions, these and nearly all the "double first" men were alive and well; while, on the other hand, on reviewing the history of two boats' crews of picked men, of whom they had full and accurate information, they found that not one of them was alive. Surely, such havoc as this was never found among mental athletes.

Again: while there is a recognized limit to physical endurance, the limit to mental toil or strain is by no means so well defined. A man may saw wood, plough the earth, or lay brick, until he is physically exhausted, and can do no more; but the limit of mental labor is far less evident. Look at the amount of work which that dwarf, hunchback, and invalid,—that "drop of pure spirit in cotton wool,"—Alexander Pope, contrived to perform! When he got up in the morning, he had to be sewed up in stiff canvas stays, without which he could not stand erect. His thin body was wrapped in fur and flannel, and his meager, spectral legs required three pairs of stockings to give them a respectable look. Almost literally a pigmy in size, he was so deformed that his life was one long disease. Look at brave Samuel Johnson, so feeble as a child that the physician said he

never knew another raised with such difficulty, —struggling all his life with a severe scrofulous disorder, that twisted his body into strange contortions, and with a constitutional depression and hypochondria, "a vile melancholy," that kept him, as he said, "mad half his life, or, at least, not sober,"—so languid at times that he could hardly tell the hour on the clock, and yet, with one pair of hands and one brain, doing the work of an academy! In spite of his exhausting labors and still more exhausting diseases, he lived to the age of seventy-five. See, again, the giant labors performed by Channing, with his frail, clayey tabernacle; and note the vast amount of writing and other useful work performed by those physical ghosts of men, Professor Goddard, of Brown University, and the late Professor Hadley, of Yale! Need we add to these the cases of Torstenson, the Swedish General, who, afflicted with gout, had to be borne on a litter, yet by the rapidity of his movements astonished Europe; or that of General Wolfe, who, though the seeds of several fatal diseases were laid in his constitution from infancy, yet wrested from the French the Gibraltar of America; or that of Palmerston, who, according to Sir Henry Holland, under a fit of gout which would have sent other men groaning to their couches, used to continue his work of reading or writing on public business almost without abatement, amid the chaos of papers which covered the floor as well as the tables of his room?

But, some one will ask, has that spectral-looking lawyer, or that statesman, who apparently performs such prodigies of labor,—that pale, lean man with a face like parchment, and nothing on his bones,—a constitution? We answer, in the words of the London *Times* to a similar query some years ago,—"Yes, he has; he has a working constitution, and a ten times better one than you, my good friend, with your ruddy face, and strong, muscular frame. You *look*, indeed, the very picture of health, but you have, in reality, only a sporting constitution, not a *working* one. You do very well for the open air, and get on tolerably well with fine, healthy exercise, and no strain on your brain. But try close air for a week,—try confinement, with heaps of confused papers, blue books, law books, or books of reference to get through, and therefrom extract liquid and transparent results, and you will find yourself knocked up and fainting, when the pale, lean man is—if not 'as fresh as a daisy,' which he never is, being of the perpetually cadaverous type,—at least as unaffected as a bit of leather, and not showing the smallest sign of giving way. There are two sorts of good constitutions,—good idle constitutions, and good working ones."

Another test of strength is the power of enduring hardship, touching which we see repeated the paradox we have already noted. Far from being associated invariably with great muscular force, this power is often found in union with extreme delicacy of organization. Who, in catastrophes and seasons of great peril, has not seen frail, delicate women, who would scream and almost faint at the sight of a mouse, bear up under toils, perils, and sufferings which would kill the stoutest men? Who has forgotten the lignum-vitæ toughness of Dr. Kane? Though a sailor by profession, he never went to sea without suffering from seasickness; he had a heart disease and a chronic rheumatism; yet he had a vitality,—an iron endurance,—which enabled him to go through sufferings in the Arctic Seas under which big, burly sailors, and other men specially trained to endure such hardships, sank into the grave. William III, of England, was not a strong man, nor was Luxemburg, his fiery opponent in the Netherlands. A Greek educator would have deemed it an abuse of the medical art to cherish the flickering flame of life in either of them. Yet it is doubtful whether among the two hundred thousand men whom they commanded, there was one with greater power of endurance than that of the hunchbacked dwarf that led the fiery hosts of France, or that of the asthmatic skeleton that conducted the stubborn troops of England.

In thinking of the ideal of humanity,—the great man,—we almost always picture him as a noble bodily presence, full of health and vigor, and with a mind as healthy and vigorous as its abode. Yet how often is this notion contradicted by the facts! In what mean and unsightly caskets have some of the rarest and most potent essences of nature been inclosed!

Among the tests of strength, longevity must be considered one; and here we are confronted by facts that make the explanation of "strength" still more difficult. Dr. Elam cites the names of twenty-five celebrated thinkers, than whom none have ever exerted a greater influence upon literature, history, and philosophy, who lived to the average age of ninety years. Yet many of them, it is well known, were prodigious workers and voluminous authors; and not a few of them, there is reason to believe, would be regarded by our modern physical-culture men as weaklings. One of them, Galen, wrote three hundred volumes, and lived nearly a century; another, who had a very feeble constitution,

and wrote seven or eight hours daily,—Lewis Cornaro,—reached a full hundred years. On the other hand, Dr. Winship, the leading apostle of "muscular Christianity" in this country, who at one time could lift a weight of three thousand pounds, died at the age of forty-two. Ascertain the united ages of twenty-five of the most eminent farmers the world has seen, and is it probable that the sum total would amount, as in the case of these thinkers, to twenty-two hundred and fifty years?

It is customary, where a seemingly feeble man, tortured with disease, shows a durability or toughness which an athletic man lacks, outliving and outworking him, to explain the mystery by saying that the former has "a better constitution" than the latter. But does this solve the riddle? Evidently not. It simply gives it another name. What is that thing which, for convenience, or to hide our ignorance, we call "constitution," which may be constantly impaired, but has the ability to withstand so many shocks? It has been well observed by a thoughtful writer that "a table would not be called strong if two of its legs were cracked and several of its joints loose, however tough might be its materials, and however good its original workmanship. But if the table showed a power of holding together and recovering itself, notwithstanding every sort of rough usage, it might well be called strong, though it was ultimately broken up; and its strength might not unnaturally be measured by the quantity of ill-usage which it survived. It is precisely in *this power of self-repair* that the difference between a body and a mere machine resides. The difficulty of saying what is meant by physical strength is in the difficulty of distinguishing between the mechanical and what, for fault of a better word, must be called the vital powers of the body. Look upon the body as a machine, and the broken arm, the tubercles in the lungs, or the cancer in the liver, prevent you from calling it strong; but, if it goes on acting for years, and wonderfully recovering itself again and again from the catastrophe which these defects tend to produce, there must be a strong something somewhere. What and where is that something?"—*Mathews.*

Laughing.—Says an exchange, "The man that laughs is a doctor without a diploma. His face does more good in a sick-room than a bushel of powders or a barrel of bitter draughts. People are always glad to see him. Their hands instinctively go half-way out to meet his grasp, while they turn involuntarily from the clammy touch of the dyspeptic who speaks in the groaning key. He laughs you out of your faults, while you never dream of being offended with him; and you never know what a pleasant world you are living in until he points out the sunny streak on its pathway."

Diseases of Women.

THE declining health and strength of American women has come to be a very common observation. Very few young ladies of the present day can compare with their grandmothers of the last generation in powers of physical endurance. Physicians generally acknowledge that at least three-fourths of their practice is derived from diseases of women. The causes of this general and notable decline are well worth consideration. We will briefly hint at a few.

Fashionable Dress.—No one cause has done more to undermine woman's physical health than her devotion to dress. Whatever fashion dictated, she has felt in duty bound to follow, no matter if in so doing she committed the grossest violations of the laws of health. In thus doing, she has compelled her poor body to undergo the most inhuman tortures. She has heaped upon her sensitive, nervous head, a cruel load of artificial hair; nearly choked herself to death with belts and corsets, and squeezed her vital organs into most unnatural shapes; contorted her tender feet into misshapen masses with tight shoes and high heels; and disturbed her whole vital economy by surrounding her vital organs with a superabundance of clothing while suffering her limbs to go almost unclad, no matter how cold and damp the weather. With such abuse is it strange that she complains of headaches, lung troubles, weak back, and general debility?

Sedentary Habits are another prolific cause of woman's decline. Confinement within doors, without a proper amount of physical exercise, results in deficient development of the muscular system, and various weaknesses follow which render her feeble and inefficient. Too much novel-reading, piano-thrumming, parlor-lounging, and day-dreaming are ruining the constitutions of thousands of the young ladies of the present day.

Late Hours.—Fashionable dissipation at any time is bad enough; but when continued to a late hour of the night, or even until early morning, when the system is exhausted for want of rest, it becomes doubly enervating. Sleep is Nature's opportunity for repairing the wastes which occur during the hours of wakefulness. The nervous system

wears out faster than any other part of the body; hence it suffers more severely than any other part when deprived of proper opportunity for repair. Is it any wonder, then, that so many ladies are nervous and hysterical, and constantly complaining of headaches, neuralgias, and weak nerves?

Bad Diet.—Improper dress, with deficient exercise and late hours, with the usual accompaniments of dancing and feasting, so enervate the system as to create a demand for artificial stimulation, in the form of strong tea and coffee, mustard, pepper, spices, animal food, and all sorts of highly seasoned dishes. The certain result of this abuse of the digestive organs is dyspepsia in some one of its myriad forms. Torpidity of the liver and skin are accompanying evils which may properly be traced to the same cause. The loss of that clearness and brilliancy of complexion which exist only in health, leads to the use of cosmetics of various sorts, which, in many cases, still further undermine the health and injure the skin.

Sexual Sins.—One of the most potent though usually obscure causes of woman's physical decline, is that referred to in the heading of this paragraph. Transgressions of Nature's laws in this regard are attended with results the most fearful that humanity can suffer. Sexual excesses, for which she is usually only in small degree responsible, not only occasion their own sad results, but lead to the perpetration of such horrible crimes against Nature as prevention of conception, and fœticide or abortion. Thousands of women have by some form of sexual transgression brought upon themselves diseases and weaknesses which entail lifelong suffering. These evils are becoming so prevalent that unless checked they threaten to exterminate the race.

Too Much Drugging.—Last, but not least, in the list of enemies to woman's health, we mention drugs. Medicines of this class undoubtedly have their legitimate place; but they are subject to great abuse. The general tendency of most of the other causes mentioned is to produce obstinate constipation of the bowels. For this evil a remedy is sought in laxatives of various sorts, after-dinner pills, and purgatives. These give temporary relief, only to exaggerate the difficulty which they are expected to remove. Tonics are demanded to support the waning strength, which is not replenished by proper rest and well-digested food. Nervines and opiates are required to quiet the weak and irritable nervous system. Chloral and morphia become indispensable to procure sleep. Headaches and neuralgias necessitate fresh doses of narcotic drugs. Hysterical attacks call for antispasmodics. General debility is an indication for stimulants, while torpor of the liver, skin, and system generally, suggests the need of alteratives. Thus the life becomes a daily round of dosing. One after another various drugs lose their effect, and are replaced by others more powerful. Meanwhile the system grows daily weaker, more torpid, and more diseased.

Such trifling with Nature is in the highest degree reprehensible, and will prove fatal to the strongest constitution. Drugs never cure such maladies. No remedy is of any value which does not reach the causes of the diseased conditions to be removed. If the women of America value health, if they covet physical strength, if they aspire after the endurance of their grandmothers, let them abandon the ruinous habits which are dragging them down, and enervating their mental and physical forces. Let them shake off the shackles of fashion and conventionality, and conform to the God-implanted laws which govern their sensitive bodies.—*Household Manual.*

The Battle Creek Sanitarium.

THOSE who are interested in the welfare of the Sanitarium will read with interest the following respecting the institution and the new building, which we quote from the "*Dispatch and News,*" the leading paper of an adjoining county, and a most excellent weekly, edited by our friend and former patient, Mr. V. C. Smith:—

"This mammoth building is designed expressly for the purpose of a hygeian hospital, or a home for the invalid, and those desiring rest and recuperation; and with this aim steadily in view, the founders have carefully studied the construction of the various departments of the building, from the basement to the mansard roof or upper story. Nothing has been left out that would contribute to the comfort or convenience of the patient, within the range of a skillful architect; the physician-in-chief has visited and carefully noted the facilities and arrangement of the best modern institutions of the kind in the United States; and regardless of expense the Sanitarium building is now being supplied with all the latest appliances, and in a style that places this institution on the highest plane of excellence, both in architectural appearance, ventilation, method of heating, water supply, and all the various improved methods, so well adapted to the object designed.

"We have frequently made favorable mention in this journal of the Health Institute, and quite recently gave a detailed description of the new Sanitarium, and it is scarcely necessary to repeat it, yet we wish to call the attention of the public to a few things connected with the every-day management of this popular and pleasant home for the sick. In 1872, we spent some four months there under treatment, and have been there frequently since; and although we have never taken treatment more than once for the same disease, yet we have always found relief. The treatment this summer and at present is an improvement over the old method; it is more vigorous, and better adapted to the condition of the patient; and under the direction of the present physician-in-chief, with the able assistant lady and gentleman physicians, a great deal has been accomplished in healing the sick.

"And when we consider that about 95 per cent. of the hundreds of patients who visit the Sanitarium for treatment every year, are chronic cases, and many of them given up to die by their home physicians, it is wonderful that so large a number of such patients entirely recover and return to their homes with thankful hearts; but this is true with scores and hundreds of the invalids who are treated for different diseases at this Sanitarium. The increased facilities and all the appliances known to this method of healing the sick, and the great conveniences brought in use by the new building, its spacious halls, its 600 feet of veranda, its large and well-ventilated bath-rooms, its parlor and gymnasium, in fact, everything that can add to the pleasure and comfort of the patients, together with its groves, lawns, walks, and croquet grounds, all situated upon the most elevated and pleasant locality in the city of Battle Creek, and—as we have often had occasion to say before—the religious and moral influences that pervade and encircle all, crown the institution with advantages and extended facilities for healing the sick, that can be found in no other place.

"Many of the first families in Battle Creek have found this to be true, and are availing themselves of the benefits of the treatment; most of the States, and Canada, have been and are now being represented here, some quite largely; and thousands can attest to the remedial agency of this excellent institution.

"Altogether, this institution is the one *par excellence* of its kind in America. With an efficient corps of physicians, at whose head stands a thorough scientific man, in the front rank of his profession—having a Board of Trustees of tried ability and judgment, whose president is acknowledged to be one of the best financiers in the State, and a man whose life thus far has been spent in the successful carrying forward of grand enterprises—with all the facilities that science and long experience can devise—with a wide and enviable reputation, and an ever-increasing patronage—the Medical and Surgical Sanitarium of Battle Creek, Michigan, is destined to wield a mighty influence in the world, and to be a powerful means of breaking down the old, pernicious autocracy of empirical medical practice, and of encouraging sanitary reform."

Hygiene of the Eyes.

THE Boston *Journal of Chemistry* compiles the following excellent rules for the preservation of the health of the eyes, from eminent French and English authorities:—

"For the worker the light should come as much as possible from the left side, that is to say, from the side towards which one turns in working. Daylight is the best; but direct sunlight and that reflected from mirrors should be avoided. The aspect should be northern, and the light should come a little from above.

"White walls should be avoided; highly varnished tables and, in workshops, shining articles like silk, should be protected from the sun's rays.

"Artificial light is always bad, on account of the heat and the exhalation of carbonic acid. The best is that of lamps fed with vegetable oil (much used in France, but seldom in this country) and furnished with a glass shade. Gas is bad, because of its heat, brilliancy, and mobility; the light of mineral oils is too hot; that of candles insufficient and flickering. The eye of the workman should avoid the light coming to him directly or diffused through the room.

"Working immediately after meals is objectionable; also uninterrupted use of the eyes for long periods of time. One should write on an inclined plane, and not keep the head bent down more than is absolutely necessary. Reading in bed is bad every way.

"Some good authorities commend washing the eyes with cold water, but the majority of the best ophthalmologists advise the use of hot water for the less serious affections of the eye. For tired eyes we believe, from our own experience, that water hot as can be borne is refreshing and beneficial.

"If the eyes are fatigued by bad artificial illumination, blue or slightly smoked glasses

will be useful, and in order to avoid the lateral rays they should be large and round.

"If the irritation of the eyes persists, all work must be abandoned, and an examination made to see if there be any disturbance of refraction, of power of accommodation, or of the mobility of the eyes.

"Presbyopia, or so-called 'far-sightedness,' supervenes earlier with those who are constantly at work than with other individuals, and as soon as it does, convex glasses should be at once resorted to, without which the muscle of accommodation would be fatigued to no purpose. At first, they should be used for working in the evening, after the fatigue of the day; but a long-sighted person should only use spectacles for looking at near objects, not at far ones.

"Work requiring close application favors the development of myopia, or 'near-sightedness,' precisely in proportion as the conditions of illumination are bad. If the action of those causes continues, the myopia will increase until vision is lost.

"A slight degree of myopia may be favorable to close work; but, as a general rule, work requiring close application, by the derangement of circulation that it inevitably induces in the eye, is much more injurious to the myopic, and is the great cause of the development of myopia and its complications. Young people should be examined, and if they are myopic hindered from undertaking tedious studies and all professions demanding close application of the eye."

Infant Mortality.

A MAINE physician sends to a scientific journal a very practical article on the subject named, in which he points out the fact, to which we have often called attention, that the great cause of infant mortality is found in errors relating to their diet. We would not attach the entire blame for the terrible fatality of infants to too frequent feeding, since error in the quality of their food is evidently one of the most active causes of untimely death. We would also allow a child to take its food four times a day during the first three or four months of life, but not after nine o' clock at night, nor before five in the morning. We quote the article referred to as follows:—

The mortality reports of our cities from week to week show the appalling fact that *one-third* of all deaths are of children under one year of age! Why should this be? Nothing of the sort occurs in the brute creation. Can it be prevented in human kind? A farmer can count with surety upon the healthy life and steady growth to mature age of the calf he raises. Yet perhaps not one of his children, however vigorous at birth, will escape a fearful sickness, even if it escape death before its first year is ended. The subject of the care and treatment of young children is not touched upon in our college courses of medicine. Our young medical students learn something of the treatment of cholera infantum, "teething," and the various ailments of infants; but with regard to the *prevention* of such troubles they are left entirely ignorant.

The trouble lies almost wholly in the manner of feeding. Ever since time began, the one great anxiety has been to keep the little darlings full of something from the time they come into the world until their little bodies are carried to the grave, or by some strange good luck survive this treatment until they reach an age when an approach to regularity is exercised in their feeding. During the first year, children are as a rule *stuffed* early and late; hence the greatest mortality is at that age. After this they are allowed more time between meals; hence a less proportion die. For example, while one-third of the deaths, according to the mortality reports, are of children under one year, only about one-fifth are between one and five years. After five years of age, children are fed on something like the three-meal system, and comparatively very few die between five and thirty years of age. In spite of these figures, or because their significance has not been noted, it has not occurred to the people to *begin* with three meals. The farmer who wants to raise the best possible animal from the calf, lets the creature suckle in the morning at milking time and again at night, with possibly a meal at noon. He is wise enough to feed his calf only twice or at most three times a day; and the result is that the calf thrives from birth, and sickness is unknown.

The same farmer has a baby born, and a contrary course is pursued with a contrary result. Even before nature supplies the food, before the mother's milk comes, the ignorant nurse doses the baby with sweetened water or cow's milk. This results in stomach-ache, and the cries of pain being mistaken for cries of hunger, down goes another dose, until finally, when the mother's milk does come, the child's stomach is in a condition to revolt at anything. If, owing to a vigorous constitution, the little victim goes along for a few weeks or months, it is generally fed every

hour, or oftener, unless it happen to be, as is often the case, in a lethargic sleep for several hours, sleeping off a surfeit as an adult sleeps off a "drunk." It is rarely the case that a child is not eating and vomiting, alternately, from morning till night; indeed, so invariable is this that it is regarded as altogether natural. It is expected that the child will "throw up" continually, at least after being fed, and the nurse declares that "it is all right; Nature takes care of all that." It is not all right,—it is all wrong. Nature, indeed, revolts against this barbarous treatment of a baby's stomach. Early and late, often through the night as through the day, it is kept full and distended; every hiccough is an attempt of the stomach to eject its overload, and the habitual vomiting is simply the result of cramming, until the little innocent babe has become a confirmed dyspeptic.

When this matter is generally understood, the rearing of children will be a delight in the household instead of a torment. There is no good and sufficient reason for a child's being other than a comfort from birth. The whole trouble is that somehow this vital question has been either ignored by the medical profession or has received only superficial attention. Physicians and many others have for a long time felt sure that infants are overfed, but the full enormity of the evil has never been realized; besides, it is all a doctor's practice is worth to interfere to any great degree with what the nurse regards as her special business. A babe should be fed three times a day, and no more, from birth; say at seven, twelve, and five o'clock, or with intervals of not less than five hours. We are told that a baby's stomach is so small that it will not hold enough to last through the five or six hours. God made the baby's stomach, and made it as large in proportion as an adult's. A baby grows no faster than a child from twelve to fifteen years old, and from no point of view can it be made to appear to need four, five, or six meals during the first any more than the twelfth year.

"Yes, to be sure," says the all-wise nurse, who began nursing twenty or thirty years ago, and has done her best ever since to avoid being taught anything; "yes, but a baby eats nothing but milk; do n't have beef and bread like old people." But the mother's milk is the baby's beef and bread; it is the very essence of the beef and bread eaten by the mother. It is hearty food, and a child that has three meals of it will not hunger or fret, will sleep soundly all night long, and in every respect will do better than if fed on any other plan. In short, it is *right*, and the constant stuffing of children is barbarous cruelty, notwithstanding the fact that it springs from the kindest promptings of the human heart.

Let the rule, then, be three meals a day between six A. M. and six P. M.; and remember, if the child has hiccough, or throws up any part of its food after feeding, it has had too much and should have less next time. There can be no reason given why a baby should habitually throw up its milk any more than a man should sit at table and stuff himself, like an old Roman *gourmand*, until he vomits. With right care as to feeding, clothing, and cleanliness (but chiefly the feeding), the death of a healthy-born infant before two years of age would be so rare as to be a cause for wonder and comment, in fact, would be regarded as a strange phenomenon. Cholera infantum would be unknown, "teething sickness" a thing of the past, or so slight as to cause no anxiety, and the infants would be in a condition to combat successfully the various infantile diseases.

The writer had three healthy children born, and all three died of so-called cholera infantum. They were fed from birth as nearly all infants are,—as often and as much as they wanted. For the past ten years, since then, I have paid special attention to the study of this question. I have observed the effects of various systems of feeding,—"once in three hours," "once in four hours," as well as "every hour,"—and can say absolutely that there is no half-way ground. I have given the three meal system a trial under circumstances rendering it especially convincing, and with such happy results that I cannot forbear making this communication for the benefit of humanity.

Equality and Fraternity.—M. Boudon, a surgeon of some eminence, was sent for by the Cardinal Dubois, prime minister of France, to perform a serious operation upon him. The cardinal, on seeing him enter the room, said, "You must not expect to treat me in the same rough manner as you treat your poor miserable wretches at your hospital of the Hôtel-Dieu." "My lord," replied M. Boudon, with great dignity, "every one of these miserable wretches, as your eminence is pleased to call them, is a prime minister in my eyes."

—It is said there are not less than six hundred thousand habitual drunkards in the United States, and of these sixty thousand at least die annually.

—The vail which covers the face of futu rity is woven by the hand of mercy.

LITERARY MISCELLANY

Devoted to Natural History, Mental and Moral Culture, Social Science, and other Interesting Topics.

AFTER ALL.

After the long, cold winter,
Then the spring with its showers.
After the snow and tempest,
Then the breath of the flowers.

After the gloom and darkness,
Then the long golden days,
Feet that idled and faltered,
Roaming in sunny ways.

After death and the dying,
Then the rain on the mound,
Hearts that were grand in living,
Pulseless within the ground.

After the storm and shadows,
After the rain and gloom,
Then the daisies and roses
Blooming about the tomb.

After this weary living,
Sudden silence and rest.
After earth's night and darkness,
Then the joy of the blest.

M. L. C.

Education of our Daughters.

BY MRS. E. G. WHITE.

In the Word of God we find a beautiful description of a happy home and the woman who presides over it: "Her children rise up, and call her blessed; her husband also, and he praiseth her." What greater commendation can be desired by the mistress of a home, than that which is here expressed. The apostle recognizes the importance of the family relations, and the powerful influence of the home. In his epistles he enjoins certain rules upon families. He says of the children, "Let them learn first to show piety at home, and to requite their parents; for that is good and acceptable before God."

Children can be educated to be helpful. They are naturally active and inclined to be busy; and this activity is susceptible of being trained and directed in the right channel. Children may be taught, when young, to lift daily their light burdens, each child having some particular task for the accomplishment of which he is responsible to his parents or guardian. They will thus learn to bear the yoke of duty while young; and the performance of their little tasks will become a pleasure, bringing them a happiness that is only gained by well-doing. They will become accustomed to work and responsibility, and will relish employment, perceiving that life holds for them more important business than that of amusing themselves.

In the fulfillment of their apportioned tasks, strength of memory and a right balance of mind may be gained, as well as stability of character and dispatch. The day, with its round of little duties, calls for thought, calculation, and a plan of action. As the children become older, still more can be required of them. It should not be exhaustive labor, nor should their work be so protracted as to fatigue and discourage them; but it should be judiciously selected with reference to the physical development most desirable, and the proper cultivation of the mind and character.

Work is good for children; they are happier to be usefully employed a large share of the time; their innocent amusements are enjoyed with a keener zest after the successful completion of their tasks. Labor strengthens both the muscles and the mind. Mothers may make precious little helpers of their children; and, while teaching them to be useful, they may themselves gain knowledge of human nature, and how to deal with these fresh, young beings, and keep their hearts warm and youthful by contact with the little ones. And as their children look to them in confidence and love, so may they look to the dear Saviour for help and guidance.

Children that are properly trained, as they advance in years, learn to love that labor which makes the burdens of their friends lighter. This daily employment closes the door to many temptations to which the indolent are exposed. It is to be deeply regretted that the children of the wealthy are not, as a class, educated to useful physical labor. Riches may be considered a misfortune if they lead their possessor to look upon labor as undignified and degrading.

The world is full of young men and women who pride themselves upon their ignorance of any useful labor; and they are, almost invariably, frivolous, vain, fond of display, unhappy, unsatisfied, and too often dissipated and unprincipled. Such characters are a blot upon society, and a disgrace to their parents. They fill no place in the world, but are an incubus upon it.

Many who consider it necessary for a son to be trained with reference to his own future

maintenance seem to consider it entirely optional with herself, whether or not their daughter is educated to be independent and self-supporting. She usually learns little at school which can be put to practical use in earning her daily bread; and receiving no instruction at home in the mysteries of the kitchen and domestic life, she grows up utterly useless, a burden upon her parents.

She spends her time in visiting, gossiping, and in other unprofitable ways, having no aim or object in life, but to get as much pleasure out of it as possible. But let fortune change, let riches take wings and fly away, and she finds herself without resources, with no means of supporting herself, no knowledge that she can turn to any account. She has never learned even to wait upon herself, and is wholly unfitted for the stern realities of life.

A woman who has been taught to take care of herself, is also fitted to take care of others. She will never be a drug in the family or in society. When fortune frowns, there will be a place for her somewhere, a place where she can earn an honest living, and assist those who are dependent upon her. Woman should be trained to some business whereby she can gain a livelihood if necessary. Passing over other honorable employments, every girl should learn to take charge of the domestic affairs of home, should be a cook, a housekeeper, a seamstress. She should understand all those things which it is necessary that the mistress of a house should know, whether her family are rich or poor. Then, if reverses come, she is prepared for any emergency; she is, in a manner, independent of circumstances.

The fashionable waste of time encouraged or tolerated in children, and especially in daughters, lays the foundation for corrupt morals, and an enfeebled body. Fathers and mothers, how are your children coming forth from under your hand? Are you training your daughters aright, laying for them the foundation of virtuous characters, and teaching them that life is not what it is represented to be in novels, but a reality, claiming earnest thought and labor?

Girls should be taught that the true charm of womanliness is not alone in beauty of form or feature, nor in the possession of accomplishments; but in a meek and quiet spirit, in patience, generosity, kindness, and a willingness to do and suffer for others. They should be taught to work, to study to some purpose, to live for some object, to trust in God and fear him, and to respect their parents. Then, as they advance in years, they will grow more pure minded, self-reliant, and beloved. It will be impossible to degrade such a woman. She will escape the temptations and trials that have been the ruin of so many.

A serious error lies at the foundation of the fashionable education of girls; it is the idea that they have no individuality of character, and therefore no need of any special training such as is given to boys in order to prepare them for the battle of life. Many are taught from babyhood that it is ladylike to be helpless, and that it is almost a disgrace to engage in household labor. But, when the tenderly reared daughter of wealthy parents meets with misfortune, and is left without means or friends, and unacquainted with any labor that might keep starvation from her door, then it is that she wakes up, when it is too late, to the terrible mistake of her early life, and the criminal blindness of her overfond parents. Hundreds and thousands of delicately reared women are to-day struggling with poverty and want, who might be independent and happy if they had been taught usefulness and industry in early life.

It is as essential for our daughters to learn the proper use of time as it is for our sons, and they are equally accountable to God for the manner in which they occupy it. Life is given us for wise improvement of the talents we possess. The greater our opportunities, the greater is our responsibility to the Giver of all good gifts. We are God's property, and must render an account of all our actions to him. How poor will our lives appear in his sight if they are destitute of noble, unselfish actions; if they have been spent in idleness, pleasure-seeking, and frivolity.

Adam was placed in glorious Eden as the king of the whole earth; yet there was given him a work to do; the Creator required him to dress and take care of the garden. Thus divine wisdom saw it was best for sinless man to have employment; how much more necessary, then, is it for the fallen race to occupy their time with useful labor, thus shutting the door against many temptations, and guarding against the encroachments of the evil one.

Those who have nothing to do are the most miserable of mortals. It is an unsatisfying life that is guided only by inclination and love of pleasure, in which we look in vain for some generous deed, some earnest, active work, that has blessed the world. In looking over the record of each day, we should be able to find a balance to our account above selfish gratification; something accomplished that elevates ourselves, benefits our fellow-creatures, and is acceptable to God.

—The half of every life is spent in waiting, and the true secret of life is to learn to wait patiently.

"Out West."

SECOND PAPER.

BY MARY L. CLOUGH.

COLORADO is the paradise of the poet and the artist. Its very atmosphere begets in the brain grand fancies, and noble ideals, very different from the feverish conceptions of bilious-tainted genius. Its scenery presents a marvel of magnificent extremes and pleasant surprises. Standing on the pinnacle of naked rock that forms the crest of James' Peak, you look down ten thousand feet upon smiling, beautiful Middle Park, which always reminds me of Rasselas' "Happy Valley."

There lies the queen of the mountain parks beneath your feet! you can roll down a stone that will fall presently a mile and a half below in one of her miniature lakes. There is the glory of waving grass, winding rivers, and flowery meadows; there are her fields of jasper and agate, her hot mineral springs, presumably a panacea for all the ills that flesh is heir to; there are her fifty by one hundred and fifty miles of the fairest and most fertile soil that smiles under the benediction of heaven. Walled in by frowning barricades, over which the snow storms chase each other in July, there she sits smiling and waiting for the sound of the pick and the ax to echo through her sylvan glades, for the completion of the rapidly constructing roads that will open her virgin meadows to the seekers for lovely, fertile homes.

But ah, that will be nothing to her past. Down there, in the dim long-ago, palms rustled, and rainbow-tinted birds beat the balmy air with flashing wings, and all day long the white sands were kissed by the gleaming ripples of the summer sea. We call this region new, dating from our own brief knowledge; but it has lived its life, its people have come and gone, have bought and sold, hurried hither and thither as if the world depended upon their individual effort, even as we labor now. They have sung and laughed and danced may be, been miserable and made moan,—who shall say? They have lived their little day, and passed like a puff of smoke, like the down on the dandelion stem. Their graves are the dust we trample, their substance is in the very rock. Now and then some relic of those prehistoric ages sets the archæologists to dreaming and theorizing, and beyond this we know nothing.

But we may not tarry in the "Switzerland of America," sweet as be her flowers and fair as lie her fields. We have but touched the great West of to-day, and the Pacific road, that master-piece of the nineteenth century, invites us to plunge still deeper into its solitudes.

Running the breakers of the mighty mountains, threading devious passes, winding beneath overhanging precipices, who can describe this journey, who can paint its novelty Echo and Weber canyons, with their world-renowned scenery, have been limned by the artist; but can any brush tint the crest of the pass with the red gold of sunset, touch the foam of the cataract beneath with the white radiance of silver, span it with a miniature rainbow, but leave all else,—rocky bastion, clinging cedars, and dark gorge,—in Plutonian shadow?

From Cheyenne we labor 32 miles up to the summit, dragged by two or three puffing locomotives; we cross the wild Dale Creek canyon on the highest railroad bridge in the world, 8,500 feet above the level of the sea, 640 feet in length, and spanning the canyon at an altitude of 130 feet from its bed. Then we slide down from Sherman to Laramie, 23 miles, without steam, all brakes on, and dashing through miles of snow sheds.

The dizzy road winds through wild and eerie scenes, over swiftly leaping streams, churned into froth among the boulders; across smiling Utah, that land charmed by the Mormon Prophet from a howling wilderness to a fair, broad domain, dotted with plantations and villages,—when Salt Lake City bursts upon the vision, a marvel of romantic scenery, where the buzz of manufacture bewilders the ear, and charming villas delight the eye, where, though detesting the prevailing religion, one must still admire the thrift and enterprise of the "Latter Day Saints." It traverses silver-ribbed Nevada, with her mountains of argentiferous ore, her developing lodes, her miles of tunneling in the heart of the living rock, her millions of bullion shipped annually,—that land where extremes meet, and the forty miles of arid desert contrasts with the beauty of Lakes Tahoe and Mono, set in verdant hills, framed with evergreen forests.

At last the sunny slope of the Golden State is reached,—region of the biggest possibilities, from the giant trees of Calaveras to the mammoth vegetables and luscious fruits of the Santa Clara valley,—the land of dreams and of gold! where sits San Francisco at her "Golden Gate," her spires and domes limned on the smooth mirror of the Pacific, blushing in the rosy sunset. In her port ride ships of all nations, laden with precious cargoes. On her streets are met representatives of every land under the sun; the swarthy East Indian, the yellow-haired Finn, the broad-lipped Kanaka, and the turbaned Turk, elbow each other

on the crowded boulevard. Staring time-tables meet the eye, through lines to Calcutta, Melbourne, Yokohama, Pekin. We have arrived at the Western extreme of the continent, that, like New York, on the other ocean, holds in her hand the tangle of magnetic threads, that, widely diverging, communicate with every nation, and thrill her pulses with the life of the world.

There has, until of late, been a great chasm between the two civilizations of America. A thousand miles of uninhabited wilderness separated the Pacific slope from the out-post settlements of the prairie West, and the breadth of a continent lay between it and the seat of government. The consequence was a loosely-sustained relation between the Pacific States and her sisters. Government interested itself little in behalf of a section so remote and so difficult of access. It became a terra incognita; its people were foreigners. They felt that they were in a manner ostracized, they independently concentrated their attention upon their own affairs. The result has been unprecedented in the annals of improvement; but nothing less than the unflinching loyalty of a people scorning intrigue and treason, prevented a new and powerful republic from springing up behind the rocky bulwarks of the Sierra Nevadas. Now all this is changed. The Pacific Railroad has established a rapid and easy transit across the continent, and brings the two oceans within speaking distance of each other. Frequent visits are exchanged, interest and capital are becoming common; and the metropolis of the Atlantic States shakes hands with her Pacific sister over a stretch of three thousand miles.

But perhaps the best result of this transcontinental highway is the opening up to settlement of the desirable land along the route. This vast country, with its out-lying territories on the north and south, large enough for a dozen European principalities, invites the enterprising pioneer to its domains. Its fertile valleys, valuable timber, mountains of silver and gold, and fields of iron and coal, all offer their riches to the hardy adventurer. As to locality, there is a wide scope of choice, from the salubrious shores of Puget Sound to the semi-tropical clime of Arizona and New Mexico, with every shade of variation between.

Our young men are trooping to this Eldorado, strong with indomitable energy, rich in sanguine hopes. It is the flower of the East and the North and the South, that strike out from the well-worn paths of their fathers, and leave the paternal roof to plunge into a newer country, and win for themselves fortune and a name, where best they are to be found, where all stand upon an equal footing; and the bravest, most patient and industrious, bear away the palm.

Every year the numbers of this army increase. They are hewing down the forests; they are blasting into the heart of the granite mountains; their machinery makes music on the water-courses; they are cultivating farms and planting orchards; they are building cities and towns, the future nuclei of inland trade and manufacture. They bring with them the faith and principles of their people. Their schools, colleges, and churches beautify every hamlet, and the chime of the Sabbath bell rings to the tune of the silver stamps in the mining camps of the Sierras.

Already, learned savants declare there is growing up, between the Missouri River and the Pacific coast, a race of children, far surpassing in physical strength and beauty, as well as in intellectual vigor, the rising generation of the crowded Atlantic and Northern States. This is accounted for by good physiological reasons. Springing from parents who have possessed the courage and endurance to dare the hardships of a new, unsettled country, whose strength of mind and body has been highly developed in the experiment of metamorphosing a wilderness into a garden, whose intellectual faculties have been sharpened by familiarity and constant intercourse with the representatives of every race and sect and people in the world,—for they come from the antipodes to receive the largess of the West,—breathing pure air, eating coarse food, taking much physical exercise, reared in that atmosphere of mental and religious freedom peculiar to a new country, where, amid change and new associations, the old land-marks of bigotry, intolerance, and narrow prejudice have been swept away, and reason holds full sway upon a broad basis, while ideas and creeds become more liberal,—what wonder that the bold-eyed, supple-limbed, brave-hearted child of the West is the coming man of the age.

The very boundlessness of the plains, the magnitude of the alpine ranges, the vast sweep of the forests, have their influence on heart and brain, to broaden the ideas, to elevate the aspirations, to widen the intelligence. Where Nature has done her noblest work and reared her proudest monuments, where God has left the awful impress of his finger, should not Man achieve his noblest possibilities?

A great and noble people, plain of speech it may be, and lacking perhaps some of the polish acquired in the false glitter of polite society, is growing up beyond what was con-

sidered, until of late, our extreme Western border. As a class, they are strong of purpose, lofty in intellect, and firm in rectitude. They will give an impulse to the nation. It will be theirs to exorcise the corruption of politics. They are God's agents to redeem the vices of an age that has retrograded in virtue. They are swarming on the Pacific slope, and in the inland States and territories; and though separated by desert and alps from the throbbing heart of the Republic, their voice is being heard in her councils; and her left arm will one day be the stronger in all that constitutes the true strength of a democracy.

The schools and colleges of the West offer as good inducements as any for general culture. Here are rising our statesmen, philosophers, and inventors, our authors and artists. Even now, Western-born poets are singing the sweet songs of the Sierras, and a new, picturesque literature has sprung up beyond the Rocky Mountains.

That army of young, fearless souls are marshaling for action. They are wielding the tongue and pen in behalf of Right. It is theirs to impart fresh blood, muscle, and sinew to the waning life of a Republic grown sordid and degenerate with over-much success, and vainly aping the unmeaning mummery of titled pageantry, in a country whose proudest boast has been her freedom from so-called aristocracy and pride of birth.

All this fair land, from the fertile, blossoming prairies of Kansas, to where the broad Pacific rolls its blue lone waves, invites young enterprising men and women to its domain. God forbid that the youth of the crowded Eastern cities and villages should be cramped in their mental and physical growth by a narrow existence in the midst of an effete civilization. The West calls for educated young workers, and the demand is always greater than the supply. For the *drone* there is never an opening; but the laborer, who accepts thankfully what offers, and patiently works to secure better things, touches the fairy wand of Fortune.

Business Habits of Women.

THE following excellent paragraphs we quote from *Harper's Bazaar*:—

"The housekeeper who has no business habits makes but a poor appearance beside the one who has them. The latter has a fixed hour and day for every domestic duty; the former has things done when she thinks of it. The one replenishes before an article is exhausted; the other runs round and borrows. The one knows just how long an article ought to last; the other is robbed before her face and eyes. The one makes her 'rags' pay for her 'tins,' and her grease pay for her soap; the other has to give ready money for both commodities. The one has her housecleaning done in May; with the other it always dangles along into July. The one can see a visitor at almost any hour of the day; the other has to hurry and skurry to make herself presentable. The one always has something toothsome in reserve if an unexpected guest must be asked to tea; the other has nothing but an apology. With the one all goes smoothly, noiselessly, pleasantly, and with a smiling face; with the other the jar is always evident, the house and its mistress and its servants are forever in a snarl. The one has business habits; the other has no habits at all.

"Every girl, we think, should be given a knowledge of certain business matters as much as every boy; she should have a sufficient insight into banking to make her independent of the kind services of men. She soon learns naturally the nature of bills and receipts, but she should know also the nature and forms of deeds and writs and leases, powers of attorney, contracts, bills; she should know what steps to take to get out of business difficulties if she gets into them; she should be taught the manner in which to maintain her rights with firmness and without anger, so that in extremity she may not be left at the mercy of any with whom she deals, and who may be disposed to cheat her; and, as a preliminary step, she should be taught to file her papers alphabetically, and her letters by date. If, in addition to this, every father would give his daughters in early girlhood a fixed allowance in so much money, representing what he can afford for their expenditure, and demand that they shall keep a strick account of it all, subject to his own or to their mother's inspection, he will have established a beginning of business habits that may at some after-day be of infinite service. Nothing is more absurd than the customary accounts of one of these young ladies who undertake the matter without assistance, and with no knowledge of either double or single entry, but who have a plan of their own of multitudinous entry—debts and credits in the same column, and an indiscriminate happening of the words 'amount brought forward,' or 'amount carried up,' without any specific sum against them, as if they were like the cabalistic characters with which every physician prefaces his prescriptions, and the whole about as undecipherable to any one obliged

to scan it as if it were set down in Chinese. But a very few lessons, a very few hints, indeed, from a father or brother competent to give them, will reform the whole matter, and make the way of those accounts so clear that she who runs them up may read them—which she never could do before.

"Yet it is not merely as a matter of money, as a matter of properly plain and clear accounts, as a matter of preserving property, or of being ready at call to earn her own livelihood, that it is important for every woman to have business habits. It is quite as valuable to her as a means of general comfort during every day of her life, be she rich or poor. Without them she does nothing decently or in order; with them she is mistress of every situation; she controls the unknown, provides for the unexpected, and lifts herself beyond the need of the kindly contemptuous assistance of those who have been wiser than she, and have made themselves by means of business habits all that she might be. Without them she is only a waif and drift, cared for and kept, in fact, only by what may be described as the business habits of the great universe, which, in its foresight, looks out for the apparently useless atom as much as for races and continents, while with them she might, if only infinitesimally, assist in its work."

The Cynic.

THE Cynic is one who never sees a good quality in a man, and never fails to see a bad one. He is the human owl, vigilant in darkness and blind to light, mousing for vermin, and never seeing noble game.

The Cynic puts all human actions into only two classes—openly bad, and secretly bad. All virtue, and generosity, and disinterestedness, are merely the appearance of good, but selfish at the bottom. He holds that no man does a good thing except for profit. The effect of his conversation upon your feelings is to chill and sear them; to send you away sour and morose.

His criticisms and innuendoes fall indiscriminately upon every lovely thing, like frost upon the flowers. If Mr. A. is pronounced a religious man, he will reply: yes, on Sundays. Mr. B. has just joined the church: certainly; the elections are coming on. The minister of the gospel is called an example of diligence: it is his trade. Such a man is generous: of other men's money. This man is obliging: to lull suspicion and cheat you. That man is upright: because he is green.

Thus his eye strains out every good quality, and takes in only the bad. To him religion is hypocrisy, honesty a preparation for fraud, virtue only a want of opportunity, and undeniable purity, asceticism. The livelong day he will coolly sit with sneering lip, transfixing every character that is presented.

It is impossible to indulge in such habitual severity of opinion upon our fellow-men, without injuring the tenderness and delicacy of our own feelings. A man will be what his most cherished feelings are. If he encourage a noble generosity, every feeling will be enriched by it; if he nurse bitter and envenomed thoughts, his own spirit will absorb the poison, and he will crawl among men as a burnished adder, whose life is mischief, and whose errand is death.

He who hunts for flowers will find flowers; and he who loves weeds may find weeds.

Let it be remembered that no man, who is not himself morally diseased, will have a relish for disease in others. Reject then the morbid ambition of the Cynic, or cease to call yourself a man.—*Beecher.*

The True Gentleman.—He is above a low act. He cannot stoop to commit a fraud. He invades no secret in the keeping of another. He takes selfish advantage of no man's mistakes. He is ashamed of innuendoes. He uses no ignoble weapons in controversy. He never stabs in the dark. He is not one thing to a man's face and another to his back. If by accident he comes into possession of his neighbor's counsels, he passes them into instant oblivion. He bears sealed packages without tampering with the wax. Papers not meant for his eye, whether they flutter in at his window, or lie open before him in unregarded exposure, are secret to him. He profanes no privacy of another however the sentry sleeps. Bolts and bars, locks and keys, bonds and securities, notices to trespassers, are not for him. He may be trusted out of sight—near the thinnest partition—anywhere. He buys no office, he sells none, intrigues for none. He would rather fail of his rights than win them through dishonor. He will eat honest bread. He tramples on no sensitive feelings. He insults no man. If he has a rebuke for another, he is straightforward, open, and manly. He cannot descend to scurrility. Billinsgate does not lie on his track. Of woman, and to her, he speaks with decency and respect. In short, whatever he judges honorable he practices toward every one. He is not always dressed in broadcloth.

"Some people," says a distinguished bish-

op, " think a gentleman means a man of independent fortune—a man who fares sumptuously every day; a man who need not labor for his daily bread. None of these makes a gentleman—not one of them—nor all of them together. I have known men of the roughest exterior, who had been used all their lives to follow the plow and to look after horses, as thorough gentlemen in heart as any nobleman who ever wore a ducal coronet. I mean, I have known them as unselfish, I have known them as truthful, I have known them as sympathizing; and all these qualities go to make what I understand by the term 'a gentleman.'"—*Sel.*

—Many a discouraged mother folds her tired hands at night, and feels as if she had, after all done nothing, although she has not spent an idle moment since she rose. Is it nothing that your helpless little children have had some one to come to with all their childish griefs and joys? Is it nothing that your husband feels "safe" when he is away to his business, because your graceful hand directs everything at home? Is it nothing when his business is over, that he has the blessed refuge of home, which you have done your best to brighten and refine? O weary and faithful mother, you little know your power when you say, I have done nothing. There is a book in which a fairer record than this is written over against your name.—*Sel.*

—Curiosity in children is but an appetite after knowledge. I doubt not but one great reason why children abandon themselves wholly to silly pursuits, and trifle away all their time insipidly, is because they find their curiosity balked, and their inquiries neglected.—*Locke.*

—It is the opinion of the doctor that the lawyer gets his living by plunder, while it is the opinion of the latter that the doctor gets his by pill-age.

—True philosophy consists in adapting ourselves to circumstances. If we cannot have that which we want, we should make the most of that which we have.

—Men are frequently like tea—the real strength and goodness is not properly drawn out until they have been in hot water.

—There are two things inseparable from lying, many promises and many excuses.

Popular Science.

A New Telegraphic Wonder.—The telephone, which recently created so great an interest by its wonderful power of transmitting speech with electric rapidity, has now become so common an instrument that it can be seen in practical operation in almost any large city, and the people have ceased to look upon it with that amazement which its first appearance excited. Just now, however, another instrument is announced which possesses still more remarkable powers. It is the invention of Dr. Rosapelly and Prof. Marey, and consists of an ingenious apparatus for automatic shorthand reporting. The instrument makes for each vocal sound a distinct character, combining, with the speaker, the various vocal sounds into words. The characters are very distinct, and can be read by any one after a little study. Thus it is now possible, by the aid of electricity, not only to transmit speech to almost any distance, but for a short-hand report of a speech in New York to be made upon the other side of the continent with automatic exactness.

Heat, Light, and Actinism.—Dr. Draper disputes the commonly received idea that the rays of the sun may be separated into heat, light, and actinic rays.

"The great service which the diffraction spectrum has rendered to science is the abolishment of all these imaginary independent existences—heat, light, actinism, etc.—and the substitution for them of the simpler conception of vibratory motions of the ether. The only difference existing among the radiations is in their wave lengths, or, what comes to the same thing, in their times of vibration. The diversity of effects produced depends on the quality of the surface on which they fall. If on a dark surface, and the more so in proportion to its blackness, they engender heat; if on the retina, they are interpreted by the mind as light; if on photographic preparations, they produce decomposition, designated actinic effects.

"Heat, light, actinism, are, then, not natural principles existing independently of each other, but effects arising in bodies from the reception of motions in the ether, motions which differ from each other in their rapidity. Of those that the eye can take cognizance of, the most rapid impart to the mind

the sensation of violet light; the slowest, the sensation of red; and intermediate ones, the intermediate optical tints. Colors, like light itself, are nothing existing exteriorly. They are merely mental interpretations of modes of motion in the ether, and in this represent musical sounds, which exist only as interpretations by the mind of waves in the air."

A Pretty Chemical Experiment. — The following little experiment is easily performed, and will afford no little entertainment to those not acquainted with chemical reactions :—

Select two or three deeply-colored leaves of the red cabbage; cut them into small pieces, put the pieces into a vessel, and pour boiling water on them. After allowing them to stand for an hour, pour off the liquid portion and strain it through a fine cloth. Now take four clear glass test-tubes, or wine-glasses, and arrange them in a row. Into the first put half a teaspoonful of strong vinegar. Put an equal quantity of a strong solution of soda into the second, and an equal quantity of solution of alum into the third. Leave the fourth empty. The quantity of liquid in the others will be so small that it will not be observed if put in before the glasses are brought out. Upon pouring a portion of the infusion of cabbage into each of the glasses successively, a novel variety of effects will be produced. In the first glass the fluid will be red, in the second green, in the third still different, and in the fourth of natural color.

Marvelous if True.—Mr. Edison, of Newark, N. J., the inventor of the electric pen and many other ingenious electrical machines, claims to be able to construct an instrument which will totally eclipse the telephone in its marvelous acoustic powers. According to report, Mr. E. claims for his invention the power to retain spoken words for a length of time and then reproduce them with perfect accuracy. Thus, a person might utter a sentence to-day, and, fifty years hence, this wonderful instrument would repeat it, when called upon to do so, preserving even the natural tones of the voice in all their purity. Such an instrument ought to be kept in good company when prepared for business, as it might be very damaging to the present generation to have one of these patent eavesdroppers turn out an avalanche of scandal, small talk, or profanity, a century hence.

Are Ants Civilized? — These tiny creatures have a language by which they can impart to each other information of a very definite character, and not merely general signals, such as those of alarm. It has been found that ants fetched by a messenger seem, when they arrive at the spot, to have some knowledge of the task which is awaiting them. Their principal organs of speech are doubtless the antennæ; with these, when seeking to communicate intelligence, they touch each other in a variety of ways. There is a possibility that they may have a language of odors, for the various scents given off by them are easily perceptible. Under the influence of anger it becomes very intense. In battles how, save by scent, can they distinguish friend from foe? After a lapse of several months a former companion will be received kindly into the nest, but a stranger is killed.

More wonderful than their intelligence is their organization. If separate they would be helpless and probably soon become extinct. Mr. Belt observed a marching column of *ecitons* in the primeval forests of Nicaragua. A dense body of ants, four yards wide, moved rapidly in one direction, examining every cranny and fallen leaf. At intervals, larger and lighter-colored individuals would often stop and run a little backward, apparently giving orders. On the flanks and in advance of the main body, smaller columns would push out, which pursued the cockroaches, grasshoppers, and spiders in the neighborhood. A grasshopper seeking to escape would often leap into the midst of the ants. After a few ineffectual jumps, with ants clinging to its body, it would soon be torn to pieces. Spiders and bugs which climbed to the tops of trees were followed, and shared a like fate. In Nicaragua the vegetarian ants eat up trees and carry off the leaves, to use as a manure, in which grows a minute species of fungus, on which they feed. They evince a mutual sympathy and helpfulness, which to an equal extent can be traced in man alone. Mr. Belt placed a little stone on one to secure it. The next ant that approached ran back in an agitated manner and communicated the intelligence to others. They rushed to the rescue: some bit at the stone, and tried to move it, others seized the prisoner by the legs and pulled. They persevered until they got the captive free.—*Quar. Jour. of Science.*

THE

HEALTH REFORMER

BATTLE CREEK, MICH., DECEMBER, 1877.

J. H. KELLOGG, M. D., EDITOR. TERMS, $1.00 A YEAR.

Retrospect and Prospect.

AGAIN we are reminded by the calendar that we have nearly arrived at the conclusion of another year. This number concludes the twelfth volume of the HEALTH REFORMER. In reviewing the work of the year in connection with the journal, we see much that we would gladly have improved had not other urgent duties so monopolized our time as to make it impossible. All through the year our work has been done, necessarily, in the most hurried manner. Nevertheless, we hope that we have not utterly failed to meet the promise made in the initial number of the volume, to make this the best volume of the HEALTH REFORMER ever published, by the aid of the able contributors whose writings have added so greatly to the interest and usefulness of the journal.

The admirable illustrated "Life Sketches" by Eld. White added a new feature to the journal which was of universal interest. We have regretted exceedingly, as our readers have undoubtedly done likewise, that his excessive labors so impaired his health as to make the relinquishment of literary labor necessary, and thus occasion an interruption of the series. We were especially sorry that the series should be broken in the midst of the sketch of his own active and interesting life, and we hope that his returning health will soon enable him to renew his contributions to these columns.

Mrs. White's articles on various practical subjects relating to some of the most momentous subjects with which the minds of sober, thinking men and women of the present day are occupied, have been of inestimable value to thousands of families. Her words of advice and instruction are highly valued by all who have had the privilege of perusing her writings in the REFORMER during the last year. We expect that Mrs. W. will continue her contributions as heretofore, and we feel no hesitation in assuring our readers that they will find in them instruction worth to them many times the price of the journal.

We have in mind many improvements for the REFORMER during 1878, and hope to find, by partial relief from other burdens, more time to devote to enriching its columns with the latest and best thoughts on all of the various questions considered in its several departments.

The REFORMER has for some years enjoyed the largest patronage of any health journal in America, and, probably, in the world; yet we are not yet satisfied. There are many millions of unenlightened human beings even in this favored country; and we shall never feel contented until we have done all in our power to reach as many as possible of the benighted masses, and open up to them new and better views of their relations to Nature's laws, and point them to the better way by means of which they may, if they will, escape the largest share of the disease and suffering which add so greatly to the burdens of life. We hope, by the aid of the friends of reform who are interested in this philanthropic work, to reach in the next year many thousands of new readers, and shall earnestly endeavor to do all that can be done by persevering effort to maintain and increase the interest and usefulness of the journal in the field of labor to which it is devoted.

War of the "Pathies."

FOR more than two thousand years there have been "sects" in medicine, as in theology, and the controversy between opposing theories has been almost as warm, though,

fortunately, not so sanguinary—at least to the participants—as that arising from theological differences. Twenty centuries ago the great subject of dispute was whether the solids or the fluids were the primary seat of disease. In modern times the greatest controversy has been between *similia similibus* and *contraria contrariis curantur*.

That bitter controversies should be waged between members of a profession ostensibly devoted to the saving of human life and the amelioration of human suffering, has always been a cause of deep regret to true philanthropists; and one of the surest evidences of material progress at the present day is to be found in the very apparent subsidence of this controversial tendency. Not that discussion should be discouraged, for nothing is more favorable to progress in any science than sharp and pointed criticism; but a bitter and acrimonious warfare is always detrimental to candid investigation. A few years ago allopathy and homeopathy were arrayed against each other like opposing armies, and carried on a most unrelenting conflict. Now, if there is occasional skirmishing, it is only between the attenuated ghosts of the former combatants. The name "allopathy" has been utterly repudiated by those to whom it was formerly applied. Homeopathy, although still clung to in name by its professed adherents, has little more than a theoretical existence. Very few even of those physicians who call themselves homeopathists now confine themselves to the highly potentized triturations and dilutions of the visionary founder of the system, Hanneman. Thus the two opposing elements are becoming more and more alike, and at some not very remote period in the future may actually unite into a friendly medical brotherhood.

A late number of the London *Lancet*, one of the leading "regular" medical journals of the world, contains a significant article which gives evidence of a great change in medical opinion on both sides respecting the points at issue. The writer, Dr. B. W. Richardson, F. R. S., after adverting to the origin of homeopathy says that "many of the allopathic physicians have renounced all the heresies of the past in the treatment of acute diseases; while homeopathic physicians have, on their side, almost entirely abandoned the use of globules, and have substituted doses in tangible form, their rule being to give a dose sufficiently large to effect its purpose, but not so large as to discomfort the patient. Both schools now use alike anodynes, aperients, opiates, anesthetics, tonics, galvanism, hydropathy, Turkish bath, and mineral waters. In short, we define our practice as rational medicine, including the application of the law of contraries, but *plus* the application of the law of similars."

Holiday Gormandizing.

THE season for holiday feasting having again arrived, we cannot refrain from sounding a note of warning against the foolish custom which almost universally prevails, of spending Thanksgiving, Christmas, and New Year's, days set apart for rest, recreation, and consideration of the bounteous blessings of Providence, in sensuous gratification of depraved appetites; indeed, in plainer and truer phrase, in gluttony and gormandizing. And this we do from a sense of duty, notwithstanding our conviction that whatever we may say on the subject will, possibly, scarcely modify the custom in a dozen instances.

Physicians generally expect a decided increase of business the day after Thanksgiving or any other holiday. Headache, indigestion, nervousness, apoplexy, and kindred disorders which have a close relation to the digestive organs, are then invariably increased by the dietetic abuses to which the majority of American stomachs are subjected. In many instances the lowering of the vital powers occasioned by excessive indulgence of the appetite, has exposed the system to invasion by such diseases as pneumonia, pleurisy, and other acute diseases, which have proved fatal on account of the diminished resisting power of the patient, when the same diseases would have made little impression upon the system, had they occurred at all, if the patient had not prepared himself for them by his transgression of Nature's laws.

The transient pleasure afforded by the illegitimate gratification of the senses in no way compensates for the inevitable suffering which must follow. Nature may be very long-suffering, but for every transgression of

her laws she is sure to mete out a commensurate punishment in the form of disease. The malady may appear in the form of an acute febrile attack, or it may be of the nature of a chronic ailment; but it is certain to come sooner or later.

A person may possibly find some excuse for excessive labor, for depriving himself of proper rest. An emergency may arise demanding a little extra work to prevent great loss or suffering. Or, unfaithfulness upon the part of others may bring a disproportionate burden upon a single individual. These are misfortunes which cannot always be prevented or remedied, no matter how much they may be regretted; but there can be no such excuse for excessive eating. No emergency will compel one to eat more than the wants of his system demand. While one is injuring his own physical frame by overlabor, he may be doing others a great amount of good, which may more than counterbalance the injury which he does himself; but when an individual gluttonously overworks his digestive organs he is not only injuring himself thereby, but is also defrauding others of the good which he might do them by expending his vital forces in some useful direction, while doing no one any possible good.

If there are any days in the whole year when the diet should be wholesome, unstimulating, and easily digestible, Thanksgiving, Christmas, and New Year's are the ones. Upon those days one ought to possess the greatest clearness of mental vision of which his mind is capable. His mental faculties ought to be lucid and unclouded, so that he might be prepared to contemplate with an appreciative spirit the blessings and bounties of kind Providence so richly bestowed during the year.

New Method of Embalming.—Dr. Lowell, of Brooklyn, N. Y., has invented an inexpensive method for preserving dead bodies from decomposition, which promises to be very serviceable on account of its simplicity and efficiency. The process consists of injecting the body with a solution of chloride of zinc through either an artery or a vein. The vessel containing the solution is elevated above the body to be injected, and thus made to act upon the principle of the fountain syringe, so that it requires little or no attention after the injecting tubes are adjusted. Four or five gallons of the fluid are employed.

Dangers of Illuminating Gas.

ILLUMINATING gas possesses dangerous properties of which many persons are quite unaware. All are familiar with the fact that when mixed with air it is violently explosive, and that when inhaled it produces suffocation; but all are not acquainted with the fact that the worst evils which result from its use are the formation of poisonous products in its combustion. Carbonic acid, or carbon di-oxide, is one of these products, and though not violently poisonous, it contaminates the air, and by replacing oxygen renders it unfit for respiration. By far the most deleterious of all the results of combustion of gas is sulphuric acid, or oil of vitriol. The coal of which gas is manufactured always contains sulphur, often in very considerable quantities. By combustion sulphuric acid is formed, and escapes into the air of the room with the other products of oxidation. Unlike carbonic acid, sulphuric acid is one of the most powerful and corrosive of all gases. Unless rapidly removed from the room by free ventilation, it becomes a very serious cause of irritation of the delicate mucous membane of the eyes, and especially of the air passages. Persons having weak lungs, and particularly consumptives, should never be exposed to the injury sure to result from the inhalation of air contaminated by this very irritating product.

Prof. Church relates in the *Chemical News* an incident which is a good illustration of the injurious effects which may result from this source. According to the Professor's account, the leather bindings of the books on the upper shelves of a large public library were so corroded by the action of the oil of vitriol, resulting from the burning of gas in the apartment, that they fell off from the books. The librarian sent them to him for examination, and upon investigation the leather was found to be as brittle as though it had been burned by fire; and chemical analysis showed that it contained more than one-twelfth of its

weight of oil of vitriol, which had been formed in the manner indicated.

One of the most noticeable features of the improvements at the Sanitarium is the introduction of a large gas machine of the most improved form, by means of which a gas can be manufactured which is wholly free from sulphur compounds or other irritating products. The gas made by this machine is not only free from noxious elements which give rise to poisonous compounds in its combustion, but is also much less dangerous before combustion, and yields a much better light than ordinary gas.

A New Theory of Contagious Disease.

THERE has been a great amount of discussion concerning the nature of the contagious matter by which certain diseases are communicated, and no small amount of patient study has been devoted to the subject. Dr. B. W. Richardson, who has done a vast amount of useful work for the improvement of sanitary science, has for several years been pursuing investigations in this direction, as the result of which he comes to the conclusion that "the secretions of the animal body are the sources of the septinous [contagious] diseases, and that the latter are all of glandular origin; that in every case of disease the poison producing it is nothing more and nothing less than a modified form of the salivary, gastric, or some other secretion. The diseases so produced are small-pox, measles, scarlet fever, diphtheria, typhus, yellow, hospital, typhoid, and puerperal fevers, erysipelas, cholera, ague, glanders, boils and carbuncles, and infectious ophthalmia.

"So long as a person is affected with these organic poisons and is giving off vapor, he is poisonous. The poisons are mechanically carried and distributed by the vapor. They are harmless in the dry state, but commence to resume their activity in water. They may all be destroyed by extreme dilution, by heat, by exposure to moist oxygen, to chlorine, iodine, bromine, sulphurous acid, and nitrous acid in less degree. Bright sunlight is a potent means of their destruction. They are preserved by cold, and by sulphur, creosote, and arsenic, so that they keep their active properties. They do not multiply like germs, but each particle possesses the property of converting certain secretions of the living animal into itself. The poison may travel as dry, solid matter, in sewage, or be wafted through the air, or in linen saturated with secretions, or may exist in water or in watery vapor."

Zinc Poisoning.—The public cannot be too often warned against the dangers from water poisoning to which they are exposed. Every one is now familiar with the injurious properties acquired by water in contact with lead; but few have become aware that the contact of water with a zinc surface is almost equally dangerous.

Not very long ago the public were informed through various channels that the great *desideratum*, a cheap and harmless water conductor, had been discovered in galvanized iron pipe; and thousands of persons have adopted this kind of pipe for the purpose of water carriage. It has been determined, by actual experiment, that this kind of conductor is very unsafe and utterly unfit for use; since the zinc with which the iron is coated is readily dissolved by the water in passing through, which thus becomes contaminated.

Iron pipe without any kind of protection is probably the best sort of conductor for common use now obtainable. All that is necessary is to let the water run a short time, so as to allow the portion which has become contaminated with rust to escape.

Of course the same objection which is made to the use of galvanized iron pipes applies to all kinds of vessels for containing water made of the same material or of zinc. The *Metal Worker* gives the following testimony on this subject:—

"In deciding the question of whether the salts of zinc are poisonous or not, facts are worth a great deal more than theories. We have frequently called attention to instances of zinc poisoning from the use of water conveyed through galvanized iron pipes; and a number of such cases have come under our own observation. We have also produced the first symptoms of zinc poisoning in ourselves by drinking, for purposes of experiment, water contaminated by contact with

zinc surfaces. We now learn of a case which, though not the first of its kind, is interesting and should put workers in sheet metal on their guard. A stove dealer in Hartford has died of a slight cut made in one of his fingers by a piece of ordinary sheet-zinc. The zinc inflicted a poisonous wound that in a few hours affected the whole circulation, and baffled the efforts of physicians who were then summoned. Oxidized zinc, which is found in numberless houses, should therefore be handled carefully. Zinc oxidizes readily, especially in damp places, and we think it safe to assert that all the salts of that metal are poisonous. Care in handling sheets is desirable under all circumstances."

Simple Way to Ventilate.—No problem is more vexatious to the student of sanitary science than a perfectly satisfactory plan of ventilation which will work efficiently under all conditions. With a small dwelling there need be little difficulty, as the air will find its way in if there is a suitable opening made for it. The greatest obstacle to be overcome is the production of draughts of air when a window or door is opened, which exposes the occupants of the room to danger of taking cold. Dr. H. N. Dodge sent to the *Scientific American* the following description of a very simple device which would seem to answer the purpose admirably during cold weather :—

"Nail or screw a neat strip of wood, from one to two inches high, upon the window sill, just inside of the sash and extending entirely across from one side of the window frame to the other. Upon the top of this strip fasten a piece of ordinary 'weather strip,' so that there will be formed an air-tight joint between the 'weather strip' and the lower sash of the window, whether the latter is shut down tight or raised an inch or two, the lower cross-piece of the sash sliding on the rubber of the 'weather strip' as the sash rises. With this simple fixture in place, the lower sash may be raised enough to admit a stream of air between the lower and upper sashes, where they lap over each other at the middle of the window, without admitting the least air at the window sill. The air admitted between the sashes is thrown directly up toward the ceiling, and there mixes with the heated air at the upper part of the room. The room is thereby ventilated in a thorough and agreeable manner without draughts of cold air upon the persons in the room. The fixture should be applied to several windows in the room. The amount of ventilation may be regulated by the distance that the lower sash is raised. This arrangement is cheap, simple, and effective."

Healthfulness of Fountains.—Artificial fountains afford one of the most efficient means of beautifying a lawn in front of a fine residence or a public building; and, it appears, also play a not unimportant part in the purification of the air by the production of ozone, one of the most powerful deodorants and disinfectants known. This fact was recently made known to the world by a scientific gentleman of England, who says :—

"A water-fountain may be regarded as a hydro-electric machine, the friction of the water issuing through the jets developing electric action, materially assisted by the conversion of the spray into aqueous vapor. I would suggest that this fact should be prominently brought before municipal bodies, to induce them to erect fountains in all available places in large cities as sanitary agents. They might prove highly beneficial in crowded localities."

New Mode of Slaughtering.—A Scotchman has devised a method of slaughtering animals which is certainly preferable to the old-fashioned method. He places a bit of dynamite the size of a thimble on the animal's head and explodes it with a fuse or an electric current. The animal dies instantly without a struggle. Although we do not encourage the slaughtering of animals, if the poor brutes must be killed, we would have them butchered with as little delay and suffering as possible.

Diphtheria.—Under the methods of treatment in vogue in many places, this is one of the most fatal of all diseases when it assumes a malignant type. A very large percentage of patients die. When treated according to the plan described in the first article in this number, nearly all recover. All should read the article and call attention to it.

DIETETICS.

"Eat ye that which Is Good." As a Man Eateth, so Is he.

Tapioca.—A writer in a scientific journal says that "this elegant and delicate starch is the product of a plant that is cultivated very extensively in the Malay Peninsula, where its culture is almost entirely in the hands of the Chinese. The tubers of the plant (*Manihot utilissima*), which weigh on an average from ten to twenty-five pounds, are first scraped and then carefully washed; after which they are reduced to a pulp by being passed between rollers. This pulp is carefully washed and shaken up with abundance of water, until the fecula separates and passes through a very fine sieve into a tub placed beneath. The flour so obtained is repeatedly washed, and then placed on mats, and bleached by exposure to the sun and air. It is finally converted into the pearl tapioca of commerce by being placed in a cradle-shaped frame covered with canvas; it is slightly moistened and subjected to a rotary motion, by which means it is granulated. It is next dried in the sun, and finally over the fire in an iron pan greased with vegetable tallow, and is then ready for the market."

Eastern Cookery.—The *Dietetic Reformer*, of England, quotes the following from the London *Daily Telegraph*:—

"If we inquire into the *rationale* of Eastern cookery we shall find it guided by two cardinal rules. The dishes are in the main of a vegetable character. A genuine Eastern curry has very little meat in it indeed. There is any amount of rice, mango, and other fruits and herbs, but of meat there is barely as much as an English girl of eighteen will take for her breakfast after a fatiguing ball. Similarly with Eastern drinks. The true Oriental cannot be persuaded to touch either wine or spirits under any pretense, and even the European resident soon finds out that a lemon squeezed in water is a most wholesome drink.

"The old system of living has, of late, become thoroughly discredited. If there is one thing which the public wishes to know more than another, it is what it ought to eat and drink. Our English doctors are expert at curing when we are unwell, but do not pay much attention to the more important half of medicine, which is to instruct us how to keep in health. In China the physician is sometimes paid a regular fee for each day that the patient stands in no need of his services, and if the reports of travelers are to be believed, what may be called the theory of hygiene is more advanced in the Celestial Empire than among ourselves.

"There can be no doubt whatever that if people were only careful enough of what they eat and drink, sickness would be diminished by more than fifty per cent. The simple fact is that the majority of Englishmen habitually overeat. This is partly, no doubt, a national fault. The Americans and Germans smoke to excess, the Russians and the Swedes drink to excess, and the English eat to excess; while other nations have other faults we need not specify. On the other hand, the overeating of the Englishman is to a great extent due to the defects of his cookery. The fact is that the cookery of a nation is a most important factor in its health and prosperity.

"Some years ago a wealthy brewer was reported to be lying at the point of death. A friend, a country gentleman of the good old school, looked in upon him to cheer and console his dying moments. 'It is all up with me,' the moribund brewer is reported to have said mournfully; 'I have had four doctors down from London, and I am as bad as ever I was.' 'Doctors!' retorted his friend, 'get rid of your doctors, and try a new cook.' The old gentleman meditated on the advice, took it, and rode to hounds years afterward. We should all of us be healthier and live longer if we were more careful of what we eat and drink."

Rice—Its Preparation.

MANY persons who have eaten rice all their lives have often wondered how the little pearly grains were made so smooth and white, and will be pleased to read the following abstract of a description of the process, which we clip from a scientific cotemporary:—

"When the rice is ready for the harvest, it is cut by hand about 12 inches from the ground, and laid across the stubble for two days to cure. It is then tied into sheaves and put into small cocks in the field to more thoroughly dry. After a few days it will be

ready to be carried to the barnyard, where usually the thresher is situated, and put into stacks, where it remains until the owner is ready to thresh it out. In some localities it is only removed from the fields daily in sufficient quantities to supply the thresher, which is almost always a frame building, one and a half stories, with high shingle roof, filled with the necessary machinery for separating the rice from the straw. The usual motive power is steam, the boiler and furnace of which should be placed outside the main building and encased in brick. The smoke-stack is frequently of brick, at least forty feet high, and placed at least fifty feet from the building, with an underground flue running to the furnace. This is the best and safest construction; but sometimes it is not practicable, and then an iron smoke-stack is substituted, and when that is the case the main building and boiler house should both be covered with metal, and the exhaust steam not allowed to be vented into the smoke-stack, as it causes to be thrown out a volume of sparks, not only endangering buildings, but also any stacks of rice that may be in the yard or on flats near by. This evil is supposed to be obviated by placing a spark arrester in the smoke-stack; but the experience of practical machinists is that they cannot be recommended as safe, and therefore should be avoided.

"Rice straw is a good forage for animals, and valuable as a fertilizer for high land crops; but where it is not wanted for such purposes, it is much used for fuel in the furnace, and in the vicinity of Savannah, Ga., a considerable amount is used in a paper factory, as it is found to be valuable in the manufacture of that article, which is then frequently turned into 'genuine Havana cigars.' When it cannot be utilized by some of the above methods, it is burnt on the plantation, and the ashes applied as a fertilizer to the land.

"When rough rice is sent to mill to be at once pounded, elevators are lowered into the hold of the vessel, and the rice taken out and carried into the mill by horizontal screws, and at once elevated to the highest floor, and run through screws which take out all rubbish, such as bits of stick or straw, and sand. It then passes slowly into large millstones, six feet in diameter, revolving 120 per minute, and set so as not to break the grain of rice, but to cause the hull to split off. From the stones it passes through a fan, which blows the hull or chaff into an apartment, from which it discharges itself by a spout to the outside of the building, and is at once removed. The rice is carried from the fans to bins over the mortars. These mortars hold about four bushels each, and are made of wood, egg-shaped, large end down, lined with Russia iron. The pestles are pieces of timber 8x12 inches, ten feet long, shod with a heavy iron boot, and are lifted by arms from the pestle shaft in rear, and dropped about thirty inches into the rice in the mortars. This pounding continues from one to two hours, according to the quality of grain, which reduces to flour a skin or coating that was left on it by the stones. It is then emptied out of the mortars, and carried by elevators to the upper part of the mill, and passed through screws, which take nearly all the flour off. It is again elevated to the upper floor to screws which separate it into three qualities—whole, middling, and small—and then passes to the brushes. The brushes are cylindrical wooden drums, varying from two to three feet in diameter, and in length from six to ten feet. They are placed on end, the spindles running through an iron bar, and long enough to pass the floor, so as to be easy of access for oiling; as, before this plan was adopted, the spindles could not be got at while working, and have been the cause of fires. This drum is covered lengthwise with strips of sheepskin, wool side in, about six inches wide and eighteen inches long, backed on one side only to the drum, each slip lapping a little the one adjacent to it. The cylinder is then inclosed by a wire screen firmly screwed in position. The rice from the fans passes between the wire screen and the skins. The brushes when working revolve, the largest 300, and the smallest 450, per minute. This motion causes the loose edges of the skin to fly off and rub the grain against the wire screen, driving any flour on it through the screen, and polishing the rice. As it is brushed according to its grade of whole, middling, or small, as previously separated by the screens, it so passes by spouts to tierces prepared for its reception, standing each on a platform to itself, so arranged on a shaft underneath as to give them a slight jerk up and down, which packs the grain as it falls into the tierce. As soon as it is full, it is removed, the head put in, branded, and rolled into the shipping shed, ready to be sent to market."

Tea and Indigestion.—Thousands of tea drinkers wonder why they suffer so often with sick headache. The solution of the mystery is found in the fact that tea-drinking is a certain cause of dyspepsia when long continued. The tannin which abounds in the infusion of tea leaves precipitates the gastric juice, and so produces indigestion.

FARM AND HOUSEHOLD.

Devoted to Brief Hints for the Management of the Farm and Household.

—Two hundred and nine feet on each side make an acre within an inch.

—A table-spoonful of ammonia in one gallon of warm water will restore the color of carpets.

—Charcoal made from ears of ripe corn is found to promote health and increase the production of eggs when fed to fowls.

—Alum and plaster of Paris, mixed with water and used in the liquid state, form a hard composition and a useful cement.

—A table-spoonful of glue dissolved in a gallon of water is an excellent food for geranium plants. It should be applied once in a week or two.

—To clean feathers, cover them with a paste made of pipe-clay and water, rubbing them one way only. When quite dry, shake off all the powder and curl with a knife.

—Dry buckwheat flour, if repeatedly applied, will entirely remove the worst grease spots on carpets or any other woolen cloth, and will answer as well as French chalk for grease spots on silk.

—To renew manuscripts, take a hair pencil and wash the part that has been effaced with a solution of prussiate of potash in water, and the writing will again appear, if the paper has not been destroyed.

—To beeswax leaves, first press them between books or paper till perfectly dry; then iron them on several thicknesses of brown paper with a moderately-hot iron, touching the beeswax once for every leaf; iron first on the right side, then on the other; and spread on a table to dry, not letting them touch each other.

A Convenient Cooking Apparatus.—A Swiss journal gives the following account of a novel cooking stove :—

"Herr Boefinger, an ingenious gentleman of Heilbronn, has invented what he calls a *Patentirtepetroleumkochapparat*—in plain English, a patent petroleum cooking apparatus, which possesses the peculiar quality of lighting itself at any specified hour. The machine is furnished with an indicator, the finger of which can be turned to the appointed time, and when the time arrives the fire begins to burn, the water to boil, and the meat to roast. A man who wants an early breakfast, supposing him to be the fortunate owner of a *Patentirtepetroleumkochapparat*, has thus only to arrange matters over night, set the indicator, and on rising next morning he will find everything ready without the intervention of a probably sleepy and difficult-to-be-awakened servant. This admirable invention is exactly the thing for the lady who advertised a short time since for a deaf and dumb cook."

Covering Strawberry Beds.—In covering strawberry beds there is great danger of using too much material in the work. The plants are quite hardy and bear cold well, but in our rigorous climate need some protection. If too heavy or close protection is given, they undergo a kind of fermentation, and vitality is destroyed. In our experience, leaves, so highly recommended by some, have proved the very worst covering. They become wet, and matting down upon the plants are sure to destroy them. The green boughs of the pine and hemlock do exceedingly well, and are to be recommended when easily obtained. Coarse rye straw is upon the whole the best covering, and usually can be conveniently procured. It should not be placed on the beds so as to entirely hide the plants, but enough provided to protect from heavy frosts in winter and hot suns in early spring, for the latter are quite as likely to injure the plants as the former.—*Sel.*

Protecting Trees from Mice.—Since the sad havoc made by mice in our apple and pear orchards several years ago, we have adopted the plan of placing around each tree a covering of tarred paper, late in the autumn. This has proved entirely successful, and as it costs but little for material or labor, we venture to recommend it. The cylinder of paper should be brought close to the ground, and extend high enough to protect the tree for a foot or more above, and the cord holding it

in place should be securely tied without a loop knot. Trees that are liable to be covered by deep snows must be protected for more than one foot, as we have had trees from which the bark was gnawed *three feet* above the ground, not only the trunk being denuded but many of the limbs. Mice attack almost every kind of bush, shrub, and tree. The bitter barks of the peach and cherry appear to be fully as acceptable as those of the pear or plum. Where mice prevail, it will not do to depend upon any of the usual expedients, such as banking trees with earth or manure, or treading down the snow in winter. Reliance upon these has cost us more than one hundred of our choicest fruit-trees. The tarred paper coverings must be renewed fresh each year, as they become so tender or brittle that they cannot well be used a second time.—*Sel.*

Potato-Bug Cure.—The following, which we clip from a reliable source, farmers would do well to preserve for practical use next season :—

"Many different means have been tried to destroy the beetle, but without effect, until the present method was found, and this method is so effective and so cheap that he must be a very careless farmer who still lets his potatoes be ruined. It is the following: Take 10 lbs. of lime and mix it well with 1 lb. of Paris green, which is in no way deleterious to the potatoes, giving 11 lbs. of mixture for each acre. Get a small wooden box, 10 inches by 8 inches, and 6 inches deep, and nail a piece of millcloth, as used for sifting by wheat millers, instead of a wooden bottom beneath, also a piece of lath across the middle of the open top as a handle for shaking the box. Every morning from 5 to 9 o'clock, or longer, as long as the dew is on the plants, this mixture has to be applied. Children of 8 to 12 years can easily do it, by putting about one pint into the box and sprinkling it as dust by slow shaking on the leaves of the plants. I guarantee that if this is done at the beginning of the growth in spring, as soon as the first insects are seen, the plants will remain perfectly free. Within two days all the beetles will have disappeared, and this result is quickly arrived at, even if the field has been already completely devastated, and only the stalks remain, covered with the insects and their larvæ. The cure never fails, and it has already been proposed by our farmers in the papers to compel all potato growers by law to apply this mixture on all their fields; for then, within two years, the bug would be entirely destroyed."

News and Miscellany.

—Steel pens were first made in 1830.

—The first lucifer match was made in 1826.

—Gen. McClellan is to be the next Governor of New Jersey.

—The pope is very sick, and his physicians say that he must die soon.

—Glass windows were introduced into Europe in the eighth century.

—The Vanderbilt family are quarreling over the Commodore's millions.

—Forty-three distinct shocks of earthquake were recently felt in Nebraska.

—Rowland Hill was the originator of the postage stamp thirty-seven years ago.

—An explosion recently occurred in a coal mine near Glasgow, Scotland, by which nearly 400 persons perished.

—At $300 a house, the paint used by the ladies of this country for their faces would cover nearly twenty-seven thousand houses.

—The Russians captured Kars by storm on Nov. 18 The fate of the Turks is evidently sealed. They are already suing for peace.

—Kangaroo hides have become a very important article of export from Australia. When tanned they make the most pliable leather known.

—The Zuyder Zee is to be drained. It is expected that it will take sixteen years to complete the work, the estimated cost being about $70,000,000.

—According to the published reports of the institution, 1576 young ladies have graduated from Mount Holyoke Seminary since its foundation by Mary Lyon.

—According to the latest reports from Naples, Vesuvius is unusually active, the glow of fire being so intense as to be distinctly visible at night from that city.

—A petition containing 60,000 signatures, and a mile in length, has been sent from Ireland to the British Parliament, asking that liquor saloons be closed on Sunday.

—A law has been recently enacted in Germany which imposes a fine of about twenty dollars upon every woman that appears upon the streets with a long-trailing dress.

—A Canadian magistrate offended some Labrador Indians by making unjust decisions against them, when they retaliated by making him prisoner and taking him to the woods.

—The Egyptian obelisk presented to the English government some years ago is now on its way to England by sea in a peculiarly-constructed iron vessel. The Khedive has presented the sister obelisk to New York City, and

it is understood that a private citizen has donated $100,000 to defray the expense of transportation to this country, the contract for which has already been signed.

—There is great destitution among those who went to the Black Hills with such glowing anticipations. Recently twelve men offered to draw a loaded wagon out of the country if they could be fed on the road.

—The famine in China still continues to prevail. The scarcity of food has been so great that only human beings remain, and they have been obliged to subsist upon the bark of trees, coarse mosses, and some have even eaten the thatch of their houses.

—One hundred and twenty-eight persons living near Leipsic, Germany, were recently made ill by eating diseased meat which was traced to a farmer, who was fined $4, 500 for the iniquity. Two butchers who were implicated were fined $1,500 each.

—Fung Pak, a Chinese merchant of San Francisco, has gone back to his native country, to induce his brethren to remain at home instead of emigrating to this country. He took with him a ship-load of Chinese women and children, some six hundred in all.

—It is stated that information, thought to be reliable, has been received respecting the location of the records and remains of the long-lost Sir John Franklin. A Mr. Barret, of New York, is fitting out an expedition to start next spring to obtain the remains and thus secure the reward of $100,000 offered by the English Parliament.

Literary Notices.

A Case of Puerperal Septic Fever, etc. By Henry B. Baker, M. D.

The first part of the paper consists of a report of an interesting case of puerperal septic fever, by Dr. Geo. J. Northrop; but by far its most valuable portion is the concluding part, which comprises "remarks on the relations of the medical profession to the people," by Dr. H. B. Baker, Secretary of the State Board of Health of Michigan.

Dr. Baker touches a vital point in the question of human improvement in the following suggestive sentences: "Why cannot the profession plan and carry out a general organized system of work which will tend to improve the relations between the people and the profession? Why should the medical sciences, of all others, remain confined to the profession, 'hid under a bushel'? Investigators in all other sciences recognize the importance of 'popularizing' their results in order to sufficiently interest the people that they will patronize them. No science can receive much aid, or make much progress, except this be done. It seems to me plain that the reason why so large a number in all our communities prefer to patronize quacks is because the quack is about the only one who takes any trouble to 'popularize' knowledge (?) respecting the cure of disease."

Such sentiments, coming from so talented a man as the eminent Secretary of our State Board of Health, will be hailed as the key-note of progress by thousands of philanthropists who are laboring for the amelioration of human suffering. If every physician in Michigan would follow Dr. Baker's wise suggestions, in five years the people of the State would become so healthy that half of the doctors would be obliged to "go West" and seek for practice in less enlightened communities. We do not prophesy this result for the purpose of discouraging any effort at reform in this direction, but as an indication of the great amount of good that might be accomplished by such a reform. The ultimate result would be that all our best physicians would become sanitarians, and the people would pay for being kept well, instead of feeing the doctor for "curing" them when sick, or exposing him to the temptation to keep a patient comfortably sick, when business is dull, for the purpose of increasing his income, as some have avowedly done. Quacks and incompetent members of the profession would "starve out" under such a plan, and the health of the people would flourish beyond all precedent.

The people want information on the subjects of most vital consequence to them. They are hungry for it, and will appreciate the efforts of such men as Dr. Baker, Dr. Bowditch of Boston, Dr. Richardson of England, and other kindred spirits, to give it to them. The Reformer is proud to be enlisted in this same work, and its managers hope to continue to see from their efforts in this direction the same good results which have followed them in the past.

Chicago Medical Journal and Examiner. Chicago: Medical Press Association.

The *Examiner* is, beyond question, one of the ablest medical journals of the day. Its monthly columns are replete with important facts relating to practical medical science in all its numerous branches. The interesting clinical reports and able reviews of medical works which are found in each number are alone more than worth the subscription price, which is $4.00 a year.

Report of a Successful Case of Cesarean Section. By Prof. Edward W. Jenks, M. D.

Dr. Jenks has long enjoyed the reputation of being one of the most skillful surgeons in the State, and unexcelled in his specialty, the diseases of women. The case reported certainly reflects great credit upon him for surgical ability, the operation being performed under most unpromising circumstances. The report itself is a most valuable contribution to the literature of this one of the most formidable of surgical operations.

Items for the Month.

☞ A BLUE CROSS by this paragraph signifies that the subscription has expired, and that this number is the last that will be sent till the subscription is renewed. A renewal is earnestly solicited.

☞ This number concludes another volume of this journal, and we are happy to be able to say that no previous volume has closed with so flattering prospects of an increasing field of usefulness as does the present. With an increasing patronage, a growing list of subscribers, and a hearty co-operation on the part of hosts of friends, together with a good degree of success in the past, we may certainly anticipate prosperity and success for the future.

We deem it but just to remark that we attribute the larger share of the past success of the journal to the hearty support which it has received from the friends of sanitary reform in various parts of the country, especially in the Eastern States. And for future success we base our anticipations upon the hope that we shall succeed in making the journal worthy of the confidence and support of those who have so nobly labored for its interests in the past.

☞ Our readers will find announced on another page a new enterprise which promises to be a very useful and successful auxiliary to the cause of hygiene. For several years the managers of the Sanitarium have been in the constant receipt of numerous letters from persons who were desirous of acquiring a knowledge of the laws of hygiene and the application of hygienic agencies in the treatment of the sick and the prevention of disease. There have been many reasons why no active steps have been heretofore taken toward supplying the demand. One has been, want of a proper place for holding a school of the sort needed. Another has been, want of time to give proper attention to the enterprise. The erection of the new buildings of the Sanitarium has supplied the first want, and the near arrival of the buildings to completion in some degree removes the second obstacle, so that it is deemed best to enter as soon as practicable upon the execution of a plan long cherished by those who have had most at heart the interests of the Sanitarium and institutions connected with it.

The date for the opening of the school is set at Jan. 14, 1878, in order to allow time for those at a distance who may wish to do so to make arrangements to come, and get here at the commencement of the term. Those who embrace this opportunity will never regret it. They will find the course of instruction upon which they will enter not only eminently practical, but intensely interesting. The methods of instruction employed will be found such as to divest the subject of any approach to "dryness," and to surround it with a beauty and interest really fascinating.

Although but a few days have elapsed since the announcement of the school was even hinted, between twenty and thirty students are already enrolled for the first term, and there is good reason for believing that more than double that number will be present on the opening day.

The world is suffering for want of teachers to point out the right way. Thousands are dying daily for want of the very information which will be imparted in the course of instruction in the School of Hygiene. There are calls from all directions for lectures on these subjects. During the present winter there ought to be a hundred lecturers in the field educating the people on the subjects which are of the most vital importance to them, viz., those relating to life and health.

The tuition is placed at a mere nominal sum so that none may be deterred from attending on that account. It is barely sufficient to cover actual expense.

Some may regret that the school is not opened as a regularly chartered medical college empowered to confer diplomas. To such we would say that we have no sympathy, and have not had for years, with that class of pseudo-medical colleges with which this country has been cursed. No matter what the name or the pretensions of these colleges, they are a reproach to the medical profession, and no support should be given them. A first-class, complete, and thorough medical education can only be obtained at some one of the large, expensively equipped institutions in the large cities, where clinical material abounds, and where practical anatomy can be studied at pleasure. The great lack in these otherwise admirable institutions is the universal lack of attention to hygiene. Only one college in the United States has a professorship of hygiene. Yet our best physicians now frankly confess that hygiene is by far the most important branch of medicine. It is to supply this lack, only, that this school is to be opened. It is not intended in any sense to take the place of a regular medical course, but simply to give to individuals wishing to commence the study of medicine a basis for a broad, liberal, thorough, and practical medical education, and to supply to those desiring only a limited amount of medical knowledge an opportunity to become familiar with a large share of the practical knowledge in the hands of the profession, di-

vested of its technical dress, simplified, and put in shape to be readily utilized.

Here is a grand opportunity for young men and women, as well as older persons, to fit themselves for a wide usefulness. Those who think of coming should write at once, or as soon as they decide, so that arrangements can be made for them.

A CHRISTMAS PRESENT.—The times are hard, and everybody feels the importance of economizing. Many will feel that they cannot afford to spend the usual allowance for Christmas presents for friends unless they procure something in itself useful. We would suggest to such that one of the most useful presents that could possibly be selected would be a copy of the HEALTH REFORMER and the HOUSEHOLD MANUAL. The price of the two is $1.75; but those who wish to send them as a present to friends can have them for $1.25. Here is a splendid chance to do a great amount of good at a small expense. A thousand persons ought to improve it; how many will?

AGENTS WANTED! PREMIUMS!!

THE publishers of the HEALTH REFORMER are determined to increase the circulation of the journal to at least 50,000 within the next two years, and to attain that end

FIVE HUNDRED CANVASSERS ARE WANTED

to engage in the work immediately. The present season of the year is the most favorable for this kind of work, and any one who engages in it with energy and perseverance is sure to make a success.

To encourage canvassers to make a business of getting subscribers for the REFORMER, the publishers offer as

A PREMIUM BOOK

to every new subscriber, the HOUSEHOLD MANUAL, which is of itself really worth more than the subscription price for both. The name of the book indicates its practical character; and the fact that more than 5,000 copies of the work were sold in three months, is sufficient guarantee of its popularity. Everybody needs the book, and every one who sees it wants it, and, of course, a copy of the HEALTH REFORMER with it.

TERMS.—To those who secure ten to fifty subscribers, the REFORMER with premium will be furnished for 87½ cents.

To those who secure fifty or more subscriptions, the two will be furnished for 80 cents.

No one will be considered an agent who does not obtain at least ten subscribers.

The subscription price of the REFORMER with premium is $1.25.

CANVASSER'S OUTFIT.

An outfit consisting of a copy of the HOUSEHOLD MANUAL, specimen copies of the REFORMER, with blank subscription book, blank order lists, agent's certificate, circulars, and a package of envelopes addressed to this office, will be sent, post-paid, for $1.00. Address, **Health Reformer,**
Battle Creek, Mich.

School of Hygiene.

THE managers of the Sanitarium have decided to put into immediate execution their long-cherished plan of establishing an educational department in connection with that institution.

The Object of the School

Will be to afford facilities for the study of the laws of hygiene, under proper instruction, and to obtain

A Practical Knowledge of Nursing,

Together with the use of hygienic agencies in preventing and curing disease. Those who meditate entering upon a course of medical study will find this a most admirable

Preliminary Training School,

As students will be afforded an opportunity of pursuing the study of the fundamentals of the subjects usually taught in medical schools. The School of Hygiene does not profess to be a Medical College, and does not grant medical diplomas; but a certificate of study and proficiency will be given which will be accepted as a certificate of study in any Medical College in the United States. Instruction will be given in the form of

DAILY LECTURES AND CLASS RECITATIONS,

Which will be illustrated by models, charts, blackboard drawings, microscopic demonstrations, and chemical experiments.

The connection of the School with Battle Creek College secures to it the advantages of a good Chemical and Philosophical Laboratory.

Term Opens Jan. 14, 1878,

And continues twenty weeks, closing May 24, 1878.

TERMS. Tuition $25.00. Good table board can be obtained at the Sanitarium students' club for $1.10 a week; good furnished lodging rooms are to be had at 50 cents a week. Excellent board can be obtained at $2.50 to $3.00 per week. There will be opportunity for several active young men and women to pay their way in work.

☞Those interested should send at once for a circular.

Address, **J. H. KELLOGG, M. D.,**
Sanitarium, Battle Creek, Mich.

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OUR BOOK LIST.

THE following books, published at this Office, will be furnished by mail, post-paid, at the prices given. By the quantity, they will be delivered at the express or R. R. freight offices at one-third discount, for cash. SPECIAL TERMS TO AGENTS.

Plain Facts about Sexu Life.—A work which deals with sexual subjects in a new and instructive manner. Printed on tinted paper and handsomely bound. 360 pp. $1.50. Flexible cloth, 75 cts. Pamphlet edition, 50 cts.

Uses of Water in Health and Disease. This work comprises a sketch of the history of bathing, an explanation of the properties and effects of water, a description of all the different kinds of baths, and directions for applying water as a remedy for disease. Price, 20 cents. Bound in cloth, 50 cts.

Proper Diet for Man. A concise summary of the principal evidences which prove that the natural and proper food for man consists of fruits, grains, and vegetables. Pamphlet. Price, 15 cents.

The Evils of Fashionable Dress, and how to dress healthfully. Price, 10 cents.

Alcoholic Poison, as a beverage and as a medicine. An exposure of the fallacies of alcoholic medication, moderate drinking, and of the pretended Biblical support of the use of wine. 20 cts.

Health and Diseases of Woman. By R. T. TRALL, M. D. Price, 15 cts.

The Hygienic System. By R. T. Trall, M. D. Price, 15 cents.

Tobacco-Using. By R T. Trall, M. D. 15 cts.

Healthful Cookery. A Hand-Book of Food and Diet; or What to Eat, How to Eat, When to Eat. The most complete work on Hygienic Cookery published. Price, 25 cents.

Science of Human Life. This is a valuable pamphlet, containing three of the most important of Graham's Lectures on the Science of Human Life. Price, 30 cents.

Health Tracts. The following tracts are put up in a neat package and aggregate, in all, nearly 250 pp.: Dyspepsia; Healthful Clothing; Principles of Health Reform; Startling Facts about Tobacco; Twenty-five Arguments for Tobacco-Using Briefly Answered; Tea and Coffee; Pork; True Temperance; Alcohol: What is it? Alcoholic Poison; Moral and Social Effects of Alcohol; Cause and Cure of Intemperance; The Drunkard's Arguments Answered; Alcoholic Medication; Wine and the Bible. Price, 30 cents per package.

These tracts will be furnished, postage paid, at the rate of 800 pages for $1.00. A liberal discount by the quantity.

The Health Reformer. A monthly journal for the household. $1.00 a year. Specimen copies sent free.

Bound Volumes of the Health Reformer, $1.50 each.

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