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THE RATIONAL TREATMENT OF CONSUMPTION.

BY J. H. KELLOGG, M. D.

READ BEFORE THE CALHOUN COUNTY MEDICAL SOCIETY,
MARCH 7, 1882.

5. *To Develop the Lungs.*—As one of the causes of pulmonary disease is deficient exercise of the lungs, it naturally follows that suitable exercise of those organs constitutes one of the most important measures of treatment. No part of the body is more susceptible of development by judicious and appropriate exercise than the lungs. The amount of air which passes to and fro in the respiratory process is ordinarily but two-thirds of a pint, and in cases of disease is much less, often being reduced to less than a third of this amount. By daily exercise of the lungs in such a manner as to develop the chest, the breathing capacity may be very greatly increased. We have frequently seen the chest expanded three or four inches by a course of appropriate training. One of the best exercises for this purpose is forced respiration, which consists in breathing as deeply as possible, making strong efforts to fill the lungs, and emptying them as completely as possible. Breathing through a small silver or glass tube is an excellent means of securing the proper effect and steadiness of movement. This exercise should be taken slowly for five to thirty minutes at a time, and should be repeated several times a day. Too much emphasis cannot be laid upon the importance of giving attention to these measures of treatment. The patient should make it a large part of his business each day to attend to his respiration. At frequent intervals he should expand his lungs to their full capacity, avoiding violent efforts, especially when there is danger of hemorrhage. Walking, horseback riding, calisthenics, and all

forms of exercise which call the lungs into increased action, are excellent means of treatment, and should be urged upon the patient.

One of the most noticeable features of this disease is progressively increasing rigidity of the chest walls and decrease of motion in the affected portions of the lungs. The loss of respiratory power is very readily shown by means of the pneumatometer (Fig. 1.)

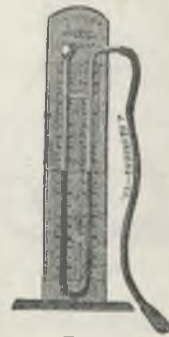


FIG. 1.

A healthy adult will easily raise the column of mercury of the instrument 60 or 100 m. m. But we have frequently found patients who could not produce an indication of more than two or three m. m., showing an almost entire loss of respiratory power.

The diminishing lung capacity is admirably shown by the spirometer (Fig. 2). A person in health ought to exhale after a forced inhalation, from 160 to 300 cubic inches of air. We frequently find consumptive patients who cannot exhale more than 60 to 75 cubic inches.¹⁰

Too little attention has been given in the treatment of consumption, to regular and systematic efforts to develop the lung power and capacity, notwithstanding the full recognition of the fact

that their loss is one of the most marked features of the disease.

Another means of increasing the lung capacity and power, is special exercises, both passive and active, applied in such a way as to increase the strength of the respiratory muscles. The passive movements useful in these cases, consist chiefly in the rubbing and percussion of the muscles of the chest and back, and in the application to the patient, for at least one half hour daily, of some one of the most approved forms of artificial respiration. That known as Sylvester's method is very convenient for this purpose. Another simple method



FIG. 2. SPIRO METER.

consists in lifting the patient by the shoulders, while he is in a sitting posture. I have recently perfected an apparatus, by means of which artificial respiration may be administered any desired length of time, without the aid of an assistant.

Another measure which we can especially recommend, is the application of faradic electricity to the muscles of the chest. The current should be sufficiently strong to cause contraction of the muscles. The best mode of application is to place the positive pole between the shoulders, applying the negative along the spaces between the ribs so as to cause contraction of the intercostal muscles. The application should also be made to the pectoral muscles, which form the fleshy part of the breast, and to the muscles of the neck. In addition to the other measures described, probably the best of all means of expand-

ing the chest and increasing the lung power, is the pneumatic apparatus devised by Waldenburg (Fig. 3). I have now used this apparatus in a large number of cases, and have obtained decidedly beneficial results. I regard it as one of the most important remedial appliances in such cases. It is, of course, too cumbersome and expensive for general use in private practice. This apparatus may be used to reinforce either expiration or inspiration, or both.

Patients always increase their lung capacity while using it from ten to one hundred per cent. It also affords a most convenient means of administering the vapors of various balsams, warm

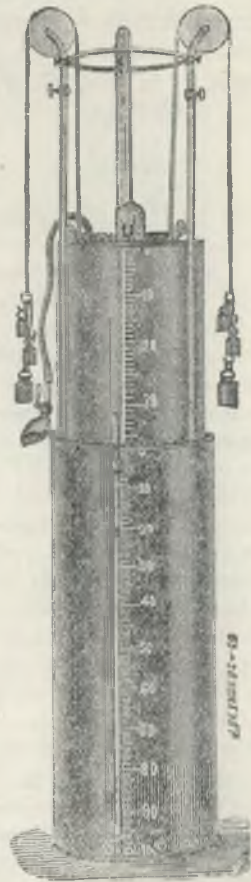


FIG. 3. WALDENBURG'S APPARATUS.

vapor, super-oxygenated air, etc., for which purpose I have found it far superior to any other appliance, and productive of most gratifying results.

6. *To Sustain and Invigorate the Patient in Every Possible Way.*—As this disease is characterized in a remarkable degree by progressively increasing debility, no means should be neg-

lected which will contribute in any way to sustain the patient's strength and reinforce his waning vitality. A nourishing diet, abundance of sleep, cheerful surroundings, plentiful supply of pure fresh air, abundant daily exercise in the open air, particularly in horseback riding, exposure to the action of the sun's rays by exercise in the sunlight as well as by sun-bathing, and total abstinence from all depressing influences of every sort, are among the essentials of the hygienic management of the disease. Tonic applications of electricity and the judicious use of bathing, together with daily employment of massage, frequent inunctions to the whole body, and all other means of improving nutrition, are necessary parts of the successful plan of treating serious cases of pulmonary disease. Patients should be cautioned in regard to exercise, especially against exerting themselves to a degree to induce extreme fatigue, and to avoid violent exercise of all sorts, such as running, leaping, going rapidly up stairs, speaking in a loud tone, or singing for a long time, or in any other way overtaxing the respiratory organs. Care should be taken to avoid exposure to sudden changes of temperature. Patients accustomed to a warm atmosphere most of the time should, in cold weather, wear a respirator. When out of doors, they should take especial care to breathe wholly through the nose so as to avoid bringing cold air in contact with the mucous membrane of the lungs on account of its irritating character. By breathing through the nose the air is warmed before it reaches the lungs, and this injury is prevented. In the absence of a respirator, an ordinary cotton handkerchief may be used for the purpose with advantage, being tied over the mouth and nostrils in such a way that the air drawn into the lungs must pass through it.

Much undue stress has been laid upon the influence of climate in the cure of consumption. The idea has prevailed that certain climates have a special curative effect upon this disease; but there has been a controversy as to which is the exact climate which possesses curative virtues, since it has been observed that the patients get well under the most diverse climatic influences. The diversity of opinion among physicians on this subject has caused some to advise patients to visit Florida, the West Indies, Mexico, and other tropical and semi-tropical regions, especially during the cold seasons of the year; while others have sent their patients to Minnesota and the Upper Lake Regions and even to more northern parts. A thorough discussion

of the subject at the late meeting of the British Medical Society, in which Dr. Bennett and many other eminent physicians took a part, led to the conclusion that the chief advantages derived from climates supposed to be favorable to the recovery from this disease are, uniformity of temperature and opportunity for abundant out-of-door exercise. Climates which are subject to rapid changes of temperature, or in which the cold season of the year is so severe as to confine the patient within doors, or which in any other way interfere with daily and regular exercise in the open air, are unfavorable to this disease. We think, however, that many of the advantages of change of climate may be obtained by careful management at home. In the summer sea-



FIG. 4. RESPIRATOR.

son in this latitude, a consumptive patient may enjoy nearly all of the advantages that can be obtained anywhere, especially if he is able to make a visit of six weeks to the Upper Lake Region during the latter part of July and August. In winter, by means of a respirator and proper attention to clothing, abundant exercise can be taken out-of-doors; and with sufficient care in regulating the temperature and moisture within doors, and securing good ventilation, almost as good conditions can be enjoyed as in any climate to which the patient could go.

I speak from practical experience, after having carried through several winters patients who have previously found it necessary to spend the winter season in a warm climate.

In conclusion, a word must be said in reference to some popular errors concerning the disease. One of the most prominent of these is the idea that the use of alcohol is one of the most successful means of checking the progress of the malady. Many physicians have encouraged this error, and not a few drunkards have

been made such by a physician's prescription, the intent of which was to cure the patient of a grave malady, but the effect of which was to make him a victim of a terrible vice. Positive evidence is yet wanting to show that alcohol has any curative value in consumption, and there is plenty of evidence to show that the habitual use of liquor is one of the surest means of producing this disease.

Whisky became popular as a remedy when physical diagnosis was not so well understood as at present, and we believe that its reputed value rests chiefly upon errors in diagnosis, though we believe it possible that in some cases it may act as a digestive stimulant, and by improving nutrition aid in the cure of the disease.

Cod-liver oil has also enjoyed a reputation for the cure of consumption which we believe it does not deserve. In most of the cases which have come under my care, it had been used without any benefit, and although I have in every case discontinued it, I have never observed any evil results from so doing, but have in nearly every case found benefit by the improvement in appetite and digestive power of the patient. It is now held by many of the most intelligent and experienced members of the profession that the advantages claimed for this remedy are by no means substantiated by experience, and that its chief utility, if it has any, is simply due to its nutritive value as an oleaginous food. As such, however, it is much inferior to sweet cream.

This has been clearly shown by the experience of many physicians, and in my opinion the time is not far distant when this nauseating drug will occupy a much less prominent place than it has heretofore held. Preparations of malt and maltine have lately been introduced as a substitute for cod-liver oil. I have used them to a considerable extent, and I think with advantage. Many practitioners do not hesitate to pronounce them vastly superior to cod-liver oil. They are certainly much more palatable, and do not disturb the digestive organs.

—Few know the value of cheerfulness. It is God's medicine. Everybody ought to bathe in it. Grim care, anxiety, moroseness, all this rust of life ought to be scoured by the oil of mirth. It is better than emery. Every man ought to rub himself with it. A man without mirth is like a wagon without springs, in which every one is caused disagreeably to jolt by every pebble over which it runs.

THE PHYSICIAN OF THE FUTURE.

IN an able address on the above subject delivered at the opening of the twenty-ninth annual course of lectures in the medical department of the University of Vermont, Prof. Geo. H. Perkins, M. D., the orator of the occasion, gave utterance to many most excellent truths which it is well to have brought before the coming medical men for serious consideration. We quote a few paragraphs as follows:—

A change in the theory of disease, which long since began, but is not yet completed, must profoundly affect the work of the physician of the future. Disease was formerly believed to be a something which had a sort of independent existence, and which went about over the earth seeking whom it might assail. When this something had entered the body of a man, it created confusion in its internal economy, and order could not be restored until the intruder was driven out. Accordingly, remedies none of the gentlest were vigorously applied until the disease was scared away or the patient died. It is strange how universal among men this belief in a possession, an entrance of something into the body causing disease, has been.

This savage idea was long perpetuated among civilized people, and remedies were used which were hardly less absurd than the leapings, howlings, and rattle-shakings of an Indian medicine-man. The change has come very gradually. At first the student of medicine enlarged his field of study, from disease and its phenomena, until it included the structure and action of tissues and organs in health. Physiology and anatomy, of little importance in the old science of medicine, began to have recognized value. After this it was found that organs did not always become disordered because of assaults from within the body, but that they were affected by external influences.

Sanitary science, though in its infancy, has already profoundly affected medical science in many directions. Perhaps the

most important effect that as yet appears is the leading medicine away from its old, blind, absolute faith in remedial agents, in therapeutics, toward greater faith in right living, proper diet, dress, and drainage. Not that remedies are to be wholly laid aside, but they will be more sparingly used, and more intelligently, and often not at all. Where formerly drugs, powerful in quantity and quality, were invariably given, many of our best physicians now prescribe few or none, depending, and with better results, upon pure air, simple food, and other hygienic means. I believe that more would thus treat disease were they not prevented by the patients themselves.

So long as it is less trouble to take quinine than to clear out drain or cess-pool, so long as men prefer swallowing drugs to abstaining from favorite articles of food, or regulating personal habits, so long must the medical advisers of a community find their best efforts to advance sound sanitary science thwarted. It will be a long and tedious task—this of educating out of the popular mind this strange passion for dosing; but herein lies one of the most important tasks of the physician of the future. If he does his work well, he must be strong enough and determined enough to stem a powerful current of deeply rooted prejudice and self-indulgent unreasonableness; but if he and his fellows only persevere, they will do incalculable good. So difficult is this work that many shrink from it. They admit the importance of fresh air in hospitals, nay, they demand it, but in their private practice they say little about ventilation. They are careful that their prescriptions shall be properly compounded and regularly taken, but they are much less careful about the diet of their patients. They treat zymotic diseases, but do not enforce such sanitary regulations as they know to be necessary. I do not say that all are open to this charge,—not all, but some,—and there should be none.

With all earnestness would I plead that the people be taught how to live, and I would urge this not only for the sake of the people, but for that of the doctors as

well. It is evident that their success as healers of disease must be far greater if their patients observe hygienic laws than if they do not. The instructions of the doctor, weighty enough when given to one stricken with grave disease, may often fall unheeded upon the listless ears of a well person. Sick people are usually more eager to get well than well people to avoid sickness; and yet, even though the labor seem well-nigh useless, the welfare of the race demands that the principle of hygiene be made known, and the task of doing this naturally rests upon those who have undertaken to be the medical advisers of the community. It may be that the people will learn to care very much for those laws upon the observance of which good health depends, with discouraging slowness, but the good work once begun must go on with increasing power and influence.

We may take heart as we see what has already been done in this direction, for a great deal of very important knowledge has already been received by the people,—knowledge of the necessity for fresh air and sunshine, of cleanliness of person and of premises, of proper food, clothing, and exercise, of the laws of heredity and how hereditary tendencies to disease may be overcome.

THE PHYSICAL EFFECTS OF ALCOHOL AND TOBACCO.

A LECTURE DELIVERED AT THE LAKE BLUFF TEMPERANCE CONVOCAATION, AUG. 18, 1882.

BY DR. J. H. KELLOGG.

The lecturer was introduced by Hon. Geo. Woodford, who spoke as follows:—

LADIES AND GENTLEMEN: It is my privilege, as it is my great pleasure, to introduce to this audience a gentleman who, in the world of science in his State, stands at the head of the list in his particular department. We have been very fortunate in securing him for this evening, to lecture on that phase of the temperance question in which he is a specialist. I take great pleasure in introducing Dr. J. H. Kellogg, Superintendent and Resident Physician of the Battle Creek Sanitarium, and Member of the Michigan State Board of Health.

LADIES AND GENTLEMEN: When I received an invitation to attend your camp-meeting, I thought at first that it would

be impossible for me to come. The large number of sick people at the Sanitarium requiring constant care and attention make my duties so onerous at home that it is almost impossible for me to leave. But when I thought the matter over, it seemed to me that I could not afford to miss the opportunity of attending for the first time in my life a temperance camp-meeting, and at last I reluctantly consented to come,—reluctantly in one sense, but joyfully in another; and my only regret this evening is that, through a pressure of other duties, I have not been able to better prepare myself for this occasion.

I propose to describe and illustrate to you to-night the physical effects of alcohol and tobacco upon the human system. I shall confine myself to the physical effects of these poisons, and shall leave to others to dwell upon the moral aspects of the question. I shall endeavor to express what I have to say upon this question in language so simple and untechnical that the smallest child in this audience can understand every word, and I shall endeavor to illustrate my lecture with experiments that any one can repeat at home with very slight trouble or expense.

In the first place, before we can know the effects of alcohol or tobacco on the human body, we must understand what the body is; we must know what is the structure of its organs and what their functions and mutual relations, before we can properly comprehend the changes and disturbances that alcohol will work in this complicated machine. When we examine the human body with the naked eye, we obtain only the most superficial idea possible of its wonderful structure. It is only by the aid of the microscope that it is revealed to us as the most complicated and delicate mechanism possible to imagine. But before we can understand the workings of this human machine, we must know something about the lower forms of life. Man stands at the top of the scale of animal existence. Away down at the other end of the scale we find little creatures that sustain a wonderful relation to human beings.

Suppose you take a walk with me this summer afternoon out into the country. Here is a stagnant pool by the wayside, covered with a green scum. In the mud that lies on the bottom near the water's edge, is a peculiar slimy substance. Suppose we gather a little of that slime, loathsome as it may seem, and take it home to our laboratory. Then we will take a small portion, as much, perhaps, as you can put on the point of a pin; place it on a slip of glass, and put it under a microscope. If now we look through the eye-piece of the instrument, we will find a most wonderful panorama spread out before our eyes. In the field of the microscope will be seen a number of curious little creatures which represent the lowest orders of life. Among these primitive forms of existence will be found one more curious than all the rest, which the biologists have termed *Amæba*. Perhaps I cannot give you a better idea of the relation which the parts of the body sustain to one another than by describing the *Amæba*. I was just about to describe its form, but the fact is it has no definite form. At one moment it is round, at another, long; next it has a serrated outline, and then it goes through a variety of gyrations, and ends up with a shape that is simply indescribable. We will suppose for the moment that it is round. Inside of it appears another round body, its nucleus, and within this a dot, the nucleolus. The *Amæba* is jelly-like in character, and is perfectly transparent and structureless, but it has the ability to put itself through a great variety of evolutions. No gymnast can equal it in dexterity and agility. This little creature has no eyes, no brain, no stomach, no mouth, no limbs, nor in fact any of the organs of the human body, and yet it can perform almost all the functions of that highly organized piece of machinery. It has the ability to manufacture a stomach or a mouth out of any part of its body at any time it wishes to do so. It is interesting to watch how one of these creatures eats. Suppose here is an *Amæba*, and here a microscopical particle of food. It has no mouth, so how is it going to eat? If we watch the *Amæba* a

moment, it will answer the question for us; it simply makes a mouth on the spot. It projects a little lip out on one side of the particle of food, and another little lip on the other side, and by and by these two lips come together, and the particle is inside instead of outside. The *Amœba* retains the particle of food for a time until it has extracted all the nourishment, and then throws it out again. Perhaps it wishes to travel from one place to another. Although it has no limbs to carry it about, it can move from place to place at will. It performs the process of locomotion just as an angle-worm would. It stretches itself out as long and thin as possible, attaches the front end, and draws up the rear, and by this process of pushing and pulling finally arrives at its destination.

The one important thing that I wish to call your attention to is that the human body is nothing more than a combination of these little creatures; it is simply a community of little creatures. If we take a drop of human blood, and place it in the field of the microscope, we will find in it little creatures that exactly resemble the *Amœba*. You cannot tell them apart save that those in the blood are a little smaller than the ones we found on the bottom of the stagnant pool. In every drop of blood there are thousands of them. Suppose here is a microscopical field, and as we look at it, we find here and there a round *Amœba*, and here is one that is traveling, and there is one trying to get around a morsel of food. In addition to these we find a great many others, smaller than these, that are red in color. They are all of the same size, and all of the same shape. These are called red blood-corpuscles, and the *Amœba* in the blood are white blood-corpuscles. We are able to see how that these blood-corpuscles are in reality little living creatures, as independent of one another as the fishes that swim in the water, or the birds that fly in the air. But what are they for? It is important that we should understand what they do to the body, in order that we may appreciate what will happen if by some means they should be destroyed. We shall see

presently. Suppose we leave our drop of blood for a moment, and examine the brain. We will find it made up of just such little creatures as the white blood-corpuscles. The liver also will be found to be made up of little cells. If you go through the whole body, you will find that it is made up of just such bodies. The human body might aptly be compared to a nation of people divided up into communities. Some have one part to perform, and some another, some are blacksmiths, some carpenters, some editors, etc., but all work in harmony. Those in the liver work at the business of making bile and can do nothing else; other little creatures in the salivary glands can do nothing but make saliva.

There are other little cells that live in certain parts of the brain, and send out little fingers to all parts of the body. Some of the brain-cells have no fingers at all, and are called apolar; others have one finger, and are called unipolar: some have three, and are called tri-polar; and so on. These little cells run their long, slender fingers to every part of the body, some of them clear down to the ends of the toes; and it is these fingers that form the nerve fibres. A number of them are gathered together, a sheath is placed around them, and they altogether make up a nerve. These nerves start out from the brain, and ramify all through the body. In this way these little creatures in the brain are made acquainted with what happens in every part of the body. If you stick a pin into your finger, the cells in the brain feel it by means of their long fingers, the ends of which, situated in the finger, are injured by the pin. If you cut the nerve in two that leads to the finger, you can cut or burn the finger, and the little brain-cells will know nothing about it, because you have cut off the means by which they receive their information. Some of these nerves run down to the heart, and about once a second the brain-cells send down an impulse to the heart which makes it beat. They order the heart to beat, and it beats. When it is necessary for a muscle to move, they send

down word to that particular muscle, and it moves at once. When food is placed in the stomach, the little creatures in the brain which have charge of the stomach say to it, Digest, and it begins its work. So the cells in the brain which govern the liver say to the little creatures which dwell in that portion of the body, Make bile, and they obey orders, each doing its allotted work.

Suppose we turn again to our microscope. Here is a drop of blood magnified about 250,000 times. We find in it, as I said before, two kinds of cells; the white and the red blood-corpuscles. There are about 400 of the latter to one of the former. We have plenty of time to examine them; for blood, if kept under favorable circumstances, will live about six weeks outside the body. It is a curious fact that even after the body dies, these little cells which go to make it up, will live on for some time longer. I took out a turtle's heart the other day, and it went on beating for several hours after the turtle itself was dead. If you cut off the spur of a rooster, and graft it into his comb, it will grow there as well as in its proper place.

It is quite a common thing now-a-days, when a man has his scalp torn off, to graft on pieces of skin from peoples' bodies until the torn scalp is completely patched up. Some time ago a young lady whose scalp was torn off by a piece of machinery, had the surgeon take pieces of skin furnished by her friends and graft onto her head, and it is said that when the hair grew out, it was black, and brown, and red, and all sorts of colors; but I won't vouch for the truth of that part of the story. But to return to our drop of blood, if we examine it carefully we will find a number of small specks which will be found by repeated observation to grow in size from day to day until finally they come to be white blood-corpuscles. After several weeks, these white corpuscles grow old and infirm, change color, and become red blood-corpuscles. It starts as a speck, becomes a white blood-corpuscle, and then shrivels up and becomes a red

blood-corpuscle. This change is taking place all the time. Thousands of these creatures are dying with every breath, with every heart beat. There is a funeral going on in the body all the time, and it is part of the business of the little creatures which make up the liver, to dispose of the carcasses of these dead corpuscles.

If we take a frog's foot and spread it out under the microscope, we can see the blood coursing along through the veins, and we can in this way watch the corpuscles, and see what they are doing. This is what they are about: whenever a muscle moves, there are particles of the body which are worn out and thrown off, resulting in the formation of carbonic acid gas; and it is the business of the red blood-corpuscles to carry these worn-out pieces of the human machinery to the lungs in the form of carbonic acid gas, which is there thrown off and exchanged for oxygen. They are, if you please, the hod-carriers of the body. If they were all to be destroyed at once, the person would die from poisoning by carbonic acid gas, because poisonous elements would no longer be carried off.

Now let us turn our attention for a moment to the white blood-corpuscles. At the first glance, they seem to be loafers. Suppose you have here a capillary vessel one three-thousandth of an inch across. Here are the red blood-corpuscles flowing along rapidly through the middle, intent upon carrying their load of carbonic acid gas to the lungs. Along the sides we see here and there a white corpuscle loitering carelessly along. If you watch them carefully for some time, you will find what they are about. You will discover that they are looking for a place to get out; and the reason that they want to get out is that they are traveling tinkers, and are looking for a job of mending to do. Suppose a person gets a sliver in his finger, or still better, suppose that we stick a pin into the frog's foot that we have under the microscope. You will see the white corpuscles immediately begin to collect in great numbers, to repair the injury that has been done.

[TO BE CONTINUED.]

WHITE OR BROWN BREAD.

THE earliest agitator in the matter observed, two years ago, when traveling in Sicily, that the laboring classes there live healthily and work well upon a vegetable diet, the staple article of which is bread made of well-ground wheat-meal. Nor are the Sicilians by any means the only people so supported. "The Hindoos of the North-western Province can walk fifty or sixty miles a day with no other food than 'chapatties,' made of the whole meal, with a little 'ghee,' or Galam butter." Turkish Arab porters, capable of carrying burdens of from four hundred to six hundred pounds, live on bread only, with the occasional addition of fruit and vegetables. The Spartans and Romans of old time lived their vigorous lives on bread made of wheaten meal. In Northern as well as Southern climates we find the same thing. In Russia, Sweden, Scotland, and elsewhere the poor live chiefly on bread, always made from some whole meal—wheat, oats, or rye—and the peasantry, of whatever climate, so fed, always compare favorably with our South English poor, who, in conditions of indigence precluding them from obtaining sufficient meat food, starve, if not to death, at least into sickness, on the white bread it is our modern English habit to prefer. White bread alone will not support animal life. Bread made of the whole grain will. The experiment has been tried in France, by Magendie. Dogs were the subject of the trial, and every care was taken to equalize all the other conditions—to proportion the quantity of food given in each case to the weight of the animal experimented upon, and so forth. The result was sufficiently marked. At the end of forty days the dogs fed solely on white bread died. The dogs fed on bread made of the whole grain remained vigorous, healthy, and well nourished. Whether an originally healthy human being, fed solely on white bread for forty days, would likewise die at the end of that time, remains, of course, a question. The tenacity of life exhibited by Magendie's dogs will not evidently bear comparison with that of the scarcely yet forgotten

'forty days' wonder,' Dr. Tanner. Nor is it by any means asserted that any given man or any given child would certainly remain in vigorous health for an indefinite length of time if fed solely on wheat-meal bread. Not a single piece of strong evidence has been produced, however, to show that he would not, and in the only case in which whole-meal bread has been tried with any persistency, or on any considerable scale among us,—to wit, in jails,—facts go to show such bread to be an excellent and wholesome substitute for more costly forms of nutritious food.—*The Nineteenth Century.*

HOW TO WALK.

THE *Lansing Republican*, one of the leading newspapers in the State, quotes the Home Hand-Book as follows:—

"It may seem at first ridiculous to pretend to teach grown people how to walk, as though they had not learned this in infancy. But we are willing to venture the assertion that not one person in twenty knows how to walk well. How few people there are who do not feel slightly embarrassed when obliged to walk across a large room in which are many persons seated so as to observed well each movement! How many public speakers there are who appear well upon the platform so long as they remain standing still, or nearly so, but who become almost ridiculous as soon as they attempt to walk about! Good walkers are scarce. As we step along the street, we are often looking out for good walkers, and we find them very seldom. What is good walking? We answer, Easy, graceful, natural walking. Nearly all the good walkers there are, will be found among gentlemen, since fashion insists on so trammeling a woman that she cannot walk well, can scarcely make a natural movement, in fact. To walk naturally, requires the harmonious action of nearly every muscle in the body. A good walker walks all over; not with a universal swing and swagger, as though each bone was a pendulum with its own separate hanging, but easily, gracefully. Not only the muscles of the

lower limbs, but those of the trunk, even of the neck, as well as those of the arms, are all called into action in natural walking. A person who keeps his trunk and upper extremities rigid while walking, gives one the impression of an automaton with pedal extremities set on hinges. Nothing could be more ungraceful than the mincing, wriggling gait which the majority of young ladies exhibit in their walk. They are scarcely to be held responsible, however, since fashion requires them to dress themselves in such a way as to make it impossible to walk otherwise than awkwardly and unnaturally.

"We cannot attempt to describe the numerous varieties of unnatural gaits, and will leave the subject with a few suggestions about correct walking.

"1. Hold the head erect, with the shoulders drawn back and the chin drawn in. Nothing looks more awkward and disagreeable than a person walking with the head thrown back and the nose and chin elevated.

"2. Step lightly, and with elasticity,—not with a teetering gait—setting the foot down squarely upon the walk and raising it sufficiently high to clear the walk in swinging it forward. A shuffling gait denotes a shiftless character. But do not go to the other extreme, stepping along like a horse with 'string halt.' A person with a firm, light, elastic gait, will walk much farther without weariness than one who shuffles along. A kind of measured tread or rhythm in the walk also seems to add to the power of endurance, although, for persons who have long distances to travel, an occasional change in the time will be advantageous.

"3. In walking, do not attempt to keep any part of the body rigid, but leave all free to adapt themselves to the varying circumstances which a constant change of position occasions. The arms naturally swing gently, but not violently. The object of this is to maintain the balance of the body, as also by the gentle swinging motion to aid in propelling the body along.

"Correct walking should be cultivated. It ought to be taught along with arts and

sciences. In our military schools it is taught; but these schools can be attended by but few. Invalids, especially, should take great pains to learn to walk well, as by so doing they will gain more than double the amount of benefit they will otherwise derive from the exercise.

PHYSICAL CULTURE.

[CONCLUDED]

Most classes of merchants do not fare much better than those of the lighter professions in the development of symmetrical bodies. Take the heavier kinds of skilled labor. The blacksmith rarely uses one of his hands as much as the other, especially in heavy work, and often has poor legs. Indeed, if he has good legs, he does not get them from his calling. The stone-mason is equally one-handed—one merely guiding a light tool, the other swinging a heavy mallet. Nine-tenths of all machinists are right-handed. And so on, through the long list of various trades where severe muscular exertion is requisite, there is a similar uneven distribution of the work to the various parts of the body, the right arm generally getting the lion's share, the left but little, the back more than the chest,—or, rather, than the front chest,—and the legs having but passive sort of work at best. Puddlers and boiler-makers, plumbers and carpenters, coopers and smiths, ship-rights and carriage-makers, tanners, and all who follow trades calling for vigorous muscular action, not only constantly work one side more than the other, but many of their tools are made, purposely, right-handed, so that they could hardly use them with the left hand if they wanted to. As to those whose work is more delicate, saddlers and shoe-makers, mill-hands and compositors, wood-turners, tailors, jewelers, and engravers, and nearly all the lighter craftsmen, learn their trade with one hand, and would never venture to trust any of its finer work to the other. In short, take the mechanic where you will, in the vast majority of instances his right arm and side are larger and stronger than his left, and quite as often his voca-

tion does little or nothing to strengthen and develop his legs.

The fact that most of these men have active work for some of the muscles, with enough of it to insure a good appetite, combined with inherited vigor, makes them often hearty men, but it leaves them unequally developed. When they get into the gymnasium, they are usually lacking in that symmetry, ease, and erectness which they might all along have had, had they but used the means. The result, then, of overworking one part of the body at the expense of the other, especially in heavier mechanical labors, and of too vigorous action in the lighter, tends to make the average workman more prone to disease. Were there uniform development, and that daily vigorous exercise which would stimulate the dormant parts of the man's body, it would add to his life and usefulness.

But how is it with the sturdy laborer? He can hardly be liable to the same defects. His work certainly must call into play every muscle of his body.

Well, watch him awhile and see. Try the coal-heaver. His surely is heavy, hard work, and must make him exert himself all over. But does it? While it keeps his knees steadily bent, his back is all the while over his work. The tons of coal he lifts daily with his shovel gradually, but with positive certainty, insure his back remaining somewhat bent when his work for the time is done. When a year is spent at such labor, the back must take a lasting curve. While his back broadens, growing thick and powerful, his chest does not get so much to do; hence he is soon a round-shouldered man. As he does not hold his chest out, nor his neck and head erect, he contracts his lung-room, as well, indeed, as his general vital-room. Scarce any man grows earlier muscle-bound, for few backs do so much hard work. Now, standing erect, let him try and slap the back of his hands together behind his shoulders, keeping his arms horizontal and straight at the elbow. Now he will understand what is meant by being muscle-bound. It will be odd if he can get his hands within a foot of each other.

The navy is no better. The gardener's helper has to do much stooping. So do track-hands, stone-breakers, truckmen, porters, longshoremen, and all the rest. Especially are ordinary day-laborers, whose tools are spade, pick, and bar, who are careless about their skin, who are exposed to dust and dirt, who are coarsely shod, most prone to have bad feet. They, too, have the hearty appetite and the sound sleep. Seldom do they give their bodily improvement a thought, and so often, like their own teeth, they decay before their time, and materially shorten their usefulness and their days.

Here, then, we see that the vast majority of men in this country—three out of four at least—are born of fathers but partially developed, and uniformly of inerect carriage.

And how is it with their mothers? Naturally they come, to a large extent, from the same classes. They inherit many of the characteristics of their fathers—size, color, temperament, and so on, and generally the same tendency to be stronger on one side than on the other. In the poorer classes their life is one of work, frequently of overwork and drudgery, and in ill-lighted, ill-ventilated apartments. Among those better off, they do not work enough, and often, though of vigorous parents, are not themselves strong.

Thoroughly healthy, hearty women are not common among us. Ask the family physician, and he will indorse this statement to an extent most men would not have supposed. American women are not good walkers. Look how they are astonished when they hear of some lady who walks from five to ten miles a day, and thinks nothing of it. One such effort would be positively dangerous to very many, indeed probably to the majority of our women, while nearly all of them would not get over its effects for several days. Yet many English and Canadian ladies take that much exercise daily from choice, and finding the exhilaration, strength, and health it brings, and the general feeling of efficiency which it produces, would not give it up. No regular

exercise is common among the great majority of the women of this country which makes them use both their hands alike, and is yet vigorous enough to add to the size and strength of their shoulders, chest, and arms. Ordinary house-work brings the hands of those who indulge in it a good deal to do, even though the washing and ironing are left to hired help. The care of children adds materially to the exertion called for in a day. But far too often both the house-work and the looking after the children are sources of great exertion. Were the woman strong and full of vigor, she would turn each off lightly, and still be fresh and hearty at the end of the day.

With the father, as with the mother, the conclusion arrived at seems to be as follows: now that the day's work is done, no matter whether it brings with it strength or weakness, let us be perfectly contented with things as they are. If it makes us one-handed, so be it. If it stoops the back over, so be it. If it does little or nothing for the lower limbs, or cramps the chest, or never half fills the lungs, or aids digestion not a whit, so be it. If it keeps some persons thin and tired-looking, and does not prevent others from growing too fleshy, it never occurs to most of them that a very small amount of knowledge and effort in the right direction would work wonders, and in a way which would be not only valuable but attractive.

Most of us get, then, from our parents a one-sided and partial development, and are contented with it. Unless we ourselves take steps to better our condition, unless we single out the weak spots, prescribe the work and the amount of it, and then do that work, we shall not remedy the evil. More than this if we do not cure these defects, we will not only go through life with limited and cramped physical resources, with their accompanying disorders and ailments, but we will cruelly entail on our children defects and tendencies which might have readily been spared them, and for which they can fairly blame us. A little attention to the subject will show that the remedy is quite within our reach; and so plain is this, that a generation later, if the interest now awakening in this direction becomes, as it promises to, very general among us, our descendants will understand far better than we do that the body can be educated, as well as the mind or the moral nature; that, instead

of interfering with the workings of these, the body will, when properly trained, directly and materially aid them; and further, that there is no stand-point from which the matter can be viewed which will not show that such training will pay, and most handsomely at that.—*William Blake, in "How to Grow Strong."*

COMMON SENSE ABOUT DIET.

THE following articles from the pen of a physician in the *N. E. Farmer*, contains more common sense on the subject of diet than many large volumes which have been written by learned savants. We are glad to see that articles of this stamp are becoming much more common in the popular literature of the day than formerly. There can be no doubt that the excessive use of meat is one of the chief causes of the great increase of some of the most intractable and hopeless diseases with which the physician is called upon to cope. In England, vegetarianism is making great progress, and we have no doubt that the time will come when there will be much more interest in the subject in this country than there is at present.—Ed.

Flesh is not an indispensable article of food. One may discard meats of all kinds, and live to old age on fruits, vegetables, and the various grains. The health seldom suffers any impairment from such a change, and often is much improved. Neither is the vigor of mind nor power of body impaired. Not a few of those who have attained to a remarkably old age and preserved to a notable degree their powers of mind and body, have been those who lived principally upon a vegetable diet. Those nations whose people subsist largely on vegetables are not inferior in mental or physical powers to those who eat most freely of meats. The hardy Scotch, living on grain and vegetables mostly, are not surpassed in vigor and activity by the beef-eating Englishmen. The Russians, whose diet contains very little flesh, are noted for their fine physical development and powers of endurance.

Many of our people eat too much flesh, causing injury to their health. The long train of bilious diseases and gouty attacks are largely due to eating too freely of meats. Excess of animal food is also regarded by some radical writers as a cause

of consumption and other lung diseases. Scrofula, some forms of kidney disease, and other affections, are attributed to the eating of too much meat. Persons who pursue in-door occupations, requiring only a limited amount of active exercise, are more injuriously affected by animal food, than those who lead an active out-door life. The carnivorous animals, like the lions, tigers, and wolves, are generally very active in their habits, taking a large amount of vigorous exercise, while the herbivorous animals, like the ox, sheep, and others, are of a more quiet disposition. The man who eats freely of flesh, and imitates the carnivorous animals in the activity of his out-door life, will suffer little inconvenience therefrom, while he who leads a sedentary life and eats freely of meat will suffer from various diseases.

The taste for flesh is largely, if not wholly, acquired, and we are apt to mistake the cravings of appetite for the demands of nature. Many think that flesh is indispensable. Unless they have their regular supply of meat, they feel the want of it—do not feel as strong as usual—and that no other food with them can take the place of meat. The fact that they feel stronger after eating meat is regarded by many as sufficient proof that meat is just what they need to make them strong, active, or well. A glass of wine would also make them feel stronger and active for awhile, yet they would be aware that the sensation was merely delusive, and would soon pass away. The same is true to a considerable extent of the first effects of meat. It exerts a stimulating effect upon the stomach, which imparts the feeling of strength, when first taken. The sense of strength after meat is felt more immediately than after a meal of bread and fruit, but does not last so long. A laborer on a diet of bread, fruit, and vegetables, will endure to labor longer without feeling exhausted than on meat.

Meat is not especially injurious, except when excessively eaten. Few should eat it more than once a day, and then very moderately. It is not indispensable, and a family might get along without it for almost any length of time, and suffer no real injury, if provided with a wholesome variety of vegetable food. The health of many families would be much improved by the change. Dr. Cragie, author of a work on the practice of medicine, says: "Diet, consisting of animal food, is not requisite, either to preserve health or to maintain strength, and diet of articles

from which the flesh of animals is altogether excluded, is perfectly adequate to the sustenance of the human body in a state of good health and strength."

Dr. Adam Smith, in his "Health of Nations," says: "It may indeed be doubted whether butcher's meat is anywhere a necessary of life. Grain and other vegetables, with the help of milk, cheese, and butter, or oil, (where butter is not to be had,) it is known from experience, can, without any butcher's meat, afford the most plentiful, the most wholesome, the most nourishing, and the most invigorating diet."

The cost of meats is a serious objection to their use by large numbers of our laboring people. To provide beefsteak for a family is a severe tax upon a laborer who has only his daily wages to depend upon. Many, however, strain a point to furnish a good supply of meat for the family, believing it essential to "good living." Flesh is popularly regarded as containing nutriment in a highly concentrated form. Such, however, is not the case. Beef contains only about 26 per cent of nutriment; pork and veal, 24 per cent; mutton, 30 per cent; and poultry, 26 per cent. The grains are much more concentrated food. Bread made from wheat flour contains 90 per cent of nutriment; corn bread, 91 per cent; and rye, 79 per cent. Thus it will be seen that the meats contain less than one-third as much nutriment as the grains, while their cost is much more.

Meats sell at from ten to twenty-five cents per pound, while the grains sell at from two to four cents per pound. No man should over-work himself to provide meat for his family, for they will be just as well off without it as with it. If a man has means so that he can afford to purchase meat, then there is no serious objection to a limited use of it. No family should be deprived of other necessities in order to secure a supply of meat. All the food needed for the family can be purchased for a comparatively small sum in this land of plenty, and no laborer who has work need allow his family to go hungry, provided he invests his money wisely, purchasing that kind of food which is best, and which, fortunately, is also by far the cheapest.

—To be truly happy, forget your unhappiness in ministering to some one more miserable than yourself. Whosoever carries coals to another will warm his own hands.



TEMPERANCE ^{AND} MISCELLANY.

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

BE TEMPERATE, BE PURE.

BY F. A. PARKER.

[WRITTEN by request, and read at the last annual meeting of the New York State Health and Temperance Society.]

You have asked me to write you a poem,—
A poem on temperance true;
But, dear friends, I have nothing to offer
That would suit or enlighten you.
Yet there's One who has given a poem,—
A poem true, lovely, and grand;
His poem shall go throughout all the earth,
And be heard in every land.

This poem was written long, long ago,
It is old yet 'tis ever new.
And if we give heed to it's counsel wise,
It will make us both pure and true.
Then list to the voice of the Master,
To Jesus the King of all bards,—
Listen close to his beautiful poem,
Of holy and heavenly words.

O man, do'st remember in years long gone by,
How I came to your fallen earth,
And yielded my life that you might not die,
And taught you my gospel truth?
Do'st remember, there, how I said to you,
Before I ascended the sky,
I go to prepare a mansion for you
In my Father's blest house on high.

Behold I have builded a city grand
With streets of the purest gold,
With walls of jasper and gates of pearl,
It's beauties are all untold.
I have placed within it the tree of life,
And a river of water pure,
And to all who eat and drink of these,
Eternal life shall be sure.

Behold the place I've prepared for you,
No sin will there allure;
And I tell you this lovely home of mine
From pollution must be secure,
But thou, O man, hast not walked with me,
And obeyed my wise commands.
In many ways thou'rt become defiled
And polluted throughout your lands.

The habits you have of eating
Those things that defile the blood,
And the cup you quaff at your tables
Was not filled by the hand of God.
Thinkest thou, O man, to come hither
With those habits so dear of old?
Read, Read, 'tis written, that none
Shall defile this city of gold.

Thou can'st not bring to this city fair,
Your quid, your cigar, or snuff,
Nor come *yourselves* while polluted thus
With such vile and sickening stuff.
Thinkest thou to bring your coffee and tea,
Your beer, your alcohol, wine?
I tell you that none of these filthy things,
Shall enter this city of mine.

Thinkest thou with those bloated features to come,
And that weak and beclouded brain?
Or with that cowering, shrinking form—
Those limbs that stagger with pain?
Do'st thou think that mandlin stammering voice
And that foul and sickening breath
Can enter this home? Who abides in these
Must abide in eternal death.

Then turn, O man, from such habits vile,
Turn away from such evil ways.
Your body should be a temple rare,
To show forth My glory and praise,

Turn away from polluting diet,
Eat pure and wholesome food,
Turn, turn from your vile beverages,
And drink only that which is good.

Turn, O turn, for I am not willing
That any of you should die,
Be pure and holy and you shall share,
My beautiful home on high.
Come, come to these glorious mansions,
Whose beauties are all untold.
Come, come to the place I've prepared for you,
This city of gems and gold.

WRITTEN FOR GOOD HEALTH.

TEMPERANCE TEACHING IN PUBLIC SCHOOLS.

BY JULIA COLMAN.

In the winter of 1870-71, a temperance worker, wishing to study the temperance problem under its best conditions, sought and secured a series of engagements to lecture in the State of Maine. As she dealt mostly with first principles, showing up the nature and the effects of alcoholic drinks, and assailing its pretended claims to use as a medicine, she not only received the thoughtful attention of many of the best thinkers and warm commendations from them, but she was permitted to learn their views, and thus she accomplished her primary purpose, but that she was much more a learner than a teacher was evinced by one singular fact. Everywhere she went she suggested among the effective remedies for intemperance, the teaching about the nature and effects of alcoholic drinks as a definite part of our common school education. This was suggested modestly as was becoming in a visitor to "the Dirigo State," but it was suggested definitely and repeatedly. It could not be urged very sharply for immediate action, inasmuch as there was no school-book then prepared that could be used for that purpose, but that it was well understood became certain from one indorsement that it received just previous to her leaving the State, at the annual meeting at Augusta, where one of the acknowledged leaders of public sentiment distinctively enunciated it as one of the desirable steps to be taken. This fell echoless on that earnest crowd of workers. No one seemed to see its importance, but when the movement had taken definite

shape, some seven or eight years later, text books had been prepared and the women were agitating for their immediate introduction and getting up meetings to influence educators and the public, one of these earnest workers was called upon to lend his influence and make a speech upon a certain occasion. He listened attentively to the plan, promised his co-operation heartily, and before the lady left he said "This introduction of the scientific aspects of temperance teaching into the schools seems to me so exactly the thing to be done that I am astonished and ashamed to think that I had not long ago thought of it myself," or words to that effect.

One would naturally suppose that the mere suggestion of such a remedy to advanced thinkers, and especially to men who had for years been engaged in juvenile temperance work would have caught like the spark in tinder. Its failure to do so is only another illustration of the surface character of our work hitherto. We fail to recognize intemperance for the deep seated evil that it is. We fancy that we can get rid of it by hurrabing or praying or legislating, or by some trick or device without a thorough education of the people as to the nature and effects of all intoxicants. It is true that enthusiasm must be aroused, that the laws must be made right, that religious convictions of duty must be brought to bear to make people do as well as they know; but then they must *know*, and know correctly the true nature of the evil in order to meet it effectively. They cannot learn all at once, but they must know the nature and effects of alcohol or they will ever be deceived by it, and having learned that, it will be comparatively easy to learn the nature and effects of all other intoxicants. With the acquisition of this knowledge, probably some special attention will need to be paid to the great fact that the undisciplined tastes and appetites of men are no safe guide to indulgence, much less the perverted tastes and appetites of the existing generation. We confess we know of no study more suitable for the schools after the first rudiments, which are the key to all knowledge. For in the language of the little leaflet we are sending out to teachers, "What is the object of common school education but to make good and reliable members of the community. Nothing does more to-day toward destroying good and reliable members of society than the use of alcoholic drinks."

Four or five years later the subject took a more definite form in the W. N. C. T. U. which had the previous fall commenced their literature work by the appointment of a Publishing Committee, whose chairman was the identical lecturer in Maine above referred to. The first publication of this Committee was a package of fourteen "Union leaflets," one of which was entitled "To the Teacher," in which this plan was definitely proposed, and urged upon the teacher of secular schools. The only text book available was "The Catechism on Alcohol," which was not prepared for public school work, but was better than nothing to commence with. It had already been brought to the notice of the Indiana School Journal, and recommended for this use, and the following Resolution had been passed by the Indiana State Teachers' Association:—

"That such instruction and experiments be introduced into our schools as shall show the nature of alcohol, and its dire effects on the human system."

In 1878 the Juvenile Temperance Manual, prepared to assist the teacher in the use of the Catechism on Alcohol, was published; and though this also was planned and intended only for the temperance school, it has been used with the catechism in many small public schools and in the lower grades of larger schools.

By this time our British friends were moving in this matter, and they moved grandly. No better man than Dr. Richardson could have been selected to prepare a lesson book on this subject, no one whose name would have given more weight or secured better co-operation, because the first requisite in such a book is correct teaching. Everybody has confidence in the *correctness* of the "Temperance Lesson Book" which made its appearance in 1878, though the English themselves criticise its style and its use of technical terms. They say they want a simpler book, and they have made several attempts to secure it, with as yet but indifferent success.

Shortly after this, Mrs. M. H. Hunt, of the Woman's Christian Temperance Union in this country, began to give this subject her special attention. In endeavoring to secure the introduction of temperance teaching into the public schools of Boston, she found the Lesson Book too advanced for the grades she wished to suit, and she asked for a modification of the "Catechism on Alcohol" for this purpose. But

it was soon decided that a better way would be to prepare a new text book. Mrs. Hunt "accepted the amendment" and "Alcohol and Hygiene" was the result in 1880. This is a book about the size of "The Temperance Lesson Book," but it takes a wider scope, covering the ground more completely not only as to physical but social, moral, and economical results. It also contains a "Teacher's Appendix" where by frequent references from the text the teacher can find quotations of proofs from the best authorities with "chapter and verse" about the most important statements in the text. This introduces the student to a wide range of the most valuable reading matter extant on the physiological aspects of the question, thus making it a valuable reference book for speakers and writers for which purposes, indeed, it has already been used quite freely. As a text book it is intended for the lower grades of grammar schools, while "The Temperance Lesson Book" is intended for the higher grades and for high schools and colleges, and both are meeting with as fair an amount of appreciation as could be expected from the newness of the subject and the indifference of the people and their ignorance of its importance.

Scientific Instruction is now a special Department in the Woman's National Christian Temperance Union. The accomplished and capable Superintendent, Mrs. Hunt, spends much of her time in co-operating with the Local Unions in efforts to secure the introduction of Scientific instruction into the schools. They arrange lectures for her in their several localities, get her to interview their school boards with a view to direct results, procure her a hearing before college faculties, Normal schools, Institutes, and other Educational Meetings, and sometimes before legislative committees, and she also addresses summer assemblies on the same topic. Other lecturers and speakers are also coming to the front in the same interest. Local Unions in all parts of the country circulate leaflets and tracts on the subject. The Literature Committee publishes the following list for such purposes:—

To the Teacher,
Educate the Better Classes,
Teach the Children,
Teaching Temperance,
The House on the Sand,

these all being four page Union leaflets selling at 22 cents per 100 post paid. The

Literature Committee are now sending these leaflets freely to all the teachers who can be reached, the names pressing in from all parts of the country for that purpose, and everybody being free to send. This Committee is also sending copies of the principal text books with these leaflets to the Superintendents of Public Schools in each State, not for notice or recommendation, but that they may know the ground occupied, the reason for the movement, and be ready to help as occasion may favor. Many very cordial replies have been received from these Superintendents, and the outlook in this direction is promising. Besides this each State W. C. T. U. has a Department of the same kind in which the (lady) Superintendent in many cases is doing excellent work and the County Unions are also beginning to join in the effort.

Many schools have taken up the study and find it extremely interesting. Of its usefulness no one can doubt who thoroughly looks into the matter. As might be expected, this rouses the wrath of the brewers and distillers, and where they are able to influence the school board unfavorably, they often do so, and the usual uphill work becomes forthwith perpendicular. In a large proportion of cases the Women's Unions have not only been obliged to do the work of introduction, but to *supply the books*, which is very surprising since the men usually carry the purses. In one case a Local Union furnished a State Normal School with 100 text books and an excellent Temperance Library, which books we believe were put into immediate use. In Portland, Me., the books introduced as readers were very soon officially recommended by the Mayor to be used regularly as text books. But the work is as yet but just commenced. It will need money, co-operation, perseverance. We believe the women have the latter, and we hope the former will be forthcoming from our readers and from all others who may be familiar with its details and its methods.

—The little nine-year old daughter of one of our temperance workers wanted some indulgence, some time ago, which her mother did not think it best to grant. "No," said the latter; "Dr. Jones says that is injurious, and is what makes you sick." "Dr. Jones!" exclaimed the child, indignantly. "What does he know? He told you to take whisky when you were sick." No moral necessary.

WHAT HAS BECOME OF ALL THE LITTLE GIRLS?

WE look in vain into many pleasant homes; or into the streets, cars, or steamers, for what was once a common sight, and was then, and ever must be, the sweetest object in nature,—a simple, artless, *little girl*, with all the pretty, unaffected ways and manners of unsophisticated childhood fresh and beautiful about her. There is no lack of small beings dressed in such a marvelous style that Darwin himself would be puzzled to make out the class to which they belong; but we find nothing to remind us of the little girls we used to know, either in dress or manners.

In former times a pretty muslin bonnet, or a simple close-fitting cottage straw, was thought the most appropriate covering for a little head, protecting the bright eyes from too intense light, and shielding the rosy cheeks from the sun's too fervid kisses. But now we see *something* placed on the sunny curls—leaving eyes and cheeks entirely unprotected—which is elaborately trimmed with bows, feathers, a flower-garden, or perhaps a mingling of both; for, although it is too small for even a good-sized doll, the milliner, with an ingenuity which would have been praiseworthy if exercised in a more sensible manner, has contrived to pile up trimming enough to hide even the faintest suspicion of a bonnet. But what is sadder than the lack of true taste and good common sense in this stylish affair, we see no semblance of child-like simplicity in the wearer. And the bonnet is but the beginning of this unfortunate change which we mourn. The pretty "*baby waist*," the plain white dress, the neat muslin or merino, so appropriate, which little girls used to wear, are supplanted by incomprehensible garments, the fac-simile of the grand dame's attire, flounces, fringes, bows, and double-skirts looped and festooned in an astounding manner, the child's—no, we mean the *young lady's* height, there are no *children* in these days—is less than her circumference, and the "mite" who is made to carry such an incongruous burden, totters about on high-heeled boots. This tiny specimen of womanhood, hardly weaned from her mother's breast, or more probably, a wet-nurse's, shakes out her redundant robes, bending and twisting her small body in grotesque imitation of the woman spoken of by the prophet Isaiah "with haughty mien; walking and

mincing as they go." See how the little ape looks over her shoulders, as she tottles about, to be sure that her skirts give her dress and figure the correct *wiggle* her sharp eyes have observed in the stylish mother and her fashionable friends. It is lamentable that all the simplicity and beauty of babyhood and childhood should be destroyed by fashion.

Added to the absurdity of the dress, these little women attempt to discourse on the "latest style." With their companions or dolls you will hear them imitating the discussions on this subject that they daily hear in the parlor or nursery from their mother; or still imitating with contemptuous toss of their little heads, they will inform their listeners that they "couldn't think of sociating with those girls, because they are not *stylish!*"

A few days since, as we passed out of a store on Broadway, our attention was arrested by the conversation of two little figures seated in a fine carriage, waiting, doubtless, for mamma to finish her shopping. They were dressed in a style positively overwhelming. Their hats were wonders of skill, their gloves had the orthodox number of buttons with bracelets over them, a dainty handkerchief suspended from a ring attached by a chain to another ring on the little doll-like fingers. The dress was simply indescribable. The elder was speaking to the younger, who, scarcely more than a baby, sat demurely by her side. "Oh, mercy! just look at that horrid little girl who is crossing the street! She has no hoops on, and not a single flounce—no trimming at all on her dress! And, oh! see her gloves!—why, she has only one button! Pshaw! she's nobody—not a bit of style!"

The youngest lisped a reply, which we lost as we passed on; but it was painful to think of the training they must have received which enabled them at that early age to judge a child of their own years so quickly by the rules of fashionable dress, and because her attire was not in exact accordance with that week's style, turn from her with contempt as something too low for their notice.

Then, again, how soon a child taught by daily precept and example, learns to watch her little companions with envious or exultant feeling, as the case may be. How quickly she begins to grow hollow-hearted and deceitful; receiving, as she sees her elders do, a companion with open arms, or a welcoming smile, expressing

the greatest affection, but the moment she leaves begin to criticise or make unkind remarks.

"I don't like Nelly one bit, mamma; she's such a proud, stuck-up thing! I suppose she thought I should feel bad 'cause her dress had more trimming and was a little newer style than mine. I didn't let her know that I noticed it. But I do think it real mean, mamma, that she should have nicer things than mine. Papa is twice as rich as her father. It made me mad to see her show off her dress; and she kept looking at mine and sister's in such a way."

"I hope, my dear, you were polite to Nellie."

"Oh, yes! But, mamma, I was awful glad when she left—though I was just as smiling and pleasant as could be to her face."

"That's a good girl. You must always be very polite and cordial to your companions, you know. But I must say I think Nellie was quite vain; and you must never show that you are proud of your clothes. I shall go out to-morrow and get that pretty dress you teased so for, I think."

"O, mamma! I am so glad! And as soon as it is made I'll go right over and call on Nellie. Won't she feel bad when she sees my new dress! It will be ever so much prettier than hers."

And the mother smiled complacently, with never a thought of the improper and wicked feelings she was cultivating. O mothers! How can you be so blind! Both by precept and example you are teaching your children to make dress their idol; and to know very little of anything but that which pertains to fashion; to be envious or contemptuous of their little friends and companions, according as they are dressed better or worse than themselves. Can you ever reflect that God did not commit such treasures to your keeping without meaning some day to call upon you to render up the account of your stewardship? What can you say, when asked how you have trained the young souls given to your care? Can you reply, We have been instant in season and out of season in teaching them—what? To work for the good of others; to learn to do right; in all simplicity to love and obey the Saviour, who, taking a little child in his arms, said, "of such is the kingdom of heaven." *Of such?* Ah, no! Not of those children that you are training to avoid, not evil communica-

tions, but unfashionable companions; to look on the outward adorning, and not on the heart.

But it is not alone the wealthy, indeed, who make no pretence to any higher law than their own selfish gratification, who bow the knee to fashion. Christian mothers, are you guiltless? Think of the time, the health and strength, given to dress; the bondage which compels you to pervert all real taste, to do violence to your own natural instincts of neatness and true elegance, and accept the absurdities of fashion, simply because the ruling style requires it. If you are thus influenced and beguiled, do you flatter yourselves that your children will not, from their earliest years, regard such homage as important? We do not think it wrong to dress neatly and in as good taste as possible. We blame none for giving so much thought to their own dress and their children's as to provide those articles that are appropriate and becoming to the different styles of face, figure, and complexion. It is natural, and we think right, for a mother to dress her darlings as neatly and prettily as she can, without unnecessary waste of time and strength; but we do think it sin to spend money and time lavishly in following the dictates of fashion, and not of good taste and common sense; no one pretends to believe that there is either of these in the present style of dressing. It is utterly destitute of grace, is ridiculous to the last degree; but *fashion* compels, and women, *Christian women*, obey, and teach their little daughters like obedience! Oh, the money, time, and strength given to destroy, by the absurdities of fashionable dress, every vestige of beauty and grace which God gave you in your little ones! Take the week through, hour by hour, do you not give more time and thought to your own and your children's dress, than you can spare for your Master's service? Do not your children gather from your daily walk and conversation that to be fashionably dressed is of more importance than loving and serving the Saviour, who died for them and you? Judging by your daily conversation, which will they consider of the greatest importance,—the service of God, or the devotion to Fashion? To which do they see you giving the largest part of your time,—the adorning of their little bodies, the plaiting the hair, the wearing of gold, and putting on of apparel; or in teaching them that which is not changeable, not corruptible, even the

ornament of a meek and quiet spirit, which is in the sight of God of great price? What can you say, fashionable Christian mother, when he calls you to give an account of your stewardship?—*Mrs. H. W. Beecher.*

GOOD TEMPERANCE WORK.

THE recent victory for prohibition in Iowa was one of the grandest triumphs for the temperance cause achieved in modern times. A thousand times the question has been asked by workers in other fields, "How did they do it?" The following extract from an article by Frances E. Willard explains one of the methods employed, and we doubt not that the influence of the children, brought to bear in so earnest a manner as it was, was one of the chief instrumentalities in securing the victory:—

"Added to these instrumentalities, are two others of paramount importance. The ministers of Iowa preach against the making and the use of intoxicating liquors as a drink, with almost concurrent testimony and power, while the Sunday-school is earnest, clear, and systematic in its teaching. The Quarterly Temperance Lesson and exercises have been generally introduced, and meet the hearty approbation of the people. The recent Sunday-school Convention at Waterloo was a real temperance jubilee.

"Let me conclude with a few incidents of the memorable day (June 27) when the people of Iowa voted to amend their constitution as to forever prohibit the manufacture and sale of intoxicating liquors, including wine, beer, and ale, as a drink.

"Mrs. Goode had issued 'Military Order No.—' to her Band of Hope; namely, that 'at 9 A. M., they should meet at an appointed rendezvous, wearing their badges, and carrying flags and banners, and should march through the streets with a band of music at the head of their battalion, singing, near the polls, their cold water songs, giving three cheers for the amendment, and returning in good order to the starting place.' These young folks were not raw recruits,—many a time had they marched before. They were not ignorant of the import of this day. 'The Constitutional Amendment Catechism' had been so carefully studied at the regular meetings, that little people, eight years old, knew the difference between constitutional and statutory law—and the reasons of superiority in the first. They knew the facts and figures—having them illustrated by diagrams and

pictures. 'How much grain is used in our breweries?' 'What is Iowa's annual drink bill?' 'What proportion of our taxes, crime, pauperism, lunacy, comes of strong drink in our state?'

"These and a score of such subjects had been thoroughly set forth in the Socratic method, and few voters were better informed than these boys and girls. They had also been urged to repeat all this at home, and to plead with fathers and brothers to vote aright. With a woman's tact, Mrs. Goode had told them that at present the theory of our government is, that the father represents 'the people' in his home, and that is why we say 'we, the people of Iowa' will vote on these great public questions and decide them. So she urged the children to get papa to take the census in his own home, and go to the polls to represent not himself only, but *his constituency*.

"It is well known in Iowa that the children did a vast amount of delightful and most effective electioneering at their own home hearths; and on the final day barefooted urchins went timidly up to well-dressed business men, and said, 'Please, sir, won't you vote for my mother and me?—my father is a drunkard.' Little boys marched up and down through the crowd of voters with banners wreathed in evergreen, whereon, in fleecy white letters, cut from cotton batting, were the words, 'Please vote for the home,' or 'Tremble, King Alcohol, we shall grow up,' or 'Our guns are ballots, our bullets are ideas.' Little girls went out two by two, with baskets heaped with button-hole bouquets, and while at a little distance, fond, motherly eyes watched their proceedings. They said to voters: 'Won't you put in a ballot, sir, for the amendment?' And if they said they had, or would, the little fingers handed up a dewy bunch of flowers. I gained new hope for poor humanity as I saw rough men carefully pinning childhood's gift of 'posies' on their checked shirts; Germans and Swedes fastening a sprig of mignonette in their old hat-bands; and colored men, with gleaming ivories, tying a full-blown rose to the only button left upon a threadbare coat, and saying, 'Yes, honey, dis chile is fur de 'men'ment every time.'

"In one of the towns, the mayor brought in a bloated German beer-drinker to vote the 'whisky ticket' when the German's children, fresh from the Band of Hope procession, hurried forward, the little girl throwing her arms around her father's neck, and saying, with tears, 'Papa, please vote for us at home,' and the boy, who was a cripple, taking him

by the hand, with the same plea. 'Ach, mein Gott, dis vas too much!' exclaimed the German, breaking away from the man who had counted on him, and going up to the ballot-box with the vote his little daughter gave him, while she held one hand, and the lame boy hobbled on the other side as guardian. Not an eye that looked upon the group could see it clearly because of tears. 'A touch of nature makes the whole world kin.'

WOMAN'S WORK.

WOMAN holds her commission from God; her natural sphere is the nursery and the Infant Training school, where she continues her work of gestation, which is not completed until she has formed the character of her offspring.

The factory is not woman's place, as Gladstone says: "He who will free woman from labor in the factory will be a benefactor of the family;" still, as we cannot afford to lose the labor of half the race, woman must work for the race by working upon the race, fashioning and developing its character; and that she only can do when Kindergartens cover the land in which she is prepared for her work.

Why were the Romans during the better age of the republic the model citizens of the world? Because they had model mothers for their educators. Fill the land with Kindergartens, training women for their future duties as mothers; and as we shall have then more than Roman mothers, we shall also have citizens who are more than Romans.

Woman in the barbarous state of society is the slave; in the semi-barbarous she is the toy and the tyrant, and in the perfect state of society she is the educator.

When women will be educators of the race they will be its saviours; to day, show, pride, and vanity make them its destroyers, leading on men by their extravagance to corruption in private as well as public business, until confidence in men and institutions is to-day fairly gone, and the downfall of the nation almost inevitable.

To let a woman speak about her own sex, we will quote the well-known and competent Emilie Davies, who said before the National Association for the Improvement of Social Science: "Is it not true that to amuse themselves and other people is the great object in the life of women, and it is possible that their sedulous devotion to this one object can fail to react upon the men with whom they associate? Who gives the tone to what we

may call lax and luxurious homes? Who teaches the boys that hard work is foolish self-torture, that an easy life is more to be desired than the fine gold of intellectual attainment? Not their fathers. What is the ideal presented to young girls? Is it anything higher than to be amiable, inoffensive, always ready to give pleasure and to be pleased? Could anything be more stupefying than such a conception of the purposes of existence? As long as women live only for trifles, men will live only for making money."

Only when women will be brought up to be the educators of the race will men live for great purposes, and every family will be a center from which saving influences will go forth to bless the race.

Women have infinitely more tact for developing character than men, though they may have less fitness for teaching Aristotle's metaphysics, which, however, are best not taught at all.

Pessimists may stamp every thought of an upward tendency as an idle dream, but we cannot believe men, women, the government, and our whole civilization hopelessly corrupt.

Race Education, or Hereditary Culture, aiming at the prevention of race deterioration, insists upon fitting woman for her domestic duties, upon the proper performance of which many lives depend. She has under her supervision the home, the food, the clothing, the exercise, the rest, sleep, and the entire habits of the family. She nurses them in sickness, and by her economy or lavishness brings comfort competency, and general improvement, or poverty, with all its want, misery, and deterioration.—*Royce*.

School Luncheons.—To mothers, aunts, or sisters who do up the school luncheon for the youngsters: pray make it as attractive in appearance as possible. There is truly nothing very inviting about a thick piece of dry bread and butter and a cookie, all rolled in a piece of coarse brown paper, washed down by a drink from the cup that "goes the rounds." Such a lunch will often impair the appetite of a fastidious or delicate child, and he will go without rather than eat it. A little care in the cutting of the bread; the doing up of the cookies or crullers in tissue or white paper; the sauce or custard put into a pretty cup, and all wrapped in a clean white napkin within a *bright* tin pail, or, better still, a pretty lunch basket, will by the pleasure it gives the child, well repay the extra care and thought.

POPULAR SCIENCE.

—RECENT observations seem to prove that the moon is destitute of an atmosphere, which has been a question of dispute among scientists for many years.

—A NEW parasitic disease has attacked the beans in Algeria and threatens to destroy the entire crop in that country. The parasite appears in the form of a whitish covering which is sometimes so abundant as to hang in tufts from the stems and branches of the plants which it attacks.

—A FRENCH ship was recently found to have a mass of coral clinging to its bottom which on investigation was found to have formed in the short space of nine weeks, which suggests the query whether it will not be necessary for some of those savants who have based calculations of the age of the world upon the supposed slow growth of these formations, making it appear that immense periods of time are required for the production of a small island through the agency of the coral insect, to revise their calculation a little.

—One of the richest deposits of fossil insects is found in the tertiary lake-basin at Florissant, Col. Sixteen different species of insects have been found there, and besides these a planorbis shell, eight species of fishes, a tolerably perfect sparrow, and several thousand specimens of thirty-seven species of plants.

Wooden Thread.—A factory for making thread from wood has been opened in Sweden. The thread is said to be of good quality, and is much cheaper to manufacture than the ordinary kind.

Impermeable Leather.—Leather may be rendered water-proof by being dipped in a solution of soap and water. The tannic acid decomposes the soap, and transforms it into fatty acids which render the leather perfectly impermeable.

A Difference with a Distinction.—Alphonse Karr, talking of food adulteration, remarked: "It's very curious, isn't it? If I poison my grocer, the very lightest sentence would be hard labor for life; but if my grocer poisons me—ah, that's a different thing!—he is fined forty francs!"

Ancient Surgical Instruments.—A remarkable collection of surgical instruments has

been discovered at Pompeii, and removed to the Naples Museum. It evidently belonged to one practitioner or establishment, and is as large an equipment as the modern surgeon is usually supplied with. One of the most interesting instruments is a long rod with a metallic plate fixed at one end at an angle of 135°. It was at first thought to be a cautery for internal operations, but its remarkable resemblance to the modern laryngeal mirror suggests the possibility that it was employed in a similar manner in ancient times.

The Microphone as a Water-Witch.—According to the *Popular Science Monthly* a new use for the microphone has been discovered by a wealthy land-owner of the Tyrol. He placed the sensitive instrument upon the ground at spots where he thought subterranean springs might exist; and by listening at the connected telephone, was enabled in many cases to hear the murmuring of the imprisoned waters. It is to be hoped that the microphone will supersede the witch-hazel still employed by many superstitious farmers to locate hidden springs.

A Mechanical Teacher.—The greatest difficulty which students of foreign languages meet with, lies in the fact that they cannot hear them spoken continuously until the ear becomes accustomed to picking out the separate words. The Polyglot Institute of Paris proposes to employ the phonograph for this purpose. Thus a student of French could sit in his room, and by turning the handle of his phonograph, listen to an uninterrupted flow of the purest French until his ear was perfectly trained in all the intricacies of the Parisian accent.

Real Lead Pencils.—It may not be known to every one that the lead in ordinary lead-pencils is not lead at all, but a substance of an entirely different character called plumbago. This fact can be easily proven by inserting the point of a common lead-pencil in a gas light, or ordinary kerosene lamp, when it will be found an impossibility to melt off the pencil point. You can thus easily heat to a red heat a piece of steel, but you cannot melt a pencil. A German paper, however, now announces the introduction of pencils in which the real lead is used, the compound consisting of lead, bismuth, and quicksilver. By varying the proportion of quicksilver, the quality of the pencils is varied from hard to soft at pleasure.



BATTLE CREEK, MICH., SEPTEMBER, 1882.

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

TERMS, \$1.00 A YEAR.

BAD AIR.

A FEW months ago some meddlesome person instituted an examination of the Packer Institute, of Brooklyn, N. Y., with reference to its ventilation. A skillful chemist was sent to the institution for the purpose, and took samples of air from various parts of the building. Upon examination, the proportion of carbonic acid gas in these samples was found to vary from 10 to 60 parts per 10,000.

The significance of these figures becomes apparent when it is stated that 4 parts in 10,000 is the normal portion of carbonic acid gas in the atmosphere, and that the experiments of numerous scientists have shown beyond question that an increase in the proportion of carbonic acid gas to 6 parts in 10,000 is productive of serious disease, particularly of disease of the lungs. It appears then that in the institution examined, the amount of carbonic acid gas was in some parts ten times greater than the extreme limit to which this poisonous gas can be tolerated without injury to health. Some years ago an examination was made of the air of the sewers of Boston, which showed a smaller proportion of carbonic acid gas than in the best ventilated portions of the Packer Institute. Is it at all remarkable under these circumstances that some of the seven hundred young ladies who are attending this popular institute should suffer and decline in physical health? It is certainly time that our civil authorities recognized the importance of supervising the erection of buildings intended for use as school-rooms or for other purposes involving the aggregation of large numbers of human beings.

When the air of our school-rooms becomes ten times as bad as that of the average sewer, it is certainly time that the public was waking up to the necessity of reform. A few months ago we visited a large hospital containing more than one hundred patients, in which the provision for ventilation was scarcely sufficient to provide pure air for one individual. Only a short time ago we examined a church building which was heated by steam and was provided with no means of ventilation except two or three very small cold air shafts which were so situated that at seasons of the year when ventilation is of the greatest importance they would be certain to act as a means of introducing cold air rather than withdrawing foul air.

The Sanitarium, which has been provided at great expense with every sanitary device to secure the very best possible conditions for health, is provided with a square ventilating shaft 5 feet in diameter which is heated to such a temperature as to secure a constant upward current at the rate of 200 feet per minute. This, with other accessories and other ventilating apparatus, secures more than 3,000 cubic feet of pure air per hour, which is no more than is really required for health.

"TEMPERANCE" BITTERS.

IN our exposure, through the columns of GOOD HEALTH, of the various medical humbugs afloat in this quack-infested country, we have never taken the trouble to speak concerning numerous "Bitters," as they are termed, the manufacturers of which are good enough to supply us with almanacs gratuitously. We are led to

speak of them now by a question recently asked us by a Western correspondent, as to whether a certain brand of this popular remedy contained alcohol. We were at first a little surprised to have even the doubt implied in the question thrown upon the existence of alcohol in "bitters." It is an essential characteristic of bitters that they contain alcohol. The term "bitters" has even passed into a common synonym for liquor of any sort, and to "take one's bitters regularly," means nothing more than that the person to whom the phrase is applied is an habitual toper.

The manner in which the question was asked, however, seemed to indicate that the particular brand of bitters under consideration was made without alcohol, and made so on purpose. In fact, our correspondent intimated that they were cracked up to be a "temperance" bitters, and whatever other nasty ingredients entered into their composition, conscientious deacons might take them "regularly of a morning," as is their wont, without the slightest qualm of conscience. This was a discovery, indeed.

We sent in haste to the drug-store for a bottle of the salubrious compound, took it out of its paste-board case, and read the following legend:—

"Dr. Walker's California Vinegar Bitters; Sure cure for Bilious, Remittent, and Intermittent Fevers, Dyspepsia, Gout, Tape-worm, Sore-eyes," &c., &c., &c., &c. "NO ALCOHOL ENTERS INTO THE COMPOSITION OF VINEGAR BITTERS; that curse is not offered as medicine."

All our preconceived condemnation of bitters as an intoxicating drink vanished like a morning mist before the sun of Vinegar Bitters. We would test those bitters ourself to verify the statements on the bottle, and proclaim to all people that if they must have bitters, let those bitters be Dr. Walker's California Bitters, containing not one drop of alcohol, sure cure for bilious and intermittent fevers, tape-worm, itch, &c., &c.

We sent the bottle to the laboratory with orders to distil one-half of the con-

tents. In a few hours the laboratory clerk brought back a bottle containing the distillate. We examined it. It smelled like alcohol; it tasted like alcohol; it was alcohol. We dropped an alcohol-meter into it and it proved to be 20 per cent strong. To make sure, we repeated the distillation ourself, using the remainder of the bottle, and with the same result. Still further investigation brought to light the fact that the principal constituents of the celebrated Temperance Bitters were sour beer and aloes. All our faith in the temperance of Vinegar Bitters fell to the ground.

We have heard of Dr. Walker before. He is doing great things on the Pacific Coast for the cause of temperance and "Vinegar Bitters," and we do not hesitate to pronounce both him and his "bitters," an unmitigated fraud. Did he only advertise his nostrum as a specific for all the diseases it is warranted to cure, he would deserve the name of quack; but when in addition to this he uses the sacred name of temperance to further his mercenary aims, and introduces into temperate homes the very curse that he claims he is so anxious to avoid, no word of censure is too strong, no penalty too severe to meet his case.

DEPRAVED INSTINCTS.

Most persons shudder and their stomachs revolt at the mere mention of the horrible *gnappee* of the Hindoos, the bird's-nest puddings of the Chinese, the horse steaks of the Parisians, and the earth-worm soup of some continental gormands; but not a few of the same individuals raise no objection when invited to partake of a fashionable *paté de foie gras*, or to indulge in a bit of roast cheese which has an odor decidedly ancient and suggestive of decomposition. We have met people whose tastes had become so utterly perverted that they had acquired a decided fondness for cheese alive with "skippers." Some years ago, while stopping a few weeks in Wilmington, Del., completing the manuscript for a book, we devoted an occasional afternoon to the study of microscopic life by

way of recreation. One day we strolled down to the market place in search of a specimen of cheese containing "skippers," which we wished to make the subject of study. We wandered about for some little time among the different stalls without seeing what we thought to be a promising cheese, but at last were attracted by a strong odor of decay to a certain stand where numerous specimens of cheese were displayed. We inquired of the salesman if he could furnish us with a piece of very old cheese, something strong and well filled with "skippers." "Oh! yes;" he replied, "I have just what you want; it is just the thing for toasting. Most people like cheese containing 'skippers,' better for toasting than any other. It seems to be richer and more highly flavored." We secured a segment of the choice article which he cut from a mass far advanced in decomposition, half covered with green and brown mold, and odorous as a barnyard, and hurried to our room to study the lively fellows which we hoped to find sporting about in the fragment of rotten milk which we carried carefully wrapped in several folds of paper.

Imagine our intense disappointment when after an hour's anxious search by the aid of a good microscope, we were unable to discover a single specimen. Evidently the tiny creatures had become disgusted with their habitat and left for more savory quarters. We laid the specimen aside for further study, and went out on an errand. When we returned to a late dinner, we noticed that our landlady had a merry twinkle in her eye, but were quite unsuspecting of the cause until she accused us of lurching in our room—she knew we were opposed to eating between meals—and informed us that she had carried off on a chip the remainder of our meal as it gave rise to such an unsanitary smell in the house.

We have had no further experience with old cheese; but a rather funny story is told of Charles Lamb, the great wit, which is too good to be lost, as an illustration of the depraved condition of the civilized palate even in his day.

'One evening Mary Lamb took a sudden and violent fancy to have some Stilton

cheese for supper, an article of which they had not a scrap in the house. It was very wet, and getting rather late; but Charles, with that self-denial which showed itself in a life-long devotion to his sister, at once volunteered to try whether any could be got. He sallied forth, and reached their cheesemonger just as the shutters were being put up. In reply to his demand, he was assured that they had some fine ripe Stilton; and the shopkeeper proceeded to cut off a slice. As it lay on the scales Lamb's attention was forcibly arrested by the lively gambols of a number of little creatures which came to the surface of the "fine ripe Stilton." "Now, Mr. Lamb," said the cheesemonger, "shall I have the pleasure of sending this home for you?" "No, th-th-thank you," said Charles. "If you will give me a bit of twine I cou-cou-could, perhaps, l-l-l-lead it home!"

DIET AND WORK.

A FEW years ago, Dr. Frankland, an eminent English chemist made a very extended series of experiments for the purpose of determining the value of various articles of food in sustaining the strength during severe muscular effort. The following table prepared by him shows the amount of various articles of food required to enable a man to raise his own weight to a height of 10,000 feet, as in going up a mountain of that height, showing also the comparative cost of the several classes of food in England:—

	Price per lb. cts.	oz. required.	Cost. cts.
Oatmeal,	5½	20.5	7
Flour,	5½	21.0	7½
Peameal,	6½	21.4	9
Bread,	4	37.5	9½
Potatoes,	2	81.1	10½
Rice,	8	21.5	11
Cabbage,	2	192.3	25½
Hard Boiled Eggs,	13	35.3	30
Milk (per quart),	10	128.3	32
Lean Beef,	25	56.5	88

"The smallest quantity is required for doing the work, and at the same time it is the cheapest in price, 5½ cts. per lb.

We would require 20½ oz., the total cost being 7 cts. It is very closely run by wheat flour, which costs ½ ct. more, and ½ oz. more of it would be required. Potatoes are very low, and are expensive when you come to measure the work. 10½ cts. worth is needed to do the work that is done by 7 cts. worth of oatmeal. The quantity of cabbage required is absolutely ridiculous. A man, to do the work, would require to eat about a stone of cabbage, and who is sufficient for that? Of course it must be understood that this table merely gives the theoretical quantities that would produce the force. It is obviously impossible to digest a stone of cabbage, or five pounds of potatoes in addition to subsistence diet, nor would it be healthy to take large amounts of unbalanced food. Oatmeal and wheat flour have the advantage of being nearly balanced, and with the addition of milk, it would be possible to live on either of them for long periods of hard work."

It will be observed that nearly three times as much lean beef as of oatmeal is required to enable a man to perform the same amount of labor, and the cost is more than twelve times as great. This fact ought to be a sufficient answer to those who argue against the employment of fruits and grains as an exclusive diet that they are not sufficiently nourishing to sustain physical and mental vigor.

TOBACCO-USING AMONG CONVICTS.

BEING obliged to wait a few hours for a train in a large city containing a State penitentiary, while on a short lecturing tour recently, we took occasion to visit the institution. We had the good fortune to meet the courteous chaplain, who took pains to visit with us personally the various departments of the institution, explaining their working, and giving us much valuable information concerning the general management of the prison, the condition of its inmates, etc. Among the various industries in which prisoners were employed, we found one building devoted

wholly to the manufacture of tobacco. Some forty men were employed in this department making cigars and "plugs" for sale and for use by themselves and the other employees. We found on inquiring of the warden, that, with less than a dozen exceptions, the 640 inmates of the institution were inveterate chewers, each man being furnished with his weekly supply of tobacco as regularly as with his daily rations of food, and many of them receiving additional quantities of the weed, if they so desired. We were also informed by the warden that those who were not tobacco-users at the time of their committment to the prison, very soon became so under the universal example of those with whom they were mingled. Occasionally a prisoner becomes convinced of the harmful effects of the habit, and discontinues it; but only two instances of the kind could be recollected by the warden, and in these cases both returned to its use again after a week or two. Some years ago an attempt was made in this prison to restrain prisoners from the use of the filthy weed, the superintendent at that time in charge of the institution becoming convinced of its harmful character. Although the rule prohibiting its use was enforced for some months, the attempt was finally abandoned as it was found impracticable, owing to the fact that the tobacco manufacture was carried on during the whole time of the experiment. Nothing could, of course, be more cruel than to demand of men who were addicted to the use of the weed, total abstinence from its use while at the same time they were compelled to engage in its manufacture every day of their lives. The chaplain expressed himself as thoroughly convinced that tobacco was a great injury to the prisoners as well as to other human beings, and thought that they would be much better off if tobacco were wholly withheld from them, although he considered it impracticable to attempt to enforce such a measure while its manufacture was continued in the prison. The warden as-

sured us that he thought there would be no difficulty whatever in preventing its use provided it were excluded entirely from the prison, each convict being informed at his entrance that he must discontinue its use while there. He himself had been a user of tobacco for many years, but had discontinued its use some five or six years previously, and had experienced very great benefit in consequence.

It certainly seems a pity that those who control the affairs of the penitentiary should be unable to see that the small profit arising from the labor of forty men engaged in the manufacture of the filthy weed can in no way compensate for the expense incurred in supplying 640 men with the narcotic, by which they are rendered less efficient as workmen, and less capable of improvement under the discipline to which they are subjected, and by which it is hoped to make them better members of society when they are released at the termination of their terms of sentence. The chaplain himself expressed this view of the case, and remarked that he felt sure that the State could much better afford to allow the forty men engaged in this unhealthful occupation to remain idle than to employ them as they are at present employed. We suggest that here is an opportunity for some philanthropist to do a useful work for his fellow-men. The right sort of a person might gain great honor for himself and great good for humanity by securing the substitution of some other industry for this soul-and-body-destroying business.

RYE AS A CEREAL FOOD.

In this country, the value of rye as a food is not appreciated as highly as it should be. The principal use to which this valuable grain is put by Americans is the making of rye whisky, which is a misuse rather than a use. In some other countries this grain is valued as highly as we hold wheat in this country. This is particularly true in Portugal. The Portuguese peasant lives almost wholly upon a

bread-food known as *broa*, which is composed of a mixture of rye and corn-meal. Rye is almost identical with wheat in its chemical composition. It contains the same nutritive elements, and in almost the same proportion. It is capable of sustaining life for an indefinite period, since it contains all the elements necessary for the maintenance of life in its highest vigor. The less palatable flavor of rye is wholly a matter of taste which is the result of habit and can be changed by a little effort. Those who are accustomed to the use of rye bread find it as palatable as wheat bread to those who depend upon the latter as a staple article of diet.

The mixture of rye and corn-meal renders it more palatable to some people. This, in fact, is the manner in which it is most commonly used in Portugal. The advantages of this combination are thus set forth by the author of *Portugal Old and New* :—

“The universal use in Portugal of a double-bread food is a unique circumstance, and one well worth the attention of politicians and economists. The prejudices of mankind in regard to any change of the chief staple of their daily food are all but insuperable. During a recent famine in Bengal, the Hindoos often preferred starvation to a change in the quality of their rice. A food, therefore, composed of two different cereals has certain great and important advantages, for the proportions of maize and rye can be altered *ad libitum*, without much change in the quality or appearance of the loaf. To the use of this bread-food I believe some large part of the well-being of the Portuguese peasant may fairly be ascribed. He is insured against periodical famine, with its disastrous consequences, such as have followed rice famines in India, the great potato failure of Ireland, or even such as would accompany a wheat scarcity in England.

An entire failure of the maize crop is almost impossible in Portugal. The worst year is a very dry, hot one; and such a

season greatly stimulates and increases the productiveness of low-lying lands which have an unfailing supply of water, while a very wet year promotes the growth of maize in the upland fields. Again, the cold summer, unfavorable to maize, suits rye, and a comparatively good harvest of this crop may be looked for whenever the maize crop is bad. When maize is scarce and dear, less in proportion to the rye can be used in the loaf, and *vice versa*; and, in fact, this adjustment of the proportions of the two corns takes place nearly every year and in nearly every district. In the maize producing province of the Muibo, and in lowland districts generally, the usual proportions are eight parts of maize to one of rye, and in the rye lands, among the mountains, these proportions are almost exactly reversed.

NO ROOM TO BREATHE.

MRS. JANE GREY SWISSELM has been visiting several gymnasiums for ladies, and in describing them remarks that she has seen girls going through the drill of the gymnasium with high heeled boots on their feet buttoned so tight that it must have been impossible for the muscles of their limbs to move freely, and out of the question for them to make natural or healthful movements. Even the circulation of the blood in their pedal extremities must have been seriously interfered with. In addition, while dressed in a very becoming gymnasium suit consisting of a loose blouse with short skirt and turkish trousers, under these healthful-looking garments there was concealed the torturing corset compressing the waist to such a degree as to make healthful expansion of the lungs impossible, and the whole thing a farce. Mrs. S. says further:—

“Leave out those women who have crossed the ocean as steerage passengers within five years, and there is not one woman in America for every thousand, who has room to breathe freely inside her clothes; not one in a thousand the walls of whose chest are not flabby from outside supports which deprive them of the

exercise of their proper functions. When a woman, to prove that she does not lace, puts her hands on her sides and presses them in like a parlor rubber ball, she proves that the walls of her chest have been so enfeebled by corsets that they can no longer guard their vital contents from even so slight a force as her puny hands. The use of chest walls seems to have been lost sight of in the modern female costume. They are degraded from their post as walls and converted into a sack, and this sack is forced into any form which suits the mantuamaker's idea of symmetry.

“It has been decided that the Creator, who made the woman after whom the Venus di Milo was modeled, did not understand the lines of beauty, but this having been discovered by French corset-makers, we have it on display in thousands of shop windows in every city street, in all public and private places. Not until the chests as well as the limbs of women are clothed in loose folds, or bodices terminate on instead of below the ribs, can women have room to breathe; so long as fashion requires a long bodice without a wrinkle, a dress waist looking as though it were made of wood or plaster, so long had women better keep out of gymnasiums and avoid exercise. The occasional freedom of muscle cannot do away with the effect of habitual imprisonment, and to call upon these enfeebled, unused muscles for extra exertion during those short periods of freedom would be very unwise.”

EFFECTS OF TOBACCO ON THE MIND.

WE are glad to note that our current literature is coming to abound with facts and arguments against the use of tobacco, whereas, but a very few years ago the general influence of the public press was decidedly in favor of the use of the weed, a fact which we attributed to the reason that it is in almost universal use by printers. The *London Times* in a recent number makes itself responsible for the following interesting facts:—

In response to a circular recently sent out by Mr. Arthur Reade, who has been collecting information as to the habits of literary men in regard to stimulants, the Abbe Moigno gives an interesting and characteristic record of his experiences. The letter appearing in his paper, *Les Mondes*, states that he has published 150 volumes, small and great; that he scarcely ever leaves his work-table, and never takes walking exercise; yet he never has a trace of headache, or brain-weariness, or constipation, or any form of urinary trouble, etc. He never has recourse for his work to stimulants, coffee, alcohol, tobacco, etc., a statement which the sequel shows to need qualification. Snuff-taking he has sometimes practiced, but he vigorously condemns it. He has learned twelve foreign languages by a method of his own, and with regard to his acquirements in philology and chronology, he says: "I was one of the most extraordinary personalities of my time, and Francois Arago sometimes laughingly threatened to have me burnt as a sorcerer." On one occasion, when in Munich for a few weeks and spending his evening with Bavarian savants, who each smoked four or five cigars and drank two or three pots of beer daily, (Steinhell, the most illustrious, boasted of smoking 6,000 cigars a year), the Abbe came to smoke three or four cigars a day. He had also anew taken to snuff, so that, when preparing his calculus of variations, a very difficult mathematical work, he would empty his snuff-box (which held 25 grammes) in a day. But one day he was surprised to find himself painfully unable to recall the meaning of foreign words, and remember dates with which he had been familiar. Thereupon he formed a heroic resolution, and since Aug. 31, 1863, when he smoked three cigars and took 25 centimes worth of snuff, he has, up to the 25th of June, 1882, touched neither. This was, for him, a complete resurrection, not only of memory, but of general health and well-being; he has had indefinite capacity of work, unconscious digestion, perfect assimilation of food (of which he can take

more), etc. For the rest, he mentions that he takes a small cup of black coffee in the morning, and when all but two or three spoonfuls has been drank, he adds a small spoonful of brandy or alcoholic liquor. This is his ration of stimulants. He goes to bed about 9 o'clock, and rises at 5, "full of vigor." The Abbe is over 80 years old.

A COMMON MEDICAL BLUNDER.

[The following lines, written more than seventy years ago by the Rev. Geo. Crabbe, contain the nucleus of one of the most important truths in modern medical science, the true philosophy of cure:—

But now our quacks are gamblers, and they play
With craft and skill, to ruin and betray.
With monstrous promise they delude the mind,
And thrive on all that tortures human kind.
Void of all honor, avaricious, rash,
The daring tribe compound their boasted trash.
Tincture or syrup, lotion, drop, or pill,
All tempt the sick to trust the lying bill.

* * * * *

Then the good nurse (who, had she borne a brain,
Had sought the cause that made her babe complain)
Has all her efforts, loving soul, applied
To set the cry, and not the cause, aside:
She gave her powerful sweet without remorse—
The Sleeping Cordial (she had tried its force)
Repeating oft—the infant, freed from pain,
Rejected food, but took the dose again.
Soon she may spare her cordial: not a doubt
Remains, but quickly he will rest without."

A Visit to Lake Bluff, Ill.—A week or two ago, we had the pleasure of making a short visit to Lake Bluff, Ill., where the Temperance Convention was at that time being held, for the purpose of presenting some of the scientific aspects of the Temperance question. We had the pleasure of meeting our friend Hon. Geo. E. Woodford, so widely known as a temperance orator, and Miss Francis E. Willard, President of the Woman's Christian Temperance Union, and one of the most efficient temperance workers in the world; also Rev. A. J. Jutkins, the manager of the enterprise. We found Lake Bluff a very attractive place for such a gathering. The several hundred people who were gathered there in the large number of cottages and tents scattered here and there through the grove, were among the most intelligent class of temperance workers, and from all that we could learn, the convoca-

tion has been a great success in every way. A large number of able and interesting speakers from all parts of the United States had contributed to the interest of the meeting, and the discussion of the various aspects of the temperance question had been characterized by more than usual interest and ability. Many new plans for temperance work had been laid and their execution begun; and special preparation had been made for the campaign this fall. We had the pleasure of addressing a fine and appreciative audience in the large auditorium on the grounds, and left the place with deep regret that we were not able to remain longer and become acquainted with the many earnest workers in the good cause of temperance reform, whom we had met for the first time. We were able to make good use of our new temperance charts, or rather of photographs of the figures presented by the charts, which were shown to the audience by means of a Stereopticon.

Poisonous Thread.—The poisoning of wall-paper, window-curtains, some kinds of dress fabrics, carpets, hose, collars, and a variety of other articles of common use, by means of injurious pigments, is now pretty generally understood. It may not be, however, so well known that dealers in silk thread have discovered means by which this article of common use may be adulterated in a dangerous manner, as illustrated by the following fact:—

“A dress-maker admitted into the Leeds dispensary, in England, was found to have a distinct blue line on her gums, with simultaneous symptoms, such as a furred tongue, inflammation of the lips, and general debility—all signs pointing to the probability of poisoning by lead. The doctor in attendance on her for some time failed to discover the source, and was beginning to think the blue line had been caused in some other way, when he accidentally learned from a merchant that silken thread, being sold by weight and not by length, is sometimes adulterated with su-

gar of lead. He then questioned the patient, and she informed him that it had been a common practice with her, when at work, to hold silk, as well as other kinds of thread, in her mouth, and that she had done this the more readily with the silk, inasmuch as it often had a sweet taste. This characteristic is a sure indication of the presence of lead, and all thread possessing it should either be rejected or used with great caution. It will be found that the silk thread of the best makers is tasteless, whereas some inferior threads are sweet.”

The Deadly Dose of Alcohol.—A paper recently read before the Biological Society of Paris, presented several interesting points respecting the amount of alcohol required to produce the characteristic effects of this poison upon the system. The writer had found that when a person takes sufficient alcohol to constitute one part in one hundred and ninety-five parts of blood, he becomes “dead drunk.” The insensibility which is produced at this point usually prevents drinkers from involuntary suicide. If a person continues to drink until the proportion reaches one part to one hundred of blood, death ensues.

Malaria in Connecticut.—A correspondent of the *Boston Advertiser* traces the raising of tobacco to the increasing prevalence of malarial diseases in the Connecticut Valley. The following is his statement of his theory:—

“The tobacco crop is proverbially an exhaustive one. To keep up the productiveness of the soil, fertilizers are freely used. The manure is brought from New York City, mostly in scows, which are unloaded on the banks of the river where the cargo is to be used. All the autumn and winter these heaps of putrid matter are fermenting and breeding disease. The air that comes in contact with these piles of filth is contaminated and rendered unfit for human lungs to inhale, as it is offensive to the senses. Here seems to be the origin

of an evil already wide-spread and threatening alarming consequences. The relation of cause and effect would appear to be sufficiently well made out to warrant prompt action in the matter."

A Blind Conflict.—In a recent address, Prof. Huxley says: "A scorner of physic once said that Nature and disease may be compared to two men fighting, the doctor to a blind man with a club who strikes into the *mêlée*, sometimes hitting the disease and sometimes hitting Nature. The matter is not mended if you suppose the blind man's hearing to be so acute that he can register every stage of the struggle, and pretty clearly predict how it will end. He had better not meddle at all till his eyes are opened." The predicament of the blind man is probably not unfamiliar to every doctor; for at best, human skill and knowledge often reach their limit before the disease does, but certainly every physician should be ready to exert himself to the full extent of his power to open his eyes as far as possible, to be as little blind and as seldom as may be. And as a blind man may be able to prevent a conflict which, once begun, he cannot control, so the doctor may have sufficient knowledge to prevent disease which he cannot heal. He may often be more certain of his position as a preventer than as a healer of sickness.

SENSIBLE TEMPERANCE TALK.

THE interest in the subject of hygiene which is being taken by the various State and local as well as National, organizations of the W. C. T. U., promises to be productive of great good. The following excellent paragraphs are from a recent report of the Superintendent of hygiene of a local W. C. T. U.:

"Were good, sound physiological science made a legal requirement in schools, as mathematics now are, and recognized by law as being so required—were ministers and physicians to unite in demanding it, how long would it be before we should have a physically educated people that would be able to

discern and decide between *all* poisons—whether in foods, medicines, or drinks—and then, when all poisons were dreaded as a rattlesnake, men or women would not partake intelligently of them. Hence, *lust* would soon lose its bloat and power.

"It is some antagonistic poison—not temperate nutrient—that excites lust. Perhaps, I might say, it is some stimulant; but stimulants perverted are poisons.

* * * * *

"Our forces antagonistic to lust must be directed toward the evil things that inflame passion in men and even women. Alcohol is but one department of evil. Tobacco is as bad as alcohol—I know from experience too well all I say. Large meat-eating is another department that pours its freightage into lust's store-houses. Exclusively fine flour for bread is another. Mineral condiments, as cream of tartar, soda, etc., belong there, too. Strong coffee and strong tea also. When people are convinced that a simple fare of the unbolted grains, but little meat, or salt, or condiments, give general health and soundness; when the fruits assume prominence as eatables, and water is the beverage; when fashions of dress are healthful, modest, and becoming, leaving out all present incentives to passions, then we may hope for a beginning of government over men's passions. As it is now, both men and women together are hurrying to untimely graves. We need sound physical education through schools, churches, and homes.

"Woman's attention should be called to this vital matter. They might do much through *cookery*; and I do blame women for present styles of *dress*. If they would only see and understand the effects of rich cooking and tempting styles of dress, they would do themselves great good and relieve men of a large share of present temptation, indulgence, and final corruption."—*Signal*.

—In the streets of Leicester, one day, Dean Swift was accosted by a drunken weaver, who staggering against his reverence said, "I've been *spinning* it out." "Yes," said the Dean, "I see you have; and now you are *reeling* it home."

LITERARY NOTICES.

LEAFLETS OF THE SOCIAL PURITY ALLIANCE.—Through the kindness of Mr. John K. Allen, of Lansing, Mich., we have received a number of leaflets published by the "Social Purity Alliance," of Croydon. The object of this Association is the prevention of "the great sin of great cities." The direct object of the leaflets is to create an elevation in the moral tone of society, which the leaders of the society recognize as the only radical cure of vice. This is certainly a most worthy enterprise, and we trust the efforts of its promoters may not be without result.

The North American Review for September has for its leading article a very forcible presentment, by Dorman B. Eaton, of the evils produced by the practice of levying "Political Assessments." The paper is note-worthy for its striking array of facts, but more so because it will be universally regarded as the ultimatum of a large and influential section of the Republican Party, addressed to the party leaders. "Oaths in Legal Proceedings," by Judge Edward A. Thomas, is a discussion of the question whether the interests of morality and public justice alike, would not be promoted by the abrogation of all laws requiring testimony to be given under the sanction of an oath. Thompson B. Maury, late of the Signal Office, contributes an article on "Tornadoes and their Causes," which, in addition to its scientific interest, possesses the merit of suggesting many practical measures for averting disaster to life and property from wind-storms. "Architecture in America," by Clarence Cook, is marked by a freedom of utterance that is refreshing. In this respect it deserves to rank with Commander Gorrings's celebrated paper on the United States Navy. Augustus G. Cobb writes of "Earth-Burial and Cremation," and J. F. Manning, in an article entitled, "The Geneva Award and the Ship-Owners," sets forth the justice of the claims of consignors of cargoes and owners of vessels to indemnification out of the Geneva Award fund, for losses from the acts of Confederate cruisers. The *Review* is sold by booksellers and newsdealers generally.

THE POPULAR SCIENCE MONTHLY. New York: D. Appleton & Co.

In the "Popular Science Monthly" for September, Mr. C. M. Lungren gives the fullest and clearest statement that has been published of the relative cost of "Electric and Gas Illumination." His information is derived from first sources, and his manner of presentation is that of one who has a full understanding of the subject. Dr. Felix L. Oswald writes in the clear, pungent, aggressive style that is characteristic of him, concerning "Longevity," to the effect that the length of life is to a considerable extent a matter of temperament and habit, and shows

how it is affected by the occupation of the individual. In "Animal Self-Defense," Mr. H. L. Fairchild describes the varieties of armor, the disguises, and the kinds of weapons with which animals are provided. The illustrations add much graphic interest to his account. "Brazilian Diamonds and their Origin," by M. H. Gorceix, is full of information, novel and original, concerning the most precious of minerals. The author is familiar with the country of the diamond, and speaks from personal knowledge of its topography and geology, and of the circumstances under which the beds occur; and he closes his account with a theory, supported by such evidences as the formation of the diamond region affords, of the origin of the crystals, and the manner in which they are deposited where they are. In "The Functions of an American Manual Training-School," Professor C. M. Woodward, of the Washington University, St. Louis, presents some timely remarks on the importance of giving a more practical aspect to education, and describes the theory and the work of the Manual Training-School at St. Louis. In "A Note on 'Thought-Reading,'" Mr. Horatio Donkin disputes the possibility of performing the feat so named except where there is some kind of communication, however indirect or remote, between the parties to the transaction. There are many other interesting and valuable articles in this number.

We have received for review a copy of the "Microcosm," a pseudo-scientific monthly published by A. Wilford Hall, Ph. D., of New York. The chief *Raison D'Être* of this journal seems to be the advertisement of certain religious scientific works issued by the editor, who has for some time been striving to boost himself into a short-lived notoriety by the promulgation of his peculiar scientific theories. Aside from its afore-mentioned office as an advertising medium, the journal is crowded with a number of articles from a class of writers who may be denominated as literary "cranks," who are engaged, like the editor, in knocking down the popular scientific theories and endeavoring to replace them by their own untrained fancies. The editor's latest work, for the advertising of which the "Microcosm" was presumably brought into being, is entitled, "The Problem of Human Life," and is a slashing attack upon the biological theories of Huxley, Darwin, and others. In the same work the author endeavors to demolish the current theory of acoustics, while in the number of the journal which lies before us, he does not hesitate to attack the Newtonian theory of gravitation. We need hardly add after this that his own theories are the wildest and most unscientific imaginable, though they are presented in such plausible language and supported with such specious, though unscientific, arguments that they are extremely likely to "take" with those who, like the author, have only a superficial knowledge of the foundation principles of modern science.

Publishers' Page.

OUR NEW TEMPERANCE CHARTS.

WE have been most happily disappointed in the manner in which our new Temperance Plates have been received by temperance workers wherever they have been introduced. We were not prepared to appreciate the fact that there had been so great an advance in the temperance work as to insure so deep an interest in the scientific aspect of the question and thus make popular in so short a time a work wholly devoted to that branch of the question. We have for years felt that the scientific plank was the strongest plank in the temperance platform, although as a rule its strength has not been duly appreciated; but we believe the time has come for this phase of the question to be brought forward as its leading feature. The advocates of moderate drinking have long claimed the scientific argument as theirs; but thanks to the labors of such eminent and earnest workers as Dr. B. W. Richardson and others of his profession in England, it has been shown too clearly for successful contradiction that science is wholly on the side of total abstinence. In our endeavor to show this fact by means of a series of lithographic plates of sufficient size to make the subject clear to a large audience, we are most happy to have the encouragement of many of the most successful and earnest temperance workers in the field. The following are a few of the testimonials and encouraging letters which we have received within a few days:—

"I want to tell you how useful, I am sure, your charts will prove. I consider such object-teaching to be invaluable. I have found it very easy to impress truths upon the minds of the children when it has been so clearly illustrated by the artist's skill. I hope the charts will have a large circulation. They cannot fail to accomplish great good."

Mrs. E. J. FOSTER.

The eminent lady lawyer of Iowa.

"The charts are invaluable to our workers and I am very grateful to Bro. Woodford for bringing them to my notice."—Mrs. EMMA MOLLOY, Editor of *The Morning and the Day of Reform*.

"I have carefully examined the series of Temperance Charts prepared by Dr. J. H. Kellogg. They exhibit to the eye in a clear and striking manner the destructive effects of alcohol on the physical organs. These graphic representations which appeal so strongly to the eye, are, with many persons, far more effective than any amount of oral instruction. I trust and believe that these charts will be of great and lasting service to the cause of temperance. I wish a set of them could be put in every school in the land."

S. R. THOMPSON.

Dean of the Agricultural College, Lincoln, Neb.

In private letter Prof. Thompson, who is presenting the charts at the various Teachers' Institutes which he is attending in various parts of his State, remarks, "The charts excited much interest. One man said, 'The sight of them is worth more than a dozen lectures.'"

—The temperance lesson-sheets are being called for very freely. At the recent camp-meeting at Delaware, O., a temperance-school was held, and in the testimony of those present the exercises were exceedingly interesting and profitable. We trust that the presidents of the State temperance societies and active temperance workers in the various States will see that proper preparations are made for holding temperance-schools in connection with the various camp-meetings to be held in their several States. A complete outfit for the temperance-school, including a supply of lesson-sheets, can be furnished for \$10.60. A set of our new temperance charts will be furnished, in addition, to Health and Temperance Societies for \$10. Some of the charts will be a great addition, as they illustrate in a graphic manner many points brought out in the lessons.

—The article entitled "The Rational Treatment of Consumption," the second portion of which appears in this number, will be published in pamphlet form, and will be sent to any address on receipt of 5 cents. The success of the plan of treatment recommended can be seen any day at the Sanitarium. One gentleman under treatment, who has a large deposit of tubercles in one lung, has increased his lung capacity over 20 cubic inches within the last few weeks by the aid of the measures of treatment recommended, together with others in use here.

—Our recent lecture at Lake Bluff on "The Physical Effects of Alcohol and Tobacco," the first portion of which appears in this number, to be completed in future numbers, will be printed in pamphlet form within a few days, and will be sent free to all purchasers of temperance charts who desire it, or to any one else on receipt of 5 cents.

—Eld. G. C. Tenney of Wisconsin who purchased the first set of Temperance Charts which was sent out, has met with most excellent success in lecturing from them. He writes us that he is preparing a series of lectures to be illustrated by the charts, and is planning to hold a sort of temperance-school in which he will instruct others in their use,—a plan which strikes us as a very good one, which might be followed by others with good results. The best way to secure efficient workers is to train them for their work. By the aid of the charts almost any one of good natural ability can interest an audience, and persons of experience as speakers can hold an audience spell-bound for an almost indefinite period while portraying the terrible ravages of alcohol in the human body.