GOOD HEALTH.

A JOURNAL OF HYGIENE.

MENS SANA IN CORPORE SANO.

VOL. 19. BATTLE CREEK, MICH., MARCH, 1884. NO. 3.

IMPORTANCE OF A STUDY OF HYGIENE.*

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THE subject of Hygiene, in itself, is one upon which so much of our usefulness and happiness in this life depends that its importance can scarcely be overestimated; but when we add to its import its wide relation to our grand and noble temperance work, it assumes a magnitude of far greater proportions, and becomes, as Mrs. Mary B. Willard aptly says, "a subject as broad as the Lord's commandments."

Hygiene relates to the preservation of health in its broadest sense, physical, mental, and moral,—the cleanliness of hearts as well as hands. It includes a knowledge of the functions and proper care of the body, treats of foods and their preparation, of clothing, exercise, prevention of diseases, personal habits, and everything that will tend to make our bodies that for which they were designed,—fit temples for the indwelling of the Holy Spirit. And since it is only through the instrumentality of the body that the attributes of a true life are possible, it is only right that we should guard these earthly temples with jealous care, and develop them to their utmost, that all the attributes of a noble and useful life may be exercised in the highest degree for the individual, and likewise for the welfare and development of the race.

The influence of health over physical and intellectual usefulness has long been recognized; and among the ancient Greeks strength of muscle, symmetry of body, and robust health were the qualifications that formed their ideas of human perfection. So much importance did they attach to this subject that they deified health, typifying it in the guise of woman as the daughter of Escalapius, the god of medicine. This fair goddess, Hygeia, who put more faith in correct living than in the potent charms of her father's serpents, was legendized as sitting beside Apollo, the type of manly vigor and the companion of Pallas, the goddess of wisdom. Among all the sisterhood of deities, none were more honored than she. The people worshiped in her temples, and obeyed her laws; and the results are plainly visible to-day in the beautiful representations of the human form which adorn so many galleries of art, both in this country and in Europe, of which these devotees of Hygeia were the living models. Although the statues of the sweet goddess have fallen from their pedestals, her beautiful temples crumbled into ruins, and the sacred fires upon her altar long been quenched, we may still do her homage; and in a service freed from pagan rites and superstitions, recognize the wisdom of her precepts and the dignity of her laws. Health, long life, and happiness are but the recompenses for walking in the broad path of obedience and truth; while premature decay, pain, and suffering are the penalties nature inflicts upon those who will not heed and reverence her laws. "The laws of health are the laws of God, and are as binding as the decalogue," is an oft-quoted saying of the eminent Dr. Willard Parker, and we can but believe in its truth. "God, who created us in his image, has written his law

* A portion of the opening address of Mrs. E. E. Kellogg, Supt. of the Dep't. of Hygiene for the N. W. C. T. U., at the recent State Normal of Hygiene and Heredity, held in Battle Creek, Mich.

upon every fibre and function of our bodies, and pledged himself to maintain their right action, unless disturbed by some foreign agency, until age wears out the cord that binds us to life."

Moral obligation as well as physical welfare demands that we live out the requirements of natural laws if we would obey the command to glorify God with our bodies, those masterpieces of creative power, upon the first of which God looked and pronounced it "very good." Methinks in the years that have rolled between that sunny morn in the Garden of Eden, when God surveyed his handiwork, and now, there has been so much interference with the original "very good" work that the great Artist might scarcely recognize in the sickly, feeble, nervous, deformed, degenerated specimens of humanity who constitute so large a proportion of our race at the present time, the noble models into whose hands he placed the sovereignty of the world.

Life was never meant to be a burden, nor as the poets say, "a fleeting span;" with care and prudence, it may be made a "joyous summer," and extended considerably beyond the average period of forty years, even beyond threescore years and ten. Indeed, naturalists assure us that, judged by the law which is observed to hold good with other races of animals, man ought to live a full century; but the truth is, few people die a natural death. The greater part commit a sort of suicide through their neglect of the ordinary rules of health or their injudicious use of food, drink, or medicine, or are allowed to die before they reach the years of discretion, from a lack of proper care, or the neglect of the laws of health in some form. Indifference, neglect, and ignorance of the laws of life are the most fertile sources of the deterioration of our race.

A good life is, however, a greater desideratum than a long one, and for that very reason we should feel it a duty to understand the structure and laws that govern our bodily organization, so that we may be enabled to make the best of our faculties and powers, and raise ourselves to the highest sphere of usefulness of which we are capable. We have no more right to remain in ignorance of the laws of health, than we have to neglect to inform ourselves respecting any other of God's requirements. Our bodies are not our own, and we are under obligations to the Creator to care for them properly, for use in his service; and we have no right to cripple or abbreviate their usefulness by neglect of the laws laid down for their maintenance in health. Especially is this true as concerns the shortening of life and impairment of faculties by excesses in eating, drinking, the use of narcotics, or overstimulation of any kind. True hygiene admits of no intemperance.

In its broadest sense, true temperance and hygiene are synonymous terms; and could we conceive of a race of beings who were so sensible as to recognize and follow the laws of health in all particulars, we should find them dwelling in that Arcadia where rum and its fiends never entered, where prohibition was not needed, where brotherly love and sisterly charity prevailed, and where man approached in near perfection the divine image in which he was created.

Most truthfully says an ancient writer, "Without some degree of health, we can neither be agreeable to ourselves nor useful to the world; we can neither relish the blessings of Divine Providence to us in life, nor acquit ourselves of our duties to our fellow-man." It is stated on authority that eighty million dollars are annually expended in the United States for educational purposes, most of which is devoted to the development of the mind alone. A sound body and good health are indispenable for making the best use of an education as well as facilitating its acquirement. The instrument of the mind's action is the body; between it and the mind exists a wonderfully intimate relation, and the grandest mind can display its powers but feebly if locked up in a feeble body. Pitiful, indeed, is the spectacle of a noble, capable soul imprisoned in weakness and barricaded by disease. If we have no right to cultivate a bad character, or to remain in ignorance in this enlightened age, what greater right have we to abuse the only means by which a good character and a cultured mind may be of full use in the world? These and similar questions should receive our conscientious consideration.

Women, especially as the mothers and house-keepers of our land, into whose care are intrusted in a very great measure the health and physical welfare of the family circle, should realize the importance of a knowledge and practice of the principles of hygiene. Duty to our fellow-beings, if

there were not the added incentive of kindred ties, requires of us a thorough knowledge of individual and household hygiene, that we may meet those dreaded foes, disease and death, at the very threshold of our homes, and guard against the first approach of influences that can affect the health of those under our care. All these facts are valid, were we considering the claims of hygiene for the sake of health and usefulness alone; but when we meditate upon the evils that result from a disregard of its laws, chief among which we must name intemperance, we cannot, as members, of the W. C. T. U., as wives, mothers, and sisters of the present generation, longer avoid the responsibility in this direction with impunity. It appears to me more than probable that the largest share of those who to-day fill the ranks of the great army of drunkards that curse our land, acquired the appetite for strong drink as a result of some transgression of the laws of hygiene, either on their own or their parents' part. The appetite for intoxicants is not a natural one. The Creator never designed his children to drink anything stronger than pure water; and the appetite for stimulants, when not hereditary, is acquired through some abnormal means. It may be the first step is taken, when, having transgressed the laws of hygiene till nature rebels with a penalty of pain and suffering, a dose of brandy, a glass of wine, is taken as an anodyne. It may be when the student, or the politician, has used his brain to excess, and weary nature loudly calls for rest, that recourse is had to stimulants to urge the flagging energies to further efforts. It may be that in childhood an abnormal appetite is fostered through impoverished dietary, stimulating foods, or violation of the laws of digestion till a dyspeptic stomach craves abnormal satisfaction. It seems to me no wonder that a morbid, melancholy dyspeptic, whose weak mind and lack of self-control, the results of a diseased body, place him at the mercy of temptation, should fall an easy prey to the demon, drink. All diseased conditions lessen in a greater or less degree the power of reason and self-control, and thus increase the susceptibility to yield to temptation and error. A person with sound physical and mental health finds no craving for stimulants, and is not likely to become a drunkard. There are hundreds of places in the path of physical transgression where the drink tempter assails mankind,—even in infancy; for it seems to me more than probable that the opiates and soothing syrups so often administered may be the means of awakening a love for narcotics. How much, then, does it behoove us, as the wives, mothers, and daughters of our land, to study the laws which regulate our being, and practice the principles of true living in all the details of our home life, educating our families in correct physical habits, and scattering the truths of hygiene abroad among our neighbors and fellow-members of society? Especially in our work of reform in behalf of the intemperate, let us realize that prevention is better than cure.

A MEDICAL DISCUSSION OF THE TOBACCO HABIT.

[THE following report of a discussion on the subject of tobacco-using took place in one of the leading medical societies of Massachusetts, the members of which embrace some of the most eminent American physicians. The discussion was occasioned by the reading of a paper by Dr. E. O. Otis, entitled, "The Use of Tobacco by Boys." While we cannot, of course, agree with all the views advanced by the various speakers, we feel sure our readers will be interested in observing the unanimity with which the use of tobacco by boys is treated; and we doubt not that if none of the speakers had been themselves addicted to the use of the weed, the condemnation of its use by adults would have been equally unanimous. The experience of Dr. Bowditch respecting the use of coffee is also an item of very great interest, illustrating, as it does, one of the most common effects of coffee and its congener, tea.—ED.]

Dr. H. I. Bowditch, in opening the discussion, said that it is high time that some measures be adopted to stop, or at least to restrain, the use of tobacco. For thirty years he had continually found a certain number of patients who had presented the symptoms of grave functional disturbance of the heart, for which no cause could be found except tobacco. There is no organic cardiac lesion, but it is a nervous weakness. This condition was very commonly observed during the

late war. Nearly all the soldiers smoked, and many gradually acquired what was appropriately named the "tobacco heart." The reason why this condition prevailed so extensively at the time mentioned is no doubt found in the fact that tobacco enables men to endure hunger, cold, hardship, and privation better than they could without its aid. The active, exposed muscular life of the army enabled the soldiers to withstand the injurious effects of this substance better than would be the case in a sedentary occupation, or where one lives as a recluse. A moderate use of tobacco may unquestionably be continued for a long time, and probably indefinitely, without harm. There are few people in adult life who would derive any injury from three cigars daily; but the danger comes from the fact that the number is increased to ten or fifteen, and sometimes even to twenty-five in a day. Nearly all boys now smoke cigarettes to an inordinate extent, and it is painful to look forward to their future condition.

In habitués of tobacco we frequently find errors of digestion, sometimes of a most refractory character, though many persons commence to smoke from the supposition that the digestion is benefited by the use of tobacco. There is no question upon the fact that mental disease may be induced by the poisonous action of the nicotine; and many smokers who are not insane have been rendered exceedingly nervous and irritable by the prolonged use of tobacco, and immediately give unmistakable evidences of absolute derangement if the customary indulgence is for any reason withdrawn. The duty of physicians would seem to be to endeavor to restrain the use of tobacco to an amount which shall not be injurious; for no attempt to stop its employment would probably be successful. Above all, we should seek to restrict its use among students and youths generally. Punishment, such as expulsion or suspension from school, should be attached to disobedience, and all proper means should be employed to protect our scholars from its influence. The medical profession should take a decided position upon this important subject. Not only tobacco, but all stimulants should be restrained to a limit within which they can do no harm. Tea and coffee should doubtless be included in the category of agents capable of harm. When in Paris, in 1854, Dr. Bowditch found the favorite *cafe noir* to be such a nervous stimulant that he was able to work all night without the least feeling of fatigue. On returning to America, however, he found himself unable to follow his professional duties with his accustomed energy, but felt a great sense of lassitude and depression. He now reduced the use of coffee to once a day; but after three or four months he found himself subject to attacks of palpitation and cardiac pain, which recurred with considerable regularity. Dr. Jackson examined the heart, but could detect no organic lesion, and advised the abstinence from coffee, upon which all symptoms at once disappeared. After a time the use of coffee was again commenced; whereupon the previous disturbances of the heart were soon reproduced. The harmful agent was again abandoned for fifteen years, when being once more in Europe, coffee was resumed in small quantity, and within a short time the old symptoms all recurred in a more intense form. Since that time no coffee has been taken, and no further trouble has been experienced. The human system seems never to fully recover after once being thoroughly saturated with any of these substances. The same is true of alcohol.

Dr. George B. Shattuck thought it a too common habit, in speaking of these matters, to make the *abuse* and the *use* of a substance synonymous. It is also common to form general conclusions in regard to the effects of stimulants and narcotics from personal and individual experience, and to apply to our neighbors the rules we find necessary for ourselves. It is possible to be indiscreet and to commit excesses with beef-steak as with tobacco, and the individual should decide what *his* system requires. The subject of discussion before the Society, however, the speaker suggested, was the use of tobacco by *boys;* and in regard to this he felt sure that the members present would cordially agree with the paper of the reader, Dr. Otis, and with its conclusions that the use of tobacco by the immature, even in moderate quantities, is injurious and undesirable.

Dr. Harlow observed that if tobacco retards development during the years of growth, it must continue to be a harmful substance even after the body has reached its full growth, and would work injury at any time of life. If it irritates the heart in a boy, it will do so to some extent in a man. President Quincy was accustomed to advise students against the use of to-

bacco or stimulants while engaged in their collegiate course.

Dr. Marcy stated that when a surgeon in the army he had observed occasions when tobacco was a God-send to the soldiers in aiding them to endure hardship and privation, and cold and hunger. There are some organisms to which it may be of questionable benefit, but it is a serious injury to any growing person. There is no doubt that a popular vote would be largely against the general use of tobacco.

Dr. Prince thought a distinction should be made in the form in which tobacco is employed—whether in cigarettes, cigars, or a pipe. Cigarettes probably make a more lasting impression upon the system than cigars, and are harder to renounce. There is a popular impression that the principal injury comes from the paper containing the tobacco. This is not true. In cigarette smoking the vapor is inhaled, and coming in contact with the delicate mucous membrane of the air-passages, its active properties are at once absorbed, and produce an immediate effect, which can be perceived to the tips of the fingers. The succeeding sensation is one of ennui, malaise, indolence, and muscular hebetude, which soon becomes burdensome, unless the stimulation be renewed and prolonged by a fresh cigarette.

Dr. Marcy said that the question of the *form* in which tobacco is used is really important, if we are to judge of the *effect* from the quality of the substance employed. Many cigars are made from refuse of all kinds, which is pressed into shape and inclosed in a genuine tobacco leaf for a wrapper, while cigarettes more generally contain pure tobacco, particularly when they are made by the smoker as required for use. Certainly, as far as wholesomeness and cleanliness are concerned, cigarettes must be ranked as far preferable to cigars.

Dr. Langmaid stated that the most important questions in cigarette smoking are these: Does the inhalation of the vapor induce any disease of the mucous membrane with which it comes in contact? Does the smoke act upon the mucous membrane simply as smoke, or from the fact that it contains nicotine? Does smoking increase naso-pharyngeal catarrh? To these an affirmative reply must be given. If the mucous membrane is irritated, smoking invariably makes it worse. Will smoking produce a catarrhal state when none exists, or awaken a new one in a patient who has been cured of the disease? Observation teaches that it can do this. There is an increased secretion from the membrane, and all the other features of a catarrhal condition. Singers almost invariably abstain from smoking on those days upon which they expect to sing.

Dr. Bowditch added that he will not treat a patient for sore throat unless smoking is abandoned for the time. He has, however, never observed any affection of the bronchial tubes as indicated by râles or other physical signs, which could properly be laid to the influence of tobacco.

Dr. Cutler asked if any distinction was to be drawn between smoking and chewing. He stated that a teacher told him that students became much more stupid after smoking than after chewing tobacco. Dr. Mussey has made the same observation in regard to the mental depression from tobacco.

REPORT OF THE CHOLERA INVESTIGATIONS IN EGYPT.

BY DR. KOCH.

As the cholera epidemic was already rapidly on the decline when the Commission arrived in Egypt, it was not to be expected from the very commencement that that country would afford full scope for the investigation. Moreover, as in an epidemic, the period of its decline is the least adapted for its ætiological investigation, the original plan was to make the necessary preparatory studies in Egypt, in order, on the epidemic spreading to Syria, to avail ourselves of these in those places which, from having just been invaded by cholera, would afford a favorable ground for investigation.

The first part of this plan we have been able so far to carry out according to the wishes of all, for the Commission has found plenty of opportunity during its stay in Alexandria, for collecting the necessary materials for its preparatory studies. For this success I am chiefly indebted to the kindness of the doctors of the Greek hospital, who advanced the objects of the expedition in the most effective manner by placing at our disposal sufficient rooms, as well as the cholera patients who came to the hospital and the corpses of those who died from the disease.

At first the Commission occupied for their work two bright rooms adjacent to each other on the ground floor of the

hospital. One of them was devoted to the microscopic work, and the other to the inoculation experiments. The animals on which the experiments were made were kept in both rooms. But as their number increased, and as it appeared dangerous to be handling the inoculation matter in the same rooms in which one spent almost the whole day, the animals for experiments were brought into a room of the old hospital, distant from the others, where the experiments of inoculation were made.

The materials we have had up till now for investigation have been twelve cholera patients and ten cholera corpses. The symptoms correspond in each case in every detail to those of genuine Asiatic cholera. Small portions of the blood of these patients, the ejecta and excreta, were taken and examined. As it was very soon evident that the blood was quite free from micro-organisms, and that the ejecta, too, contained comparatively few of them, but that the excreta contained a very significant amount of micro-organisms, these were mostly used for the inoculation experiments on the animals. Among the dissected subjects, the most widely different nations are represented (three Nubians, two German Austrians, four Greeks, one Turk), various ages (two children, two adults over sixty years of age, the rest between twenty and thirty-five), and cases of different durations of illness. The most important point, however, is, that the bodies could generally be dissected immediately after death, or only a few hours afterward. The changes which are caused in the organs, and especially early in the intestines, by decomposition, and which render the microscopic investigation of these organs extremely difficult, were thus with certainty avoided. I am inclined to give the more weight to this circumstance, as it will scarcely be possible to obtain subjects in other places so suitable for microscopic investigation.

The state of the bodies, as also the symptoms of the disease, left no doubt that we had to deal here with Asiatic cholera, and not, as was asserted at first on many sides, with diseases similar to cholera, so-called choleriform and choleroid complaints.

No organized infectious matter could be traced in the blood, or in those organs which in other infectious diseases are generally the seat of micro-parasites, as, for instance, in the lungs, the spleen, the kidneys, or the liver. Sometimes bacteria were found in the lungs, which, however, as was evident from their shape and position, had nothing to do with the course of the disease, but had reached the lungs by the inhaling of the ejected contents of the stomach.

Micro-organisms in great abundance and of most different kinds were found in the contents of the intestines, and in the excreta of the cholera patients. No one kind was present in great predominance over the others.

Special signs were also wanting which could have been attributed to a connection with the process of the disease.

On the other hand, the intestines themselves gave an important result. With the exception of one case, which terminated fatally from another complaint some weeks after getting over the cholera, a certain kind of bacteria was found in the coatings of the intestines. These bacteria are stabiform, and belong therefore to the bacilli, resembling in size and form the bacilli found in glanders. In those cases in which the intestines, by magnifying, show the slightest changes, the bacilli had penetrated into the utricular glands of the mucous membrane of the intestines, and had there caused a considerable irritation, as the dilatation of the opening of the gland and the collection of granular circular cells in the interior of the gland showed. In many cases the bacilli had found their way behind the epithel of the gland, and had multiplied between the epithel and the granular membrane. The bacilli had also settled in large numbers on the surface of the villi of the intestines, and had often penetrated into their tissue.

In severe cases which terminated in bloody infiltration of the mucous membrane of the intestines, the bacilli were found in large numbers, and they did not then confine themselves to the invasion of the utricular glands, but passed into the surrounding tissue, into the lower layers of the mucous membrane, and in some cases to the muscular skin of the intestine. If this discovery had not been made in perfectly fresh corpses, one could have made little or no use of it, for the influence of putrefaction is able to bring about similar vegetation of bacteria in the intestines. For this reason I had been unable to attach any value to the fact that I had already, a year ago, found in a cholera infected intestine, which I had received direct from India, the same bacilli in the

same order as now in the Egyptian cholera cases; for I was always obliged to think of a possibility of complication with post-mortem putrefaction. But now this former discovery, which was made in four different Indian cholera subjects, is of considerably greater value, as the possible error caused by the appearance of putrefaction can be safely set aside.

It is also not unimportant that in the similarity between the state of the intestine in the Indian and Egyptian cholera cases a further proof of the identity of both diseases is obtained. The number of cholera subjects that we were able to investigate was certainly small. But we met with the bacilli in all cases of cholera that were immediately brought under our attention, while in the one case that we investigated after the process of cholera was over, and in many cases of people who died of other diseases, and whom we examined with the same purpose, they were missing; but there can be no doubt that they stand in some relation to the operations of cholera. However, from the coincidence of the latter with the intestines, we cannot conclude that the bacilli are the cause of cholera. It might be the very reverse, and it could just as well be supposed that the operation of cholera causes such disturbances in the mucous membrane of the intestines, that from the many bacteria that are always parasite in the intestines, one form of a certain bacilli was enabled to penetrate into the tissues of the mucous membrane of the intestine. Which of these assumptions is the correct one—whether the operation of infection, or whether the invasion of bacteria is the primary cause—can only be decided by trying to isolate the bacteria from the affected tissues, to propagate them artificially, and then by inoculation experiments on animals to reproduce the illness. For this purpose it is absolutely necessary to have such animals at one's disposal as are susceptible to the infectious matter in question.

Despite all endeavors, no one has yet indisputably succeeded in making animals ill of cholera. Several experiments have been made on rabbits, guinea-pigs, dogs, cats, monkeys, pigs, rats, etc., but always without result. The sole statements which in this matter are deserving of attention have been made by Thiersch, who saw a number of mice get diarrhea, and die after having been fed upon the contents of a cholera-infected intestine. This experiment has been confirmed by trustworthy experimentalists, as, for instance, Burdon-Sanderson, though certainly disputed by others. Anyhow, it was necessary to repeat these experiments, as it is of the greatest importance to find an animal that is susceptible to cholera. For this purpose, fifty mice were brought from Berlin, as it was very improbable that the requisite number of them could soon be procured in Alexandria, and the inoculation experiments were begun on these. Monkeys, too, which are the only species of animal susceptible to some human diseases, such as small-pox, were also used for these experiments. Finally, attempts were made to infect some dogs and poultry. But in spite of all efforts, these experiments were without result.

The bacilli found in the contents of the intestines, and in the coatings of the intestines, were also artificially propagated, and with these, too, experiments were made by giving them as food and partly by vaccination. Some of these produced putrefying illnesses when they were inoculated, but cholera could not be produced from any of them.

That the infectious matter must often be contained in a powerful form in the excreta of choleric patients is proved by much experience, especially by the frequent cases of illness among the laundresses who had to wash the linen of the cholera patients. In the Greek hospital such a case occurred, and a laundress who was exclusively occupied with the washing of linen from cholera patients, caught cholera.

It is perfectly certain that in the numerous samples made use of, some at least contained the infectious matter. If, however, no result was obtained, it may have been because the species of animals used for the experiments were themselves unsusceptible to cholera, or that the correct method of inoculating has not yet been discovered. In both directions the experiments are to be continued and modified, but there is little hope of anything being attained in this direction with the material at our disposal. But it is not very probable that the reason of the failure of the experiments is to be looked for in these circumstances alone.

There is another explanation for the accuracy of which much can be said. In one of the places visited by the cholera, it is known that the plague died out long before all the persons had taken infection;

and although the infectious matter was scattered in great quantities all over the whole place, fewer people became ill, and the epidemic disappeared in the midst of many persons susceptible to the disease. This occurrence can only be explained on the supposition that toward the end of the epidemic the infectious matter loses some of its infective power, or at least is uncertain in its spreading. But if toward the end of the epidemic even human beings are themselves no longer so liable to receive the infectious matter, then one cannot but expect that this will also be the case in experiments with animals, about whose susceptibility to cholera nothing is as yet known. For our experiments, we only had at our disposal such objects as had been collected at the end of the epidemic, whose inefficiency was more or less to be presupposed. It is possible that under favorable circumstances—for example, at the commencement of an epidemic—the inoculation of animals might succeed, and by this means we might at once ascertain if the bacilli traced by me in the mucous membrane of the intestines are the real cause of cholera.

Far as the results hitherto obtained by the Commission are from the solution of the problem, and little as they are adapted for practical use in struggling against cholera, yet, in consideration of the unfavorable circumstances and the short time of investigation, they may be considered good. They entirely answer the original purpose of the preliminary investigation, and they exceed this in that enough has been effected for the first condition which has to be fulfilled in inquiring into a contagious disease by the constant discovery of characteristic micro-organisms, and thereby a fixed boundary has been placed for further investigation.—*Weekly Medical Review.*

—He that does good to another does good also to himself, not only in the consequence but in the very act; for the consciousness of well-doing is in itself ample reward.—*Seneca.*

—It is easier to find a score of men wise enough to discover the truth, than one intrepid enough to stand up for it in the face of opposition.

—Look over on the bright side, which is ever the heaven side of life. This is far better than any medicine.

CHEAP AND GOOD FOOD.

[EXCELLENT articles advocating sensible reforms in diet very frequently appear in the most popular English magazines, which as a class are more practical in character than American magazines of the same class, of which the following from *Knowledge* is a fair example.—ED.]

T. R. Allison, writing to the London *Times*, says: Allow me to bring to the notice of your readers some experiments I have just concluded, to solve the difficulty of feeding our poor in London and elsewhere. The cry is that food is so dear that the poor can scarcely live. This cry is true, if they want to live on luxuries; but if they will live on wholesome, but plain and healthy fare, they can do so for very little. A little over a month ago I determined to give up all expensive articles of food, and live almost as cheaply as possible. Having left off flesh foods for nearly two years, and lecturing frequently on the question of food, I knew what to select. Looking over my food accounts, I found milk, butter, eggs, and cheese, with tea and coffee, were fairly expensive articles, and none of them necessary, so I gave them up for a time to see the results.

On October 19 I began my experiment; my weight was then nine stone* eight ounces. I continued this purely vegetarian diet for a month, when my weight was nine stone, three pounds and twelve ounces, a gain of three and one-fourth pounds. My friends said I looked well; I felt well, and did my usual work the same as ever. I walked from ten to fifteen miles daily, seeing patients or taking exercise. Here is an account of my dietary, which cost me little more than sixpence a day, and I could without luxuries easily live for less. Breakfast consisted of a basin of porridge, made from a mixture of oatmeal and wheat-meal, which I found more palatable than either singly. This I usually ate with bread, to insure thorough salivation. Then came bread fried in refined cotton-seed oil, or fried vegetable haggis. For drink, I had a cup of cocoa or fruit syrup, with warm water and sugar. The cocoa used was the ordinary kind, with plenty of starch in it, making a thick drink, and no milk is then required. Dinner consisted of a thick vegetable soup and bread, potato pie, savory pie, vegetarian pie, vegetable stew, stewed rice, tomatoes, etc.

* In England, a stone is fourteen pounds by weight.

For a second course I had bread plum pudding, stewed rice and fruit, baked sago, tapioca and apples, stewed prunes, figs, raisins, and bread. The tea meal consisted of bread and jam, stewed fruit, or some green stuff, as watercress, celery, tomatoes, etc. I had only three meals a day, and frequently, when very busy, I had only two, and a cup of cocoa and a biscuit for supper. I always use the wholemeal bread, as it is laxative, and contains a good deal of nitrogen, which is thrown away with the bran. The cotton-seed oil is a cheap and good cooking oil, and is impossible to detect. This diet I continued for a month, and now I only take the animal products when out, not having them at my table.

Now compare this diet with one of flesh or a mixed one. The latest analysis shows flesh to contain from seventy to seventy-four per cent of water, the dry residue being very rich in nitrogen, and it contains a little carbonaceous or fatty matter. Hence, to live on meat alone, as much as eight pounds a day is necessary. Then there are to be considered the diseases of animals, which are communicable to man if that flesh be not thoroughly cooked all through; and as very few of our animals live a perfectly natural life, most of them are more or less diseased, especially the fat ones. The excess of nitrogen taken into the system in eating flesh meat has to be eliminated by the liver, kidneys, and lungs; hence these organs are overtaxed, and much disease is the consequence. In fact, were it not for flesh food, we doctors should have very little to do. Those living in towns cannot afford to eat much flesh, because they do not get sufficient exercise and oxygen to burn up the excess of nitrogen. If they do eat this flesh, and if they eat much, then they must suffer from many complaints, such as indigestion, bilious attacks, congested liver, hemorrhoids, gastric catarrh, and other gastric troubles.

If the habit be continued, gall stones, or urinary calculi, may follow, or rheumatism and gout. Then the kidneys become diseased, and more work is thrown on the heart, which also becomes diseased; the end is death by one of those lingering complaints which show a diseased organ somewhere. Even epilepsy and many nervous diseases are aggravated by flesh. Cancer is on the increase, and from some observations I have made, it may be indirectly traced to flesh. Consumption has only a remote connection with flesh, it being due chiefly to want of fresh air. Vegetable food is cheap, contains an abundant supply of nutriment at first cost, and our systems are so formed as to use it with least expenditure of vital force. We use no cruelty in obtaining our food, and can easily see if it be wholesome or in a rotten state.

By means of our diet, much disease is prevented, and even most chronic cases of present disease can be alleviated by it. If we want a cheap dietary, we have the following foods to choose from: Wheat, oats, barley, maize, rice, sago, tapioca, semolina, hominy, peas, beans, lentils, etc., which are all concentrated foods, and very rich in nutriment. Potatoes, parsnips, beets, carrots, turnips, onions, cabbage, sprouts, etc., give variety, bulk, and flavor; to these may be added the sweet herbs for making savory dishes. Apples, pears, currants, gooseberries, plums, strawberries, raspberries, blackberries, and other fruits, with melons, peaches, grapes, etc., are high-priced but wholesome fruits. The dried fruits, as dates, figs, apple rings, currants, raisins, etc., are cheap and good. To these may be added tinned goods. Thus one can see the immense variety of palatable things we have, and these to suit all purses. We can add to these milk, butter, cheese, eggs, and honey, which are obtained without killing animals. But if we take animal food, fish is least injurious, then beef and mutton, while veal, pork, game, etc., are very indigestible, and ought to be avoided.

HOW MUCH SHOULD WE EAT?

How, asks Dr. Nichols in the *Food Reform Magazine*, are we to get at the proper quantity of food? Animals living in a state of nature do not overeat. They stop eating when they have enough. There are no prize cattle on the prairies. It is the stalled ox, and the pig in his pen, deprived of exercise, that can be fattened into a diseased obesity. Horses escape this process because men do not to any great extent knowingly devour them. The hunter and racer are not overfed. All animals expected to do their work are carefully fed as to quality and quantity. If human beings were fed as wisely, they would be as healthy. There are some good rules for feeding as to quantity. When our food is simple and natural in kind and quality and mode of preparation, there is little danger of eating too much. There is little danger, for exam-

ple, of eating too many grapes, apples, pears, or bananas. Salt, sugar, spices, and luxurious cookery tempt to excess. With men, as with animals, a natural diet is self-limiting, and we are disposed to stop when we have enough. The more artificial the food, the more elaborate and luxurious the feast, the more the liability to overload the stomach, overtask the digestive power, and overweigh the forces of life. Simplicity of food is a condition of health, and promotes longevity. The quantity of food which enables a man to do his daily work without loss of weight is precisely what he requires. This quantity may vary a little with each individual, but every one can easily ascertain his own measure of requirement by reducing the quantity of daily food until he finds a balance of force and weight. It is my opinion that the average quantity of water free aliment required, say by business and literary men, is twelve ounces. Men of great muscular activity may require sixteen to twenty ounces. I have found myself in very good condition for sedentary work on eight or ten ounces. When any one is in good condition for his work, and keeps his normal weight, he has had enough. Find this quantity by experiment, and then habitually keep to it.

A RUSSIAN STOVE.

THE stoves in general use in Russia, and, indeed, in most parts of Germany, differ greatly from any form of American or English heater. The following is a good description of the practical working of the stove, and something of its architecture :—

"The Russian stove affords the greatest contrast to our barbarous device of a hole in the wall into which fuel is shoveled, and allowed to expend nine-tenths of its energies in heating the clouds, while only the residual ten per cent does anything toward warming the room. With the thermometer outside below zero, a house in Moscow or St. Petersburg is kept incomparably more warm and comfortable, and is better ventilated (though perhaps not so *much* ventilated) than a corresponding class of houses in England, where the outside temperature is twenty or thirty degrees higher, and this with the consumption of about one-fourth of the fuel which is required for the production of British bronchitis. This is done by, first of all, sacrificing the idiotic recreation of fire-gazing; then by admitting no air into the chimney but that which is used for the combustion of the fuel; thirdly, by sending as little as possible of the heat up the chimney; fourthly, by storing the heat obtained from the fuel in a suitable reservoir, and then allowing it gradually and steadily to radiate into the apartment from a large but not overheated surface.

"The Russian stove by which these conditions are fulfilled is usually an ornamental, often a highly artistic article of furniture, made of fire-resisting porcelain, glazed and otherwise decorated outside. Internally it is divided by thick fire-clay walls into several upright chambers, or flues, usually six. Some dry fire-wood is lighted in a suitable fire-place, and is supplied with only sufficient air to effect combustion, all of which enters below and passes fairly through the fuel. The products of combustion being thus undiluted with unnecessary cold air, they are very highly heated, and in this state pass up flue No. 1, they are then deflected, and pass down No. 2, then up No. 3, then down No. 4, then up No. 5, then down No. 6. At the end of this long journey they have given up most of their heat to the twenty-four heat absorbing surfaces of the fire-clay walls of the six flues. When the interior of the stove is thus sufficiently heated, the fire-door and the communication with the chimney are closed, and the fire is at once extinguished, having now done its day's work; the interior of the stove has bottled up its calorific force, and holds it ready for emission into the apartment. This is effected by the natural properties of the walls of the earthenware reservoir. They are bad conductors and good radiators. The heat slowly passes through to the outside of the stove, is radiated into the apartment from a large and moderately heated surface, which affords a genial and well-diffused temperature throughout. There is no scorching in one little red-hot hole, or corner, or box, and freezing in the other parts of the room. There are no drafts, as the chimney is quite closed as soon as the heat reservoir is supplied. If one of the heat reservoirs is placed in the hall, where it may form a noble ornament and can easily communicate with an underground flue, it warms

every part of the house, and enables the Russian to enjoy a luxurious temperate climate indoors in spite of the arctic winter outside."

ABSTINENCE AN AID TO STUDY.

BOSWELL, in his life of Johnson, tells us "that in 1737 this celebrated individual abstained entirely from fermented liquors,—a practice to which he rigidly conformed for many years together, at different periods of his life."

Mr. Croker, in his edition of this work recently published, makes the following pertinent observations on this passage: "At this time, his (Dr. Johnson's) abstinence from wine may perhaps be attributed to poverty; but in his subsequent life he was restrained from that indulgence by, as it appears, moral, or rather medical, considerations. He probably found by experience that wine, though it dissipated for a moment, eventually aggravated the hereditary disease under which he suffered; and perhaps it may have been owing to a long course of abstinence that his mental health seems to have been better than in the earlier portion of his life. He says, in his *Prayers and Meditations*, p. 13, 'By abstinence from wine and suppers, I obtained sudden and great relief, and had freedom of mind restored to me, which I have wanted for all this year, without being able to find any means of obtaining it.' Selden had the same notion; for, being consulted by a person of quality whose imagination was strangely disturbed, he advised him 'not to disorder himself with eating or drinking, to eat very little supper, and say his prayers daily when he went to bed; and I (Selden) made but little question but he would be well in three or four days.'" (Table Talk, p. 17.) "These remarks," continues Mr. Croker, "are important, because *depression of spirits* is too often treated on a contrary system, from ignorance of, or inattention to, what may be its *real cause*."

Numerous other instances of the same tenor could be readily adduced. "It often happened," says the biographer of the great Luther, "that for several days and nights he locked himself up in his study, and took no other nourishment than bread and water, that he might the more uninterruptedly pursue his labors."

We shall conclude by quoting an article from the Appendix to the Anniversary Report of the Pennsylvania Temperance Society:—

"The temperance and abstemiousness of most of the ancient philosophers is well known. Demosthenes, the great orator of Greece, used no other drink than water. In modern times, we ought not to be ignorant of the fact 'that Sir Isaac Newton, when composing his celebrated treatise upon optics, confined himself to *water* and a *vegetable diet:* to this abstemious mode of living, probably, may be ascribed the great age (eighty-five years) to which he attained. John Locke, too, died in the seventy-third year of his age; his common drink was water, which he justly considered was the cause of his life being prolonged to so great an age, notwithstanding the original feebleness of his constitution, and the distressing disease (asthma) under which he labored for many years. To this temperate mode of life he was also probably indebted for the increase of those intellectual powers which gave birth to his incomparable work on the human understanding, his treatises on government and education, as well as his other writings, which do so much honor to his memory.'—*Hosack's Address.*

"Boyle, the father of modern chemistry, and the liberal promoter of science in general, though possessed of a very delicate constitution, attained to the age of sixty-five years. His drink was water. It has been said of him that 'the simplicity of his diet, to all appearance, preserved his life so long beyond men's expectations; and in this he was so regular, that in the course of above thirty years he neither ate nor drank to gratify the varieties of appetite, but merely to support nature.'

"Euler, the famous mathematician, who attained the advanced age of seventy-six years, was strictly temperate. He is represented as of a cheerful and always pleasant temper, fond of society, and had the art of enlivening it by an agreeable wit.

"Without being able to affirm that La Place, the most original and celebrated natural philosopher since the time of Newton, drank nothing but water, we have the evidence of his eulogist, before the French Institute, that he was enabled to continue his habits of excessive application to study until within two years of his death, without any inconvenience, owing to his always using very light diet, even to abstemiousness. La Place died in the seventy-eighth year of his age."—*Journal of Health*, 1832.

TEMPERANCE AND MISCELLANY.

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

Conducted by MRS. E. E. KELLOGG, Superintendent of Hygiene of the National W. C. T. U.

SUNLIGHT ALL THE WAY.

"Good-bye Jennie; the road is long,
And the moor is hard to cross;
But well you know there is danger
In the bogs and the marshy moss.
So keep in the foot-path, Jennie;
Let nothing tempt you to stray;
Then you'll get safely over it,
For there's sunlight all the way—
Sunlight all the way;
So never you fear,
Keep a good heart, dear,
For there's sunlight all the way."

The child went off with a blessing
And a kiss of mother-love;
The daisies were down at her feet,
And the lark was singing above.
On, on in the narrow foot-path—
Nothing could tempt her to stray;
So the moor was passed at nightfall,
And she'd sunlight all the way—
Sunlight all the way;
And she, smiling, said,
As her bed was spread,
"I had sunlight all the way."

And I, who followed the maiden,
Kept thinking, as I went,
Over the perilous moor of life
What unwary feet are bent.
If they could only keep the foot-path,
And not in the marshes stray,
Then they would reach the end of life
Ere the night could shroud the day;
They'd have sunlight all the way.
But the marsh is wide,
And they turn aside,
And the night falls on the day.

Far better to keep in the narrow path,
Nor turn to the left or right;
For if we loiter at morning,
What shall we do when the night
Falls back on our lonely journey,
And we mourn our vain delay?
Then steadily onward, friends, and we
Shall have sunlight all the way—
Sunlight all the way,
Till the journey's o'er,
And we reach the shore
Of a never-ending day.

—*Harper's Weekly.*

—Meekness, an angel of God, rests on quiet wing, looking down into the smallest ways of men and to the humblest service; and then down from the shining glory of its home it comes with generous light to seek and save the lost. Meekness is of God; pride is of the devil.

SKETCHES OF TRAVEL, NO. 11.

MRS. E. E. KELLOGG.

THE PALACES OF THE ANCIENT KINGS.

The original site of embryonic Rome, the fortress of Pelsago, or *Roma Quadrata*, was the Palatine hill, one of the notable seven upon which the Rome of later years was built. It was here that the poet Virgil pictures the shepherd king, Evander, as welcoming the pious Æneas. Here dwelt Romulus, Rome's half mythical founder, who, as tradition tells us, "inclosed the fortress within the limits of his new city, tracing round the foot of the hill with a plough drawn by a bull and a heifer, the furrow being carefully made to fall inward, and the heifer yoked to the near side to signify that strength and courage were required without, and obedience and fertility within, the city."

The Palatine was the home of Cicero and Cataline, and it was in the temple of Jupiter, built upon this hill by Romulus, that Cicero pronounced his famous oration against Cataline. The principal senators dwelt upon the Palatine, and it was in order that they might not be obliged to cross the Forum, in case of an uprising, and because they believed Jupiter would repel the enemies of State, that the senate had been called together in his temple. It was not expected that Cataline would presume to present himself before the senate, and it was his appearance there which led to the utterance of the well-known words by Cicero, "How long, O Cataline! wilt thou abuse our patience?"

The Palatine was the birth-place of Augustus Cæsar, and afterward his imperial residence. Here succeeding kings dwelt in royal magnificence, and palace after palace rose in costly splendor, until the name of Palatine became synonymous with palace. For their adornment, the quarries of the world were searched for pillars and slabs of alabaster and rare marbles, black, white, and tinted in every shade, the broken columns and fragments of which still remain among the ruins on the Palatine.

The chambers of the palaces of the Cæsars have been filled up, and were used as a foundation for the palace of the Flavian kings, but portions have recently been excavated, and antiquity-loving visitors can wander at will through some of the veritable halls and courts of the palace of Augustus Cæsar. We treasure among our choicest mementoes a beautiful fragment brought from this palace, and a piece of oriental marble picked up in the ancient Basilica, or justice hall, near by where it is supposed St. Paul was tried before Nero. A portion of the Em-

peror's chair still remains upon the tribune, as also a part of the bar before which the prisoners were brought.

The ruins of the palace of Vespasian are sufficiently well preserved to show the arrangement of the rooms; and the fragments of architectural carvings, columns of rare marble, and beautiful mosaic pavement serve as an index of its vanished splendors. The disposition of apartments is that of an ordinary Roman dwelling of that era, though on a much larger and grander scale, and without what were termed offices, viz., bedrooms, store-rooms, etc.; for the emperors did not reside at their palaces on the Palatine, but only came to hold court and festivities.

In the ordinary dwelling, the first room to command attention was the Atrium, or general room of resort for the family. It was usually a large apartment roofed over, with a square opening in the center, toward which the roof sloped, and to each of the four corners of which were attached spouts of various fantastic forms and devices for collecting the rain-water, and pouring it into a cistern in the floor of the Atrium beneath. Often the Atrium was adorned with fountains, its walls lined with slabs of oriental marble, and its floor composed of mosaic made of little pieces of precious stone, marble, or glass imbedded in plaster, so as to form geometrical figures and sometimes even elaborate pictures.

The Atrium of the palace was used as a station for the palace guards and an ante-room for visitors. It is an oblong, anterior court, once surrounded by beautiful columns.

Adjoining the Atrium are two apartments, the chapel for the household gods, still containing a small square altar in marble with figures of the family deities, and the Tablinium, a room which in private residences was used as the family sitting-room, and which, as the name indicates, contained the family archives, the statues, pictures, geneological tables, and other ancestral relics, but which in the palace served as the throne room, where the emperor granted audiences. Nothing but the pedestals of the throne and a few fragmentary remnants of its mosaic pavement remain to tell the story of its former magnificence.

A little to one side of the Tablinium is an open court of imposing dimensions, once surrounded by a colonade of marble, and ornamented with statues, fountains, trees, and flowers. Opening on this court for its entire width, is the palace dining-room, where the royal feasters, reclining on cushioned couches of softest wool covered with Tyrian purple, and dining off golden service on citron-wood tables "more precious than gold," could feast their eyes on the beauties of nature and art, while they gorged their stomachs to the utmost with luxurious viands, until, when no more could be contained, they were obliged to retire, with a feather to tickle their throats, to an apartment just beyond, called the Vomitarium, and disgorge the contents of their much-abused stomachs into marble basins placed around for that purpose, that they might return with renewed appetite to the banquet board.

Gormandizing seems to have been a prevalent evil of degenerate Roman times, and prodigality in respect to the pleasures of the table and surroundings at meals was extreme. Nothing was too extravagant to minister to the pleasures of appetite. In the houses of the wealthy and the nobles, separate rooms, servants, and service were provided for use at different seasons of the year or on various occasions. Lucellus, who was celebrated for his wealth, is said to have had a certain standard of expenditure for each dining-room, so that when he told his servants which hall he would dine in, they knew exactly what style of an entertainment he desired; and there is a well-known story of how he deceived Pompey and Cicero, who insisted on visiting him at his family dinner, merely by sending home word that he would sup in a hall in which he never gave an entertainment of less cost than about $8,000.

From the dining-room of the palace we passed to an apartment conjectured, from the inscriptions found there, to have been the library, and thence into a lecture-room, along the walls of which are still seen traces of the seats.

Portions of Nero's Golden House, which extended over the Palatine and to two of the neighboring hills, ruins of the palaces of Caligula and Tiberius, and of a private house, the only one among the palaces, and believed to have been that of the father of Tiberius, still remain upon the Palatine.

A RILL FROM THE TOWN PUMP.

SCENE.—*The corner of two principal streets. The* TOWN PUMP *talking through its nose.*

NOON by the north clock! Noon by the east! High noon, too, by these hot sunbeams, which fall, scarcely aslope, upon my head, and almost make the water bubble and smoke in the trough under my nose. Truly, we public characters have a tough time of it! And, among all the town officers chosen at March meeting, where is he that sustains, for a single year, the burden of such manifold duties as are imposed, in perpetuity, upon the Town Pump? The title of "town treasurer" is rightfully mine, as guardian of the best treasure that the town has. The overseers of the poor ought to make me their chairman, since I provide bountifully for the pauper, without expense to him that pays taxes. I am at the head of the fire department, and one of the physicians to the Board of Health. As a keeper of the peace, all water-drinkers will confess me equal to the constable. I perform some of the duties of the town clerk, by promulgating public notices, when they are posted on my front. To speak within bounds, I am the chief person of the mu-

nicipality, and exhibit, moreover, an admirable pattern to my brother officers, by the cool, steady, upright, downright, and impartial discharge of my business, and the constancy with which I stand at my post. Summer or winter, nobody seeks me in vain; for all day long I am seen at the busiest corner, just above the market, stretching out my arms to rich and poor alike; and at night I hold a lantern over my head, both to show where I am, and to keep people out of the gutter.

At this sultry noontide, I am cupbearer to the parched populace, for whose benefit an iron goblet is chained to my waist. Like a dramseller on the mall at muster day, I cry aloud to all in my plainest accents, and at the very tiptop of my voice, "Here it is, gentlemen! Here is the good liquor! Walk up, walk up, gentlemen, walk up, walk up! Here is the superior stuff! Here is the unadulterated ale of father Adam—better than Cognac, Hollands, Jamaica, strong beer, or wine of any price; here it is by the hogshead or the single glass, and not a cent to pay! Walk up, gentlemen, walk up, and help yourselves!"

It were a pity if all this outcry should draw no customers. Here they come. A hot day, gentlemen! Quaff and away again, so as to keep yourselves in a nice cool sweat. You, my friend, will need another cupful, to wash the dust out of your throat, if it be as thick there as it is on your cow-hide shoes. I see that you have trudged half a score of miles to-day; and, like a wise man, have passed by the taverns, and stopped at the running brooks and well-curbs. Otherwise, betwixt heat without and fire within, you would have been burnt to a cinder, or melted down to nothing at all, in the fashion of a jelly-fish. Drink, and make room for that other fellow, who seeks my aid to quench the fiery fever of last night's potations, which he drained from no cup of mine. Welcome, most rubicund sir! You and I have been great strangers hitherto; nor, to confess the truth, will my nose be anxious for a closer intimacy, till the fumes of your breath be a little less potent. Mercy on you, man! the water absolutely hisses down your red-hot gullet, and is converted quite to steam, in the miniature tophet which you mistake for a stomach. Fill again, and tell me, on the word of an honest toper, Did you ever, in cellar, tavern, or any kind of a dram-shop, spend the price of your children's food for a swig half so delicious? Now, for the first time in these ten years, you know the flavor of cold water. Good-bye; and whenever you are thirsty, remember that I keep a constant supply at the old stand. Who next? O my little friend, you are let loose from school, and come hither to scrub your blooming face, and drown the memory of certain taps of the ferule, and other schoolboy troubles, in a draught from the Town Pump. Take it, pure as the current of your young life. Take it, and may your heart and tongue never be scorched with a fiercer thirst than now. There, my dear child, put down the cup, and yield your place to this elderly gentleman who treads so tenderly over the paving stones that I suspect he is afraid of them. What! he limps by, without so much as thanking me, as if my hospitable offers were meant only for people who have no wine cellars. Well, well, sir—no harm done, I hope! Go draw the cork, tip the decanter; but, when your great toe shall set you a-roaring, it will be no affair of mine. If gentlemen love the pleasant titillation of the gout, it is all one to the Town Pump. This thirsty dog, with his red tongue lolling out, does not scorn my hospitality, but stands on his hind legs, and laps eagerly out of the trough. See how lightly he capers away again! Jowler, did your worship ever have the gout?

Impute it, I beseech you, to no defect of modesty, if I insist a little longer on so fruitful a topic as my own multifarious merits. It is altogether for your good. The better you think of me, the better men and women will you find yourselves. I shall say nothing of my all-important aid on washing-day; though, on that account alone I might call myself the household god of a hundred families. Far be it from me also to hint, my respectable friends, at the show of dirty faces which you would present without my pains to keep you clean. Nor will I remind you how often, when the midnight bells make you tremble for your combustible town, you have fled to the Town Pump, and found me always at my post, firm amid the confusion, and ready to drain my vital current in your behalf. Neither is it worth while to lay much stress on my claims to a medical diploma, as a physician whose simple rule of practice is preferable to all the nauseous lore which has found men sick or left them so, since the days of Hippocrates. Let us take a broader view of my beneficial influence on mankind.

No; these are trifles compared with the merits which wise men concede to me—if not in my single self, yet as the representative of a class—of being the grand reformer of the age. From my spout, and such spouts as mine, must flow the stream that shall cleanse our earth of the vast portion of its crime and anguish, which has gushed from the fiery mountains of the still. In this mighty enterprise the cow shall be my great confederate. Milk and water! The TOWN PUMP and the Cow! Such is the glorious copartnership that shall tear down the distilleries and brew-houses, uproot the vineyard, shatter the cider-presses, ruin the tea and coffee trade, and finally monopolize the whole business of quenching thirst. Blessed consummation! Then poverty shall pass away from the land, finding no hovel so wretched that her squalid form may shelter itself. Then Disease, for lack of other victims, shall gnaw its own heart, and die. Then Sin, if he do not die, shall lose half his strength. Until now, the phrenzy of hereditary fever has raged in the human blood, transmitted from sire to son, and rekindled in every generation by fresh draughts of liquid flame. When that inward fire shall be extinguished, the heat of passion cannot but grow cool, and war—the drunkenness of nations—perhaps will cease. At least, there will be no war of households. The husband and wife, drinking deep of peaceful joy—a calm bliss of temperate affections—shall pass hand in hand through life, and lie down not reluctantly at its protracted close. To them the past will be no turmoil of mad dreams, nor the future an eternity of such moments as follow the delirium of the drunkard. Their dead faces shall express what their spirits were, and are to be, by a lingering smile of memory and hope.

Ahem! Dry work, this speechifying; especially to an unpracticed orator. I never conceived, till now, what toil the temperance lecturers undergo for my sake. Hereafter, they shall have the business to themselves. Do, some kind Christian, pump a stroke or two, just to wet my whistle. Thank you, sir! My dear hearers, when the world shall have been regenerated by my instrumentality, you will collect your useless vats and liquor casks into one great pile, and make a bonfire in honor of the Town Pump. And when I shall have decayed, like my predecessors, then, if you revere my memory, let the marble fountain, richly sculptured, take my place upon the spot. Such monuments should be erected everywhere, and inscribed with the names of the distinguished champions of my cause. Now, listen; for something very important is to come next.

There are two or three honest friends of mine—and true friends I know they are—who, nevertheless, by their fiery pugnacity in my behalf, do put me in fearful hazard of a broken nose, or even a total overthrow upon the pavement, and the loss of the treasure which I guard. I pray you, gentlemen, let this fault be amended. Is it decent, think you, to get tipsy with zeal for temperance, and take up the honorable cause of the Town Pump in the style of a toper fighting for his brandy bottle? Or can the excellent qualities of cold water be no otherwise exemplified than by plunging, slapdash, into hot water, and wofully scalding yourself and other people? Trust me, they may. In the moral warfare which you are to wage, and, indeed, in the whole conduct of your lives, you cannot choose a better example than myself, who has never permitted the dust and sultry atmosphere, the turbulence and manifold disquietudes of the world around me, to reach that deep, calm well of purity which may be called my soul. And whenever I pour out that soul, it is to cool earth's fever, or cleanse its stains.

One o'clock! Nay, then, if the dinner-bell begins to speak, I may as well hold my peace. Here comes a pretty young girl of my acquaintance, with a large stone pitcher for me to fill. May she draw a husband, while drawing her water, as Rachel did of old. Hold out your vessel, my dear! There it is, full to the brim; so now run home, peeping at your sweet image in the pitcher as you go; and forget not, in the glass of my own liquor, to drink —"SUCCESS TO THE TOWN PUMP!"—*Nathaniel Hawthorne.*

LIFE.

WOULDST thou live long?
Strive to live well; tread in the upright ways,
And rather count thy actions than thy days;
Then thou hast lived enough among us here;
For every day well spent I count a year.
Live well, and then how soon so'er thou die,
Thou art of age to claim eternity.
But he that outlives Nestor, and appears
To have passed the date of gray Methuselah's years,
If he his life to sloth and sin doth give,
I say he only was—he did not LIVE.

—*Randolph.*

MAKE HOME ATTRACTIVE.

THERE is such a thing as throwing round a home so many beautiful things—I do not mean beautiful in art to catch the eye, but beautiful in thought and association, to hold the heart—that children shall cling to it with an undying love. The point which we have before us is that of binding our children to us; and I believe that here, in making homes pleasant, is an instrumentality whose importance is not understood as it ought to be. The complaint is often made by parents, and with sadly too frequent truthfulness, that as soon as their children become old enough to mingle in society, their home is forsaken, they seem uneasy and restless when compelled to remain even for a single evening there, and almost any other place seems to be preferred to that where father and mother and brothers and sisters are found. This complaint is made with a tone of deep regret; but at the same time, perhaps, the parents who make it have no suspicion that, after all, the cause of what they deprecate is found in themselves. No child, however sentimental, will love a home simply because it has the *name* of one. If we would have our children love it, we must make it lovely, we must give them something to love in the home.

Now if the principal ideas which a child has of his home are, that it is a place where he gets his meals, and where he sleeps; where, if he is little, he is perpetually found fault with; where he must keep quiet; where at night-fall he must sit stupidly waiting till bed-time; or, if he has grown older, he can only deem it a dreary room in which he must employ himself as best he may, while the father sits at his paper or doses in his chair, and the mother is silently busy with her sewing or her book; if such be the aspect of home, one need not wonder that children learn to look elsewhere for pleasure, and seek to find amusement in other circles, or that home is forsaken as soon as it is possible to leave it.

It is practicable to make a home so delightful that children shall have no disposition to wander from it or prefer any other place; it is possible to make it so attractive that it shall not only firmly hold its own loved ones, but shall draw others into its cheerful circle. Let the house, all day long, be the scene of pleasant looks, pleasant words, kind and affectionate acts; let the table be the happy meeting-place of a merry group, and not a dull board where a silent, if not sullen, company of animals come to feed; let the meal be the time when a cheerful laugh is heard, and good things are said; let the sitting-room, at evening, be the place where a smiling company settle themselves to books or games, till the round of good-night kisses is in order; let there be some music in the household—music not kept like silk and satins to show company, but music in which father and mother and sister and brother join; let young companions be welcomed and made for the time a part of the group, so that daughters shall not deem it necessary to seek the obscurity of back parlors with intimate friends, or to drive father and mother to distant apartments,—in a word, let the home be surrounded by an air of cozy and cheerful good-will; then children need not be exhorted to love it—you will not be able to tempt them away from it.—*Wm. Aikman, D. D.*

Curious Time-Pieces.—In the South Kensington Museum at London, is a small watch about a hundred years old, representing an apple, the golden case ornamented with grains of pearl. Another old Nuremburg watch has the form of an acorn, and is provided with a dainty pistol which perhaps serves as an alarm. In London is an eagle-shaped watch, on which, when the body of the bird is opened, a rich enameled face is seen. They are sometimes found in the form of ducks or skulls. The Bishop of Ely had a watch in the head of his cane, and a prince of Saxony had one in his riding saddle. A watch made for Catharine I. of Russia is a repeater and a musical watch. Within are the Holy Sepulcher and the Roman guard. By touching a spring the stones move away from the door, the guards kneel down, angels appear, and the holy women step into the tomb, and sing the Easter song that is heard in the Russian churches. King George III. of England had a watch not larger than a five-cent piece, which had one hundred and twenty different parts, the whole not weighing quite as much as a ten-cent piece.

—An Arab proverb: "All sunshine makes the desert."

Popular Science.

—A Connecticut inventor proposes to plow by wind-power, and has invented a machine for the purpose.

—The Swiss railroad companies now cover a portion of their carriages with a phosphorescent preparation, which makes them visible at night.

—Prof. Young attributes the wonderful sunset displays which occurred a few weeks ago to volcanic dust from the eruptions on the Island of Java.

—The remarkable "after-glow," which has been visible after sunset within the last few weeks, has been noticeable all over the world. It is attributed by some astronomers to volcanic dust.

Water-Proof Clothing.—Water-proof clothing which allows a free passage for respiration can be prepared by dipping in a solution of acetate of alumina. The latter is made by adding a solution of acetate of lead to a solution of alum, and decanting the mixture from the sulphate of lead which is precipitated. The articles are dipped into this liquid, and allowed to dry without wringing them.

Symbiosis.—Professor Hertwig, according to *Nature*, at the last meeting of German naturalists, read a paper on this subject. This term, *symbiosis*, first suggested by De Bary in connection with certain phenomena of the vegetable world, is here extended to the whole organic system. As distinguished from ordinary parasitism, it is explained to mean the normal fellowship or association of dissimilar organisms which dwell together in a common abode for their mutual welfare. In the case of parasites, the connection is altogether one-sided, one of the two organisms attaching itself to the other, and flourishing at its expense, as, for instance, the mistletoe on the apple-tree.

But in this newly revealed phenomena of symbiosis, which appears to pervade the whole biological world, both associates are mutually beneficial, and in some instances even indispensable to each other. They act, so to speak, like two partners in a well-regulated business concern, co-operating in the work of life, taking part in all its toils and troubles, and honorably sharing the common profits. An illustration is drawn from the familiar hermit crab, one species of which, after taking possession of the first available empty shell, goes into partnership with a sea anemone (*Adamsia palliata*). This lonely creature, bright orange spotted with red, attaches itself to the roof of the common abode in such a position that its mouth and prehensible apparatus are always turned toward the head of its associate. It is thus enabled to join in all the expeditions of the restless hermit crab, and conveniently share in the common plunder. In return for this service, the anemone protects his companion from his many enemies by means of the numerous long threads which it shoots out at the least alarm, and which are provided with millions of capsules charged with a stinging acid like that of the common nettle. So close is the compact entered into by the two partners, that both have become indispensable to each other, as appears from a series of experiments made at the Neapolitan Aquarium. If the crab be removed from his house, and this be stopped up so as to prevent his re-entering it, he will cast about for another shell, and never stop until his old associate is also transferred to their new abode.

A still more remarkable illustration is drawn from the *imbauba*, or candle-nut tree of South America, which strikes up an alliance with a species of small black ant to their mutual benefit.—*Scientific American.*

OILING THE WAVES.

WILLIAM J. CARD, a captain of the coasting schooner, Turban, reports some interesting particulars of his use of oil to break the force of the waves, on a voyage from North Carolina to Nova Scotia, in September last. The schooner was of 163 tons registered, with a cargo of 300 tons railroad iron, which loaded her down until her gunwales were not more than two feet above water. On the third day out, the weather became boisterous, and on the following morning, soon after day-break, the vessel ran into a gale. The wind was varying about from southeast to northeast, and blew up a heavy sea, the fury of which was increased by a cross sea, caused by the hurricane that had prevailed for some days to the southward of the vessel's position. The schooner, by reason of her deep loading, was completely at the mercy of the seas, which broke over her with terrific force.

Soon after noon, Capt. Card stationed a man in the bow of the schooner,—it being unsafe to venture on the jib-boom, which was in danger of being carried away by the seas,—and directed him to throw over from a small oil-can a little oil at the approach of every "comber." The oil was poured out through the spout of the can, and the Captain estimates the quantity thrown over each time at rather less than an ordinary tumblerful. As the supply on board was limited, it was thrown out only at the approach of very heavy seas.

At first petroleum burning-oil was used, and while this had some effect, it was not heavy enough to thoroughly break the wave, and linseed oil—some ten gallons of which had been laid in for painting purposes—was then employed. The result was in every way satisfactory, and the use of the oil was continued for about fifteen hours, by which time the supply was exhausted. The fury of the gale had, however, subsided, and the schooner reached port in safety. Capt. Card says that without the use of the oil the vessel could not have outlived the gale, the effect of the oil having been to level the comb of the wave and prevent its breaking over the vessel.—*Scientific American.*

GOOD HEALTH.

BATTLE CREEK, MICH., MARCH, 1884.

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

A HYGIENIST ABROAD.

THE LAND OF THE MIDNIGHT SUN.

(*Continued.*)

LEAVING Stockholm at seven P. M., we reached Ramlösa at eleven o'clock the next forenoon. Here we saw Prof. Hartelius, and were delighted to discover that he spoke German well, and a little English, so that between the two, we were able to get along admirably. We found the Professor a very young looking gentleman of sixty-five,—that is, young looking for his age, and he assured us that he was as vigorous and hearty as at any period of his life. He works hard every day, administering movements with his own hands from early morning till late at night, being thronged with patients, who follow him to the sea-side, and flock thither from various parts of Sweden, Denmark, and Germany. He informed us that he also occasionally had patients from England and America. We were most affably received, and the Professor at once undertook to exhibit to us the Swedish Movement Cure in its various phases, illustrating its proper application by patients, and giving us every facility to become familiar with the results of his experiments of nearly half a century, with this particular mode of treatment.

We remained with him at his charming resting-place a sufficient length of time to acquire the information desired, which, thanks to the Professor's readiness to assist us, we were able to accomplish in a shorter time than we expected, as he devoted many hours to our special instruction, which he should have spent in rest and recreation from his arduous professional labors. In Sweden, the Professor of Swedish Movements does not simply prescribe and direct the treatment, but administers it with his own hands, and hence goes through an immense amount of hard work. However, to our surprise, Prof. Hartelius seemed as lively after spending a whole day in arduous work as when he appeared in the morning before breakfast to receive his earliest patients.

We were surprised to discover, through our experience with Dr. Hartelius, how little is known of this excellent mode of treatment in America. There is very much which passes with us as Swedish Movements, which is very different from the real thing. It is probably largely on this account that with us the system has never acquired so great celebrity as in Sweden, where it is as popular as the Cold Water Cure is in Germany. Great numbers of persons in the larger cities of Sweden are as dependent upon Swedish Movements for a comfortable existence as upon their daily food. These persons are usually sufferers from organic disease of the heart, asthma, or some serious nervous affection of an organic character, such as *locomotor ataxia*, which the movements always relieve in the most remarkable manner, even though, like other remedies, they cannot accomplish a cure. In the treatment of lateral spinal curvature, no method can accomplish what Swedish Movements can, when skillfully applied. In these cases, the nicest precision is required, and we feel greatly indebted to the kind-hearted old Professor for the great pains he took to give us a thorough knowledge of the special methods which he employs in these cases.

We were also very glad of an opportunity to acquire knowledge of a method of treatment quite new to us, known as Nerve Impression, which, though not in the highest degree agreeable, is found of immense value in the special cases to which it is adapted.

We found at Ramlösa a Cold Water Cure under the direction of Prof. Bienz, who occupies the chair of Pathology in the University of Upsala, one of the great educational institutions of Sweden. We found Prof. Bienz a very affable gentleman, thoroughly scientific, and well versed in the literature of England, America, and Germany, as well as that of his own country. Although able to read English readily, he was unable to converse, in consequence of not being familiar with the pronunciation; but by using our limited stock of German to the best advantage, we enjoyed a very pleasant conversation with him. In looking through the treatment rooms, we observed a chronic rheumatic taking a pack. The patient lay on a small couch, enveloped in many heavy blankets, with a broad strap outside of them, by means of which he was secured to the bed, making escape im-

possible until his term of imprisonment had expired. We expressed some doubt whether free-born Americans would endure this mode of administering treatment.

After accomplishing our mission in Sweden, we took a steamer at Helsingborg, by which we crossed an arm of the sea, and then continued along the shore to Copenhagen, where we spent the night. Taking the cars the next morning, in twenty-four hours we found ourselves in Cologne.

We formed a much more favorable opinion of the Swedish people from our brief acquaintance with them in their own country than we had previously held, our former impressions having been derived chiefly from occasional glimpses of emigrant parties *en route* to some destination in the far West. We found them cleanly, intelligent, thrifty, good-looking, and generous. At the railway station, where we improved the opportunity of a little longer stop than usual to replenish our water-bottle, we were unable to prevail upon a kindly dame who washed and refilled our bottle, to take even the smallest remuneration, which, we are obliged to say, was the first time we experienced the sensation of having a tender of money refused during all our journey on the continent of Europe. In England, if you inquire upon the street for the location of a place you are looking for, your informer will probably tell you it is "Just around the corner," and, touching his hat, make some such remark as "Ard times, sir," "Drink yer elth, sir?" or something similar, which, interpreted in plain English, means, "A shilling or a sixpence, if you please." The porter who takes your baggage at a hotel expects a fee for it, and another when he carries it out again, at your departure. If you expect to get a respectable dinner at a hotel table, the waiter must be fed beforehand. In France and Italy, it is really affecting to see the tender manner in which all the porters and waiters press close together around you to bid you farewell, and wish you a pleasant journey. But should you so grossly misinterpret the object of this remarkable manifestation as to suppose it to spring from a real interest in your welfare, and attempt to take your leave without depositing in the hands of each a shilling, you will at once discover that their tender regard is closely centered on your pocket, and means *cash*.

On reaching Cologne, we found letters and telegrams indicating the necessity of our immediate return home, and hastily arranging our numerous parcels of baggage, we were off for London by the first train *via* Calais and Dover, as we wished to make the Channel passage as short as possible.

—Out of ninety specimens of coffee purchased in London shops, only five were genuine.

THE DANGEROUS FLY.

We have had much sympathy for the fly, believing the little creature to be a pretty good sanitarian on account of the avidity with which it devours germs, as it consumes prodigious numbers of them; but if what Dr. Grassi says of these little creatures is true, we must cease to defend them, and begin a war of extermination. We present the following facts at the present time, so as to give an opportunity to prepare for protection against these newly discovered enemies of life and health:—

"It was always recognized that these insects might carry the germs of infection on their wings or feet, but it was not known that they are capable of taking in at the mouth such objects as the ova of various worms, and of discharging them again unchanged in their fæces. This point has now been established, and several striking experiments illustrate it. Dr. Grassi exposed in his laboratory a plate containing a great number of the eggs of a human parasite, the *tricocephalus dispar*. Some sheets of white paper were placed in the kitchen, which stands about ten meters from the laboratory. After some hours, the usual little spots produced by the fæces of flies were found on the paper. These spots, when examined by the microscope, were found to contain some of the eggs of the tricocephalus. Some of the flies themselves were then caught, and their intestines presented large numbers of the ova. Similar experiments with the ova of the *oxyuris vermicularis* and of the *tænia solium*, afforded corresponding results. Soon after the flies had some moldy cream, the *oïdium lactis* was found in their fæces. Dr. Grassi mentions an innocuous and yet conclusive experiment that every one can try. Sprinkle a little lycopodium on sweetened water, and afterward examine the fæces and intestines of the flies; numerous spores will be found. As flies are by no means particular in choosing either a place to feed or a place to defe-

cate, often selecting meat or food for the purpose, a somewhat alarming vision of possible consequences is raised. Dr. Grassi invites the attention of naturalists to the subject, and hopes that some effectual means of destroying flies may be discovered."

TOBACCO AND BLINDNESS.

We are pleased to find in so excellent and influential a children's paper as the *Youth's Companion* the following suggestive paragraphs on tobacco-using:—

"Whatever the race may have been once, it is not now physiologically perfect. The diseases, ailments, and morbid tendencies of men of the present day are the accumulated results of the bad hygienic influences that have flowed in upon the race in all past time. Each human being is now born with one or more weak points, at which he is most likely to break down, and hence is differently affected by the same exposure.

"Now, it is not often that a man knows what his weak points are, and therefore it behooves him to observe, as far as possible, every law of hygiene, and not allow himself to tamper with agents of possible harm, because thousands of other men have apparently used these agents with impunity.

"As to these thousands who have apparently escaped injury, the case is not by any means closed with them; and as for the man who is tempted to do as they have done, the harmful agent may make for his weakest point with all the certainty of fate. Who would be foolish enough to use tobacco if he knew that in time blindness would be the result? But see what Prof. Reynolds said in an address to a class of medical graduates:—

"'It is a well-known fact that tobacco poisons the nerve-centers of a majority of the male members of the human family. Careful investigation has led to the discovery that smoking produces the so-called *amblyopia*—dimness of vision. This form of amblyopia is precisely identical in all respects with that produced by the excessive use of alcohol. Both are incurable. I know a number of persons here (in Louisville) who are practically blind from an excessive use of tobacco.'"

THE MINERAL SPRING MANIA.

Among the various exhibitions of charlatanry which have characterized the present as an age of quackery, few have been more successful than the much vaunted and advertised mineral springs, located in various parts of the country from Maine to Texas. Each well claims special virtues which give it a precedence over all others; and if the claims made for any could be believed, it must be supposed that disease is no longer a dreaded foe, armed with destructive energies, against which all human resources may be unavailing, but rather a trivial accident of life which might be cheerfully endured for the pleasure of demonstrating the ease with which this or that marvelous mixture of minerals, moisture, and moonshine can oust the demon of disease, and restore Hygeia to her throne.

According to an old adage, which has come to be a vulgarism, "Every dog has his day," and so has every mineral spring. The ephemeral notoriety acquired by misrepresentation, exaggeration, and lavish advertising, is no adequate substitute for a reputation built upon a basis of professional skill and candor, wide and accurate information, and success in the treatment of curable diseases.

We do not deny that mineral water as used at mineral springs is beneficial, but are convinced, by a careful investigation of the matter, that the good accomplished is seldom attributable to other properties than those possessed by mineral water and pure water in common. We might cite many evidences of this fact, but will simply refer the reader to an article in the February number from the pen of the able and scientific editor of the "*Popular Science News*," entitled "Inward Cleanliness."

TOBACCO CANCER.

THE *Signs of the Times* publishes the following interesting note:—

"An afflicted man has sent inquiries to us concerning a certain physician who cured him of a cancer. When it was pronounced cured, the doctor warned him not to resume the use of tobacco. If he would heed this warning, he would warrant that the cure was permanent; but as it was caused by the use of tobacco, if he continued to use the poison, it would produce the same result again. He resumed the use of tobacco, and now has a cancer developed on his lip. What folly! he knew the consequences, but took the fearful risk. And so every day people are inviting foul diseases by the use of this filthy, poisonous stuff."

Some years ago we earnestly warned an elderly gentleman of the danger he was incurring by the use of tobacco, explaining to him how it often resulted in cancer of the lip on account of its poisonous and irritating properties. A few years later we met him again, and were startled at seeing upon his lip an ugly scar. Urging at once elicited the fact that he had recently had removed from his lip a well developed epithelioma, one of the worst forms of cancer. The weeks of torture through which he had passed had left him pale, emaciated, and dejected. He had been compelled to abandon his cigar at last, but the mischief had already been done, and henceforth he must live in horror of the possible return of a malady which is among the most difficult to cure of all human diseases.

Vaccinating Hogs.—At the suggestion of M. Pasteur, the vaccination of hogs as a preventive of hog-cholera has been undertaken in France, and, it is reported, with favorable results so far as the hogs are concerned, since they all survive the vaccination, and seem to be less liable to the disease afterward. The pig is evidently climbing up the scale of being. The right to be vaccinated has been supposed to pertain exclusively to human beings; but this inalienable right must now be shared with *sus scrofa*.

An Epidemic of Trichinosis.—The *New York Medical Journal* gives an account of a late outbreak of trichinosis at Emersleben, in Saxony, as follows:—

"The outbreak took its origin from a trichinous hog which was the offspring of an English boar and a native sow. This hog, which had been kept in a stable, was killed on the 12th of September. The butcher gave a slice of the carcass to two of his neighbors, who ate it raw the next day. Both of them fell sick on the 16th, and died a month later. The remainder of the meat was minced by the butcher, mixed with other meat, and was sold from the 13th until the 19th of September. All who made use of this mixture, except five persons who took it slightly cooked, used it perfectly raw, spread on bread, after the German fashion, and soon there were two hundred and fifty persons sick with the disease, of whom forty-two died. In the neighboring villages, sausages sold by the same butcher gave rise to a hundred and twenty-six cases, of which eleven were fatal. At first the true nature of the trouble was not suspected, but subsequent facts left no room for doubt on the point."

Fire Protection.—The folly of trusting to what is termed "fire-proof construction" as a protection from fire was recently illustrated by the burning of an "absolutely fire proof" theater in Cleveland. Notwithstanding the fact that the theater had been completed only two months, and was constructed in a manner supposed to be absolutely fire proof, it was entirely consumed in three-quarters of an hour after the fire broke out. The only reliable protection from fire is careful supervision of premises, and ample facilities for putting out a fire should it occur,

and for escaping from the building in haste if necessary. A "fire-proof" building without fire-escapes is little better than a man-trap.

Criminal Carelessness.—A man who will sink a cesspool and a well in such relation to each other that the contents of the latter are morally certain to find their way into the former, is guilty of criminal carelessness as much as is the sea-captain who runs his ship upon a rock in broad day-light, or the railroad engineer who neglects to heed the red flag placed upon the track to warn him of danger ahead. Last summer two boarders died at Little Boar's Head, a summer resort at Rye Beach, N. H., of typhoid fever. An investigation showed that the well which furnished water to the visitors "was sunk near the base of a hill, while a cesspool for the reception of refuse was located higher up the same hill." No doubt there are thousands of just such wells in the hilly State of New Hampshire; and a few years ago the State Board of Health of Massachusetts instituted an investigation which showed that fully half of all the wells in that State were dangerously near cesspools or privy vaults, and likely to be contaminated by them. If both well and cesspool must exist on the same hillside, let the well be uppermost rather than the filth reservoir; but better still, banish the cesspool entirely, and burn the filth which usually goes into it.

New Disease in Cattle.—The name of this new malady is *Actinomycosis*, or what is commonly known as "swell-head." This malady was first discovered in Munich about six years ago, being at that time found to be a parasitic disease, due to the presence of a rapidly-growing fungus. It has since been discovered in the hog and in man. It generally first attacks the jaws, and probably gains access to the deeper tissues through carious or defective teeth. It spreads into the tissues of the head, causing tumefactions, suppuration; finally, if unchecked, pyæmia, and death. It may gain the blood and be transferred to other parts of the body. This happens especially with man, upon whom the parasite acts most virulently. It is supposed that its source is the grain with which animals are fed. The disease is generally fatal.

Scarlet Fever in Dogs and Cats.—A New York physician has recently published several cases in which scarlet fever was communicated to children by cats, and one in which a pet dog contracted the disease from its owner, and died. The opinion of an eminent veterinary surgeon is quoted in support of the theory that the common distemper in dogs is really the same as measles in the human subject.

Bitten by a Mad Dog.—"Minnie Milner, three and a half years old, of Munroe avenue and Kingsbridge road, was badly bitten yesterday by a rabid dog. Patrolman Vaughan shot the dog."

We quote the above from a late daily to call attention to the fact that rabies, or hydrophobia, is not a malady confined to the "dog days," or the hot days of summer, as many suppose, but may occur at any season of the year. We also wish to improve the opportunity to condemn the common practice of shooting or otherwise destroying the supposed mad dog which inflicts a bite. The dog should in every case be captured and preserved alive if possible, being confined so as to prevent the possibility of further mischief. It is a well-known fact that dogs are often supposed to be mad when they are not, and it is equally well known that many persons have died of hydrophobia, or of fright, who had been bitten by a dog, but not by a dog suffering with hydrophobia. The long interval which may elapse between exposure to the poison of rabies through a bite and the occurrence of the disease, and the horrible suspense to which a per-

son is subjected who believes himself to have been thus exposed, makes it of the greatest importance that all suspected animals should be kept alive sufficiently long to determine with absolute certainty whether or not they are really suffering with this horrible malady.

Tobacco Deafness.—We have under treatment a case of deafness which we attributed to tobacco-using, much to the surprise of the patient, a gentleman who has been addicted to smoking for years, most of the time to great excess. On examination, we found that the incessant smoking had occasioned a chronic inflammation of the throat, which had extended up the eustachian tube into the middle ear, causing such serious injury of the delicate structures of the ear that the hearing distance was reduced to a few inches. The habit was discontinued, and proper treatment begun, and the result is the patient is now able to hear several feet, and the hearing is steadily increasing. We have met a number of similar cases, some of which, however, were so far advanced that recovery was impossible. The use of tobacco in the form of cigarette smoking is the most injurious to the ears.

Cold Baths in Typhoid Fever.—Some years ago Prof. Brand, an eminent European physician, showed by carefully compiled statistics and numerous experiments that typhoid fever may be more successfully treated by the cold bath than by any system of medication. Since the publication of his results, they have been confirmed by numerous observers, among the most recent of whom is M. Dumontpallier, an eminent French physician. When in Copenhagen last summer, we found this method in use, and the surgeon in charge assured us that he considered it *the* method above all others. Our own practice is less heroic, consisting chiefly of the use of cold compresses, cool sponging, and the cool enema, rather than the cold full bath, as recommended by Brand.

Scientific Folly.—Several companies of eminent European physicians have been spending some time in Egypt during the present outbreak of cholera in that country, investigating the cause of that grave malady. It is recently reported that Prof. Koch, the discoverer of the tubercle *bacillus*, has determined the cause to be a vegetable fungus. A young scientist who accompanied the expedition lost his life by the foolish experiment of injecting into his veins the blood of a patient sick with cholera. He died six hours later while examining his own blood with a microscope. Another has since died in a similar manner.

Antidotes for Griddle Cakes.—A New York paper recently published the following item: "Three children of Mr. George Graham—William, aged seven years, Jennie, aged four, and George, aged ten—were taken violently sick yesterday, after eating griddle cakes made from wheat flour. A physician administered antidotes, and the children are now improving. The mother of the children, who had been recently confined, was so prostrated by the serious illness of the little ones that she died the next morning."

It is interesting to conjecture what sort of antidotes a physician would administer for that very commonly administered, but not less poisonous, compound of burnt grease and sour batter known as "griddle cakes." That the tender stomach of a four-year-old child should revolt against this abominable mixture is less surprising than that so many thousands of human stomachs will tolerate such an abuse so many years with seeming impunity. The antidote we would recommend for griddle cakes is total abstinence.

—The foot-and-mouth disease, a contagious malady, is prevailing very extensively among cattle in England.

—A man dropped dead in the streets of Lansing a few days ago. Cause, intemperance.

DOMESTIC MEDICINE.

CATARRH.

In the series of articles of which this is the first, we shall include, with the subject of nasal catarrh, catarrh of the throat and ears, as the last-mentioned diseases usually arise by extension of the morbid processes over the nasal cavity to the localities indicated. We shall consider the subject in the following order :—

1. Nature of the disease ;
2. Causes ;
3. Symptoms ;
4. Rational treatment.

NATURE OF CATARRH.

This disease derives its name from the fact that it is usually accompanied by a more or less copious discharge. Hippocrates and other ancient medical authors entertained the singular

theory that the discharge from the nose in nasal catarrh originated in the brain. A vestige of this ancient error still survives in the notion that the act of sneezing is a valuable means of "clearing the head." A microscopical examination of the catarrhal discharge shows it to be made up of dead epithelial cells, combined with a varying quantity of serum from the blood.

To explain more clearly the nature of the discharge, it will be necessary for us to dwell a moment upon the structure of mucous membranes. The term *mucous membrane*, is applied to the lining membrane of all cavities within the body which communicate freely with the exterior. The alimentary canal, beginning with the mouth and terminating with the anus, the respiratory passages, the ears and the passages connecting them with the nasal cavity, and the urinary and genital passages, are all lined with mucous membrane. On examination with the microscope, this membrane is found to be made up of a mesh-work of fibres, among which ramify numerous small arteries, veins, capillaries, and nerves, the whole being covered with many layers of minute cells, a few of the different forms of which are shown in the accompanying engraving. Scattered through the membrane, and connecting with its surface, are numerous glands, the purpose of which is to secrete a fluid by which the surface of the membrane is moistened and lubricated.

The structure of the skin covering the surface of the body, is the same as that of the mucous membrane, though somewhat more complicated. The surface of the skin, however, is not moist, as is that of the mucous membrane, as the fluid secretion evaporates as rapidly as it is produced, under ordinary circumstances.

A catarrh is a condition in which the scales or dried cells covering the membrane are shed too rapidly. There is also in catarrh an abnormal activity of the mucous glands or follicles of the membrane. The skin, as well as the mucous membrane, is subject to catarrh. The disease commonly known as salt-rheum, a form of eczema, is a variety of catarrh of the skin. Catarrh of the skin is usually dry in character, the cells being cast off in the form of branny scales. It is, however, sometimes moist in character, especially when in the acute stage. So, also, we have a dry catarrh of the skin, although in the usual form of the disease there is a more or less profuse liquid discharge.

Chronic catarrh is not, as many persons suppose, a chronic inflammation of the part affected, but is accompanied by more or less congestion, usually of a passive character. The blood-vessels of the affected membrane are greatly relaxed, and turgid with venous blood. The constant pressure of blood induces an excessive secretion, and the premature death of the covering cells. The secretion decomposes, and becomes acrid, increasing the irritation, and ultimately causing ulceration. The excessive blood supply of the membrane occasions swelling and abnormal growth. The membranes lining the nasal cavity and other portions of the respiratory tract become thickened, and various unhappy results follow, which will be fully described under the head of *Symptoms*.

MILK DIET IN BRIGHT'S DISEASE.

"SINCE we know not at present," says the *Medical and Surgical Reporter*, "any drug that possesses therapeutic value to any marked extent in this terrible and fatal disease, and since it is daily making sad havoc among human beings, and principally among that class who, by reason of their valuable public labors, are particularly necessary to the welfare of the world, therefore, it becomes a medical question of paramount interest that we should discover some potent method of combating this very prevalent disease. Some years since, Carel first called attention to the treatment of Bright's disease by the use of a milk diet, and since then Duncan, as well as many other prominent physicians, has written on this subject.

"We have ourselves seen some remarkable results follow this treatment, while Dr. S. Weir Mitchell, of our city, is now quite an enthusiast on this subject. This method of treating a formidable disease has received sufficient distinguished indorsement to recommend it seriously to our notice. We would, therefore, ask all physicians who read this article to try this method of treatment, and to furnish us with their experiences, which we will publish. The milk is used thoroughly skimmed and entirely free from butter. To procure the best results, it has been advised that the patient shall restrict himself absolutely to milk, and continue the treatment for a long time. If it disagrees with the stomach (as it will in some cases), Dr. Mitchell advises that the patient be put to bed, and the treatment commenced with tablespoonful doses, to which lime-water is added, until the stomach tolerates the milk, when from eight to ten pints daily should be taken, and absolutely nothing else. The sanction of such a distinguished physician as Dr. Mitchell forces us to seriously consider the merits of this treatment, and we trust to receive the experience of all the readers of this ournal who may have cases of Bright's disease to treat."

We publish the above for the purpose of adding the remark that advice of this character may be a source of greater injury than benefit, no matter how reliable the advice may be respecting the disease named. Bright's disease is not so common a malady as the advertisements of patent medicine vendors would lead non-medical readers to suppose. Most of the symptoms usually attributed to Bright's disease are really symptoms of common and comparatively innocent maladies, such as indigestion, torpid liver, etc. Persons should not imagine that they are suffering with Bright's disease because they observe some of the numerous symptoms described in the newspaper accounts of the disease. Confinement to an exclusively milk dietary often occasions excessive production of uric acid in the system, as indicated by the presence of a brick-dust sediment in the urine, or a thick, pinkish sediment. Such a condition of the urine indicates a torpid state of the liver.

THRUSH, OR MUGUET.

Symptoms.—Whitish points or a frosty coating; cheesy matter on tongue, roof of mouth, and inside of lips; pain on swallowing; burning pain; disturbance of digestion, often diarrhea.

This disease occurs in infants but a few days or weeks old, in very aged persons, and in persons much exhausted by disease, as just before death in consumption and fevers. In infants the local disease is usually accompanied by acidity of the stomach, which is probably both a cause and an effect of the local disease.

Causes.—The immediate cause of this disease is a vegetable parasitic growth known as the thrush fungus, the production of which is encouraged by lack of proper cleanliness of the mouth. If the mouth of infants is kept thoroughly clean, the disease will never occur. The mouth should always be washed out with a clean wet cloth immediately after feeding, as the remains of food left in the mouth form the best possible soil for the production of the disease. The practice of giving children sugar-teats, or little bags filled with a mixture of bread, milk, and sugar, is a most pernicious one. A more potent means of producing the disease under consideration could not be invented. An acid state of the stomach and a feeble condition of the system favor the production of the disease, probably on account of the greater liability to the accumulation of foul products in the mouth in these conditions. As the disease is probably contagious, care should be taken to isolate patients suffering from it.

Treatment.—Thorough cleansing of the mouth is of first importance. Fungi do not thrive except in presence of filth. Wash the mouth *thoroughly*, before and after feeding, first with cool water, then with a cool solution of borax or sulphite of soda, in the proportion of a dram to the ounce of water. Sugar, honey, and similar preparations should not be employed, as

they encourage rather than cure the disease. After feeding and washing as directed, it is well to apply a mixture of powdered borax and glycerine, in the proportion of a teaspoonful of the powdered borax to two tablespoonfuls of glycerine. Attention should of course be paid to the stomach and bowels, remedies being applied as necessary for the relief of derangements of these organs.

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trayed or Stolen.—Some five years ago we formulated a few rules for dyspeptics, which we give below, publishing the same in our little work, "Digestion and Dyspepsia." A few months ago we printed the same in GOOD HEALTH. To-day they came back to us as an editorial in a popular magazine, published in London, and edited by an eminent physician, a member of the Royal Society. We feel highly complimented that our English friend is willing to give so hearty an indorsement of our views on this subject as to be willing to have them appear as his own. The following are the rules, which will perhaps bear repeating :—

1. Eat slowly, masticating the food very thoroughly, even more so, if possible, than is required in health. The more time the food spends in the mouth, the less it will spend in the stomach.

2. Avoid drinking at meals; at most, take a few sips of warm drink at the close of the meal, if the food is very dry in character.

3. In general, dyspeptic stomachs manage dry food better than that containing much fluid.

4. Eat neither very hot nor cold food. The best temperature is about that of the body. Avoid exposure to cold after eating.

5. Be careful to avoid excess in eating. Eat no more than the wants of the system require. Sometimes less than is really needed must be taken when digestion is very weak. Strength depends not on what is eaten, but on what is digested.

6. Never take violent exercise of any sort, either mental or physical, either just before or just after a meal. It is not good to sleep immediately after eating, nor within four hours of a meal.

7. Never eat more than three times a day, and make the last meal very light. For many dyspeptics, two meals are better than more.

8. Never eat a morsel of any sort between meals.

9. Never eat when very tired, whether exhausted from mental or physical labor.

10. Never eat when the mind is worried or the temper ruffled, if possible to avoid doing so.

11. Eat only food that is easy of digestion, avoiding complicated and indigestible dishes, and taking but one to three kinds at a meal.

12. Most persons will be benefited by the use of oatmeal, wheat meal, or graham flour, cracked wheat, and other whole-grain preparations, though many will find it necessary to avoid vegetables especially when fruits are taken.

How to Give an Oil-Bath.—The oil-bath should always follow another bath of some sort. It may be a tepid sponge, a hot sponge, a saline sponge, tepid or hot, a salt glow, or almost any other form of bath. While the skin is still moist and supple from the bath, the oil should be applied, and well rubbed in. It is well to begin with the extremities, so as to secure a thorough circulation of blood in them. The oil should be rubbed in by friction of the surface, and gentle kneading with a movement similar to that employed by fullers in working their goods. After the whole surface has been treated in this manner, the flesh should be wiped with a clean, dry towel to remove any surplus of oil.

The best oil for this use is refined cocoanut-oil. It cannot usually be obtained at drug stores in a fresh condition, but should never be used when in the least tainted with the odor of decomposition. It may be obtained in quantity, of druggists in the large cities, and if kept in a cool place, and covered with lime-water, will remain sweet for a long time. It may also be preserved by melting and corking tightly in small bottles, each of which should contain only a sufficient quantity for a single bath.

Pure olive-oil is also excellent for this purpose, but it is less limpid and agreeable to most patients than cocoanut-oil. Vaseline, cosmoline, oil of petiolina, and other petroleum products are not to be recommended. Most unwholesome of all is lard in any form. Cotton-seed oil is not objectionable to some, but we have reason for entertaining the suspicion that cotton-seed oil is somewhat irritating in character.

Slippery Elm Poultice.—Pour boiling water on slippery elm flour, making a mixture of proper consistency for a poultice. Apply in the usual manner.

—Oil of Wintergreen is one of the best disinfectants. It is said to be a more active and reliable antiseptic agent than carbolic acid.

Child-bed Convulsions.—Dr. C. Breus, of Vienna, reports great success in the employment of the hot bath in cases of *puerperal eclampsia*, or child-bed convulsions. The bath was taken at a temperature of 100° F., the patient being afterward removed to the bed, and surrounded with warm blankets so as to continue the perspiration. This method is equally successful in preventing the malady, and should be used for some time previous to confinement in cases in which there is swelling of the limbs and other evidences of disturbance of the kidneys.

Question Box.

An Iowa correspondent inquires as follows:—

1. When drinking hot water, should it be sweetened?

2. When a mother is nursing her babe, will tea or coffee aid in giving nourishment for the child?

3. In taking a sponge bath weekly, during winter and summer, which is the healthier, warm or cold water?

Answer. 1. Hot water should not be sweetened. If any flavor is desired, lemon juice or a slice of lemon is the best for the purpose.

2. Tea or coffee contain no nutritive elements, and are simply narcotics. Hot milk will be found beneficial, and is much more to be preferred than the use of tea or coffee.

3. The water should be neither hot nor cold, but about ten degrees less than the temperature of the body, or between eighty and ninety degrees.

Healthful Beds.—A Mississippi correspondent desires to know what kind of beds are the most healthful, since we condemn the use of feather-beds.

Ans. Feathers are unwholesome on account of their great absorbing qualities, by which they take up the secretions and emanations from the body and retain them. They are also objectionable on numerous other grounds. The best material for matresses are excelsior, prepared cotton, curled-hair, and wool.

Warm Bread.—A patient inquires, "Is warm bread unhealthful; if not, are warm gems wholesome?"

Ans. Warm bread is not necessarily unhealthful, but certain kinds of warm bread are always unwholesome. As a rule, we may say that warm yeast bread is always unwholesome. Unleavened bread, if not thoroughly baked, may also be unfit to eat when warm. The unwholesome character of warm bread is due to the fact that the central portion of the loaf or cake, when masticated, acquires a doughy or pasty character, and enters the stomach in adhesive masses, which are almost impervious to the gastric juice. When allowed to cool, chemical changes occur, in consequence of which the bread seems less moist when rubbed between the fingers, or masticated, and instead of becoming pasty, is reduced to fine crumbs. Such bread, when introduced into the stomach, is readily permeable by the digestive fluids, whether leavened or unleavened. The test stated, namely, the rubbing of the bread between the fingers, is a reliable one. When a pasty mass is the result, the bread cannot be taken with safety, whether leavened or unleavened, or whether warm or cold. Gems, when not thoroughly baked, are to some degree open to the same objection as warm bread; but when thoroughly baked, the objection does not hold. Warm bread of any kind is far less likely to produce harmful results when eaten without butter, as the addition of butter to warm bread produces a mass possessed of the most indigestible qualities possible.

"Rex Magnus."—A correspondent wishes to know our opinion of this compound. This much-advertised "food preservative" consists almost wholly of borax and boracic acid, according to the analysis of Dr. Bartley, analytical chemist of the Health Department of Brooklyn. If used according to directions, it is dangerous, and the public should be warned against its use. It is impossible to preserve food by means of antiseptics of any sort, without injury to the health of those using the articles as food.

Sewer Gas.—What is the odor peculiar to sewer gas, and how may its presence be known in the air of a room?

Ans. The characteristic odor of sewer gas is that of sulphureted hydrogen, mingled with other odors, such as are familiar to any one who has ever been in the vicinity of a cess-pool. It cannot be readily detected except by the sense of smell, and the most acute olfactory sense will not always detect its presence.

The only protection from sewer gas is to have none. If the rooms of a dwelling are connected with the sewer, care should be taken to ventilate the sewer in such a manner that gases from it cannot ascend into the house under any circumstances.

Respiratory Exercise.—A patron who subscribes himself, "A Detroiter from home," desires directions for building an inexpensive breathing machine for use by consumptives, to aid in respiration.

The breathing machine proper cannot be made small and cheap. It must be a somewhat expensive apparatus. We have devised a somewhat elaborate apparatus for this purpose, which is now being constructed, and will be described in some future number of the journal. This, however, will probably be too costly for use except in institutions. We may be able to sim-

plify the apparatus so that it can be useful for home treatment. Our friend would better not wait, however, for a machine to aid respiration, as respiratory exercise may be taken by the aid of very simple means, as breathing through a tube, exercise with light dumb-bells, etc. By the aid of another person, artificial respiration may be practiced by Sylvester's method, which consists in alternately raising the extended arms above the head and lowering them to the side, at the rate of eighteen or twenty times per minute. Or the patient may be seated in a chair, and alternately raised and lowered by an attendant standing behind him upon a raised platform, fixing the hands in the arm-pits of the patient. Either one of the last two methods mentioned is nearly or quite as effective as any machine which can be devised.

Alum — Fomentations — Torpid Liver — Warner's Liver Cure.—Mrs. M. A. K. asks the following questions :—

1. What are the injurious effects, if any, of alum on the stomach when taken in small quantities in food?

2. Is it safe to use hot fomentations on the head for neuralgia, and should they be followed by cold applications? "A lady in town last summer used hot applications to her head, and fell dead, and the physicians say it was the hot applications that did it."

3. What is good for a torpid liver? "I have used hot water for over a year, drink several cups a day, and do not see that I am any better. Diet is chiefly milk and fruit."

4. Is there any virtue in Warner's Liver Cure?

Ans. 1. Alum is a powerful astringent, and its long-continued use, even in small quantities, would injure the stomach by producing an irritable state in it. This has been proven by feeding dogs with bread made with alum baking-powder.

Ans. 2. Fomentations may be used for neuralgia of the face or head, but should not be continued a very great length of time; that is, not more than an hour or two, without applying tepid or cold applications for ten or fifteen minutes.

We have never seen any injurious effects from hot applications to the head, even when long-continued. It is possible, however, that the employment of extremely hot applications for several hours, without intermission, might, in the case referred to, have produced the bad results; but the pain for the relief of which the hot applications were made, was probably the result of injury to the brain which had begun before the heat was applied. In this case, it is probable that the employment of the hot fomentations was unfortunate, and that cold should have been used instead. It would be quite improper to conclude that fomentations to the head are unsafe in consequence of one case of the sort mentioned.

Ans. 3. A person suffering with a very torpid liver should adopt a fruit and grain diet, abstaining from the use of nitrogenous food of any kind, such as meat, eggs, etc., in any quantity. If there are no indications to the contrary, hot water to the amount of three to five pints should be taken daily. The best time for taking hot water is an hour to an hour and a half before the meal, and just before retiring at night. The skin should be kept active by daily bathing. The extremities should be thoroughly clothed, so as to secure an equal distribution of blood. The bowels should be kept open by the enemata, if necessary, though the habitual use of the enema is not to be recommended. Fomentations over the liver and stomach three or four times a day, and wearing a wet girdle over it at night, with a dry flannel during the day, are also very beneficial measures.

Ans. 4. Warner's Safe Liver and Kidney Cure is a powerful diarrhetic choloagogue. It possesses no specific virtues, and no remedies which have not been in use by physicians for many years. It cannot be recommended by any scientific or reputable physician.

Charcoal.—An Iowa correspondent, who says that he is a "nervous dyspeptic," a "regular old chronic back-slider for fifteen years," asks the following questions respecting charcoal :—

1. Is one kind of wood better than another for charcoal?

2. How is it best prepared and kept for use?

3. How much is a dose?

4. When best taken, before or after meals?

Answer. 1. The best charcoal for medicinal purposes is that made from hard wood. Charcoal from lignum-vitæ, or box-wood, or the shells of cocoanuts, is superior to that made from other woods. Very excellent charcoal, however, is made from hard maple. We have been experimenting with charcoal made from bran, for some months, and are thus far better pleased with it than with any other which we have ever tried. The best charcoal obtainable at drug stores, is willow charcoal.

2. It should be thoroughly burned. The ordinary charcoal requires to be burned the second time before it is fit for use. It should be ground to a fine powder, like flour, and kept in tight bottles.

3. A dose may be from one-third of a teaspoonful, to two teaspoonfuls. It is best taken in gelatine capsules, or in water. When taken in water, the charcoal should be placed in a tumbler, and a few drops of water added, sufficient to make a thick paste. One or two teaspoonfuls of water may then be added, and the whole stirred up and taken at a single dose.

4. Charcoal, when taken to relieve acid dyspepsia, or to prevent fermentation or flatulence, should be taken within one-half hour after eating.

THE COOKING SCHOOL.

Conducted by MRS. E. E. KELLOGG.

A DINNER OF EIGHT COURSES.

UNFERMENTED BREAD.

UNFERMENTED bread, made without soda, saleratus, or baking-powder, is not, as is apt to be supposed, synonymous with tough, heavy bread, nor need the making of it be an over-difficult operation. It certainly is a much quicker process than the preparation of yeast bread, and has the added advantage of retaining all the nutritive properties of the grain from which it is made; while fermented bread, however skillfully made, is, through the destructive process of fermentation, robbed of a portion of its sweetness and natural flavor. It is vastly superior to breads compounded with soda or baking-powder in point of healthfulness, and when well prepared, will equal them in lightness and palatableness. Soda, saleratus, and the whole tribe of baking-powders—whose name is legion—should never be tolerated. They lighten bread only by adding to it something injurious.

The chemical process of bread-raising originally consisted in adding to the dough definite proportions of muriatic acid and carbonate of soda, by the union of which carbonic acid and common salt were produced. This process was soon abandoned, however, on account of the propensity exhibited by the acid for eating holes in the fingers of the bakers as well as in their bread-pans, and the more convenient one—for hands and pans—of using soda or saleratus with cream of tartar or sour milk, was substituted. Soda and saleratus are in themselves inorganic, indigestible substances. The soda, when used with cream of tartar, forms a chemical salt, which remains in the bread, and which is exactly the same as the Rochelle salts used in medicine. It is the carbonic acid gas that escapes during the process of the combination, that puffs up the loaf. When there is an excess of soda, a portion of it remains in the loaf, uncombined, giving to the bread a yellow color and an alkaline taste, and doing an abundance of mischief to the delicate coating of the stomach into which it is taken.

Soda and pure baking-powder are essentially the same substances, bicarbonate of soda and cream of tartar, mixed in the proper proportions to exactly neutralize each other, and if they were always pure, would certainly be as good as soda and cream of tartar in any form, and possess the added advantage of perfect proportions; but as was demonstrated not long ago, by the government chemist, nearly every variety of baking-powder in the market is largely adulterated with such cheaper but harmful substances as chalk, alum, terra alba, etc. Out of several hundred brands of baking-powder examined, only one was found pure. Nor is the adulteration confined to baking-powder alone; much that is sold as soda and cream of tartar is largely adulterated with injurious and foreign substances. Even in their purest possible state these substances are harmful; but when we add the adulterations, they may become exceedingly pernicious to health.

Fortunately, it is not necessary to manufacture carbonic acid gas, either by fermentation or by a chemical process, in order to make light bread. Pure, fresh air, so abundant and free to all, can be made to do it quite as effectually. Aërated bread, however, requires quite as much skill to make as yeast bread; but when once familiar with the details, a little practice will enable one to obtain most satisfactory results.

Quite as much depends on the conditions and material as in the making of yeast bread The flour *must* be good; if water is used as wetting, it should be pure and soft; if milk is used, it must be fresh and sweet; and both should be cold, ice cold, if possible. Neither poor flour, hard water, nor sour milk will make good unfermented bread. The oven, too, must be quite as hot as for yeast bread, and the fire so arranged as to keep a steady but not greatly increasing heat. If the oven is too hot or too cold, the bread will not be a success, however carefully made. If twenty cannot be counted with the hand held inside, the oven is too hot. A little experience will enable the cook to regulate the heat just right.

The lightness of unfermented bread depends upon the amount of air incorporated during the process of making; then when heat is applied, the air expands, and in expanding, raises the bread. Hence it is evident that the oven must be quick enough to form a slight crust before the air escapes, thus confining it within the loaf. For this reason, unfermented bread is best baked in the form of rolls or small biscuit, placed sufficiently far apart for the heat to at once have access to all sides of them, or baked in small iron cups previously heated. The following are a few of the many good ways of making unfermented bread:—

Breakfast Rolls.—Sift a pint and a half of good whole-wheat flour into a bowl, and mix with it a cup of rich milk which has been set on ice for half an hour or made very cool in some other way. Pour the milk into the flour very slowly, a few spoonfuls at a time, mixing it with the flour as fast as poured in, allowing no pools to form to make the dough sticky. A little salt may be added to the milk before mixing with the flour, if the bread cannot be relished with-

out it. Mix the dough stiff enough so that it will not adhere to the kneading-board, and knead it very thoroughly for at least a half hour, or until it becomes sufficiently elastic to resent a poke of the fist, and springs back to its original shape of itself. The dough should be mixed quite stiff; if too soft, it will be moist and clammy. The amount of flour necessary will vary with the quality, but three times the amount of liquid used will usually be quite sufficient for mixing and dusting the board. When thoroughly kneaded, divide into two pieces, and roll each over and over with the hands, until a long roll is formed of about one inch in diameter; cut this into two inch lengths, prick with a fork, and place at once in tins far enough apart so they will not touch each other when baking. Each roll should be as smooth and perfect as possible, and with no dry flour adhering. The rolls must not be allowed to stand after being molded, but as a tinful is formed, they should be placed at once in the oven, which should be all ready and of the proper temperature. About twenty-five minutes will be required to bake well. When done, spread on the table to cool, but do not pile one on top of another.

Very nice rolls are made in the same manner, using ice-cold water instead of milk. They are more crisp than milk rolls, and are preferred by some. Soft water only should be used in making them, as hard water is apt to make them tough.

Beaten Biscuit.—Into a quart of whole-wheat flour mix a large cup of thin sweet cream in the same manner as for breakfast rolls. The dough must be very stiff, and rendered soft and pliable by thorough kneading and pounding with a mallet for at least a half hour. When well worked, the dough will appear flaky and brittle, and the pulling of a piece off the dough quickly will cause a sharp, snapping sound. Mold into small biscuits, making an indenture in the center of each with the finger, prick them well with a fork, and place in tins with quite a space between each, and put at once into the oven. The oven should be of the same temperature as for rolls. If either the biscuit or rolls are "sad" inside when cold, they were not well baked, as they should be light and tender. Both the rolls and beaten biscuit may be made of graham flour, if preferred, instead of whole wheat.

Breakfast Puffs, or Gems.—To one and a half cups of cold milk, add one well-beaten egg, salt if desired, and two cups of whole-wheat or graham flour, or sufficient to make a batter thick enough not to settle flat when put in the irons. The lightness of the puffs depends upon the quantity of air incorporated into them, and in order to get in as large an amount as possible, the flour should be added very slowly, only a little at a time, and the mixture beaten very thoroughly and continuously, not by stirring round and round, but by dipping the spoon in and partially lifting it out very swiftly and quickly, making as many bubbles of air as possible. It should take from five to ten minutes constant beating thus before the last of the flour is added; then the mixture should be turned at once into hot gem-irons and baked in a quick oven. The beating must be continuous from the beginning in order not to allow any of the air to escape, and the flour should be measured, the egg well-beaten, the oven hot, and the gem-irons heating before commencing to put the mixture together. Unless the irons are hot, so much air will escape before they are heated enough to form a crust on the bottom and sides of the cakes that they will not be light, but the irons should not be hot enough to burn the batter.

Plainer gems may be made in the same manner, with water only, instead of the milk and egg, using one part water to about two of flour.

In making these puffs, the irons should not be smeared with grease; if necessary to oil them at all, they should only be wiped out with an oiled cloth very carefully. Irons well cared for, carefully washed and kept smooth, need no oiling whatever. We have used a set daily for the last three months without once oiling.

Corn Puffs.—One cup of cold mashed potatoes and one cup of milk, rubbed through a colander or seive to work out all lumps; add the yolk of a well-beaten egg, and then stir in slowly, beating well as for breakfast puffs, one cup of corn meal; add lastly the white of the egg beaten to a stiff froth, and bake at once in heated gem-irons. A little salt may be added to the batter if desired. Wheat flour may be substituted for potato if preferred, in which case it should be mixed with the cornmeal before adding to the mixture.

Cream Cake.—Excellent plain cake, lightened with air, can be made by using one cup of sweet cream, three-fourths of a cup of sugar, into which a little grated lemon-peel has been mixed, and the well-beaten yolk of one egg. Into this stir slowly, beating vigorously so as to get in as much air as possible, from one and a half to two cups of flour. The exact amount will vary with the grade of flour and the size of the egg used. Lastly, add the white of the egg, previously whipped to a stiff froth, just stirring it in well but not beating the mixture afterward. Bake at once in hot gem-cups. This cake can be varied by different flavoring, or by adding currants or raisins. It can be baked in layers if shallow sheet-iron pans are used and previously heated.

—Cranberries make an excellent sauce, but the skins are hard of digestion. An excellent way to prepare the berries is to stew them in the proportion of a quart of berries to the pint of water, simmering them gently until the skins have all burst and the above quantity is reduced to a pint. Put through a colander to remove the skins, and when nearly cold, add two-thirds of a cup of sugar.

—When using lemons, an excellent plan is to rub the rind with sugar, and then preserve the same in tight cans as flavoring for cakes and custards. It does quite as well as the extracts, and is sure of being *genuine*.

Literary Notices.

We have received a copy of a new monthly, entitled *The Dorcas Magazine*, which proposes to furnish its readers with accurate and intelligible directions for knitting, netting, crochet-work, and other womanly handicrafts. It is fully illustrated, and the directions are so explicit and thorough that they can be easily followed. The magazine is certainly unique in purpose, and we should judge from its first appearance it might be a most suitable help to those who have leisure to occupy in manufacturing fancy articles.

Subscription price, $1.00 per year. Published at 872 Broadway, New York, N. Y.

The Home Guardian for March comes to us laden with good and interesting things for both old and young. It is a monthly magazine of choice literature, containing a Mother's Department, Young Ladies' Corner, and Children's Fireside, all of which are conducted in a most unexceptionable manner. Among the contributors we note the names of Eleanor Kirk, E. Addie Heath, and other well-known writers.

Subscription price, $1.25 per year. Published at 6 Oak Place, Boston, Mass.

Vick's Floral Guide is here again, brighter and better than ever; the cover alone, with its delicate tinted background and its dish of gracefully arranged flowers, would entitle it to a permanent place in every home. The book contains three beautiful colored plates, is full of illustrations, printed on the best of paper, and is filled with just such information as is required by the gardener, the farmer, those growing plants, and every one needing seeds or plants. The price, only ten cents, can be deducted from the first order sent for goods. All parties any way interested in this subject should send at once to James Vick, Rochester, N. Y., for the *Floral Guide*.

For Mothers and Daughters, a Manual of Hygiene for Women and the Household. By Mrs. E. G. Cook, M. D. Price, $1.50. Fowler & Wells, Publishers, 753 Broadway, New York, N. Y.

This is a work especially for mothers, wives, and daughters, which treats of those all-important topics upon which so much of happiness and usefulness in life depend, viz., health and its preservation. The book opens with a chapter on the importance of physical culture, followed by others on the bones and muscles, the brain and nervous system, hygiene and ventilation, intemperance, the rights of children, questions of education, and many other important topics. The work is small and the subjects so numerous that the consideration of each is necessarily brief, yet so many practical hints are given, that the book is well worthy a place in every lady's library.

The Normal Teacher.—This is one of the many excellent educational journals published for the help of those who are engaged in teaching. It contains an Examination Department, Elocutionary Department, Queries and Answers, beside many others of especial value to both students and teachers. Terms of subscription, $1.00 per annum. Published at Danville, Ind.

"Our Best Words," published by J. L. Douthit, Shelbyville, Ill., comes to us each month laden with good words for all who are interested in the up-building of the best interests of humanity. The editor is an energetic, and earnest philanthropist, interested in all good reforms. The price of the journal is 50 cts. a year for a single copy, five or ten copies to one address, 40 cts. each.

Health in the Household, by S. W. Dodds, M. D. Published by Fowler and Wells, N. Y.

This is a recent work published in the interest of hygienic living. The first division of the book entitled, The Reason Why, is an exposition of the reasons why a vegetarian diet is the most wholesome, together with many other suggestions of value. A second portion of the work is devoted to recipes of a healthful character quite commendable; but the larger share of the work is devoted to what is entitled, The Compromise, and contains so many references to the use of soda and baking-powder that we cannot wholly commend it.

The "Herold der Wahrheit" and the "L'Ultimo Messaggio," are the names of the initial numbers of two new missionary sheets, published under the auspices of the S. D. A. Missionary Society of Europe, the headquarters of which is located at Bâsle, Switzerland. The mission is under the management of Eld. B. L. Whitney, formerly of New York. These journals are chiefly devoted to the dissemination of advanced views respecting the prophecies of the Old and New Testaments, one in the German and the other in the Italian language. Both journals have long been needed, and they will undoubtedly accomplish a vast amount of good. Many parts of Europe are as much in need of missionary labor as the darkest portions of heathendom. The people have so long been under the benighting influence of Catholicism, that almost the last spark of genuine Christianity seems to have been extinguished.

Publisher's Page.

☞ Our agents are sending in hundreds of names of new subscribers every month. The indication is that GOOD HEALTH was never so popular as an instructor in the healthful ways of living as at the present time.

One agent obtained seventeen subscribers in half a day. Those who desire to do so may canvass for some one of the premiums offered in the advertising pages, or a cash premium of 35 cents each, will be paid for new subscriptions received.

☞ The managers of the Sanitarium are getting up a "Patients' Gallery," in which they wish to include as large a number as possible of those who have visited the institution as patients during the last ten years. A great many photographs have already come to hand, and more are being received every day.

Duplicate photographs, one taken before and another after treatment, are especially desirable when they can be provided. The photographs are generally sent in cabinet size.

☞ The work on the large addition to the Sanitarium is going forward as rapidly as the weather will permit. The need of the additional room is appreciated more and more every day, as every nook and corner of the institution, even to some of its treatment rooms, is filled with patients. It is only with great difficulty that accommodations can be provided for new arrivals, and all who expect to visit the institution during the next three months, should send notice ahead as long a time as possible. The addition to the building, if ready for use, could be one-half occupied immediately. The managers have been obliged to turn away quite a number in consequence of the inability to accommodate them, but by special arrangements which have been made, they hope to be able to receive all who necessarily must come at the present time. At any rate, no one should renounce the intention of coming without first corresponding to ascertain whether satisfactory arrangements can be made for them.

☞ On the occasion of a recent trip to New York on business in relation to the new building for the Sanitarium, we made short calls at Dansville and Clifton Springs, the two largest health establishments in the East. Were glad to find both of these reputable institutions in a flourishing condition, and are under obligations to the managers for the cordial manner in which we were received. If there were half a dozen institutions of equal size in every State in the Union, there would be no want of patronage, if the people were educated up to an appreciation of the advantages to be derived from the systematic regimen enforced, and the superior treatment given in a thoroughly scientific sanitarium.

☞ We are pleased to learn that efforts are being made to put in active operation the health institution at St. Helena, California, known as the Rural Health Retreat. The excellent natural advantages possessed by this institution, supplemented by good facilities for the care and treatment of the sick, ought to make it the most successful resort for invalids on the Pacific coast.

☞ We are glad to hear good reports from our medical students, Mr. Place and Miss Belknap. They are spending the winter at Ann Arbor, where the facilities for medical study, especially for beginners, are in some respects superior to those of any other medical college in this country. Miss Sanderson is taking a course of lectures at the Woman's Medical College in New York City, which is undoubtedly the best institution for the medical education of women in the world. A course at this college is regarded as being the most thorough of any medical college in the country, and the opportunities for practical work in departments particularly useful to them, are superior to those of any other college.

☞ On our way to Wellsville, to visit a critical case to which we had received a summons by telegram just as we were leaving home, we had the fortune to be snow-bound for several hours on one of the numerous cross lines which connect the great lines of travel in that part of the State. After an all-night struggle through snow-banks, we succeeded in reaching our destination, however, and a few hours later were *en route* for Buffalo, whence we reached home via the grand old Michigan Central, on which we always ride with a sense of comfort and security experienced on no other road in the country. During our acquaintance with this road, for more than twenty-five years, scarcely an accident of any note has occurred, and the careful management of the road, together with the superior character of its employés, and its equipment and maintenance, places it beyond question one of the safest, as well as the most comfortable and expeditious, lines of travel in the United States.

☞ Since our last issue, our country has lost one of its most eloquent orators, and one of the few genuine philanthropists who have held prominent positions among our public men. Wendell Phillips was well known throughout the civilized world as a leader in the anti-slavery movement in this country, and his name has been prominently associated with other reformatory movements. It will perhaps be a matter of interest to our readers to know that Mr. Phillips was one of the very first supporters of the health reform movement inaugurated in this country some forty years ago. This fact we learned from Mr. Phillips himself on the occasion of a brief visit to the Sanitarium made by the venerable orator a few years ago. For many years Mr. Phillips was a strict vegetarian, and he informed us that he was still practically such, although he occasionally made use of flesh food in small quantities when away from home, rarely, however, taking any other form of flesh than fish. The post mortem examination showed the cause of death to be a disease of the heart which had existed for some years.

Erratum.—A slip of our stenographer's pen, or a slip of the writer's tongue, made us speak of the *Black* Sea, on page 50 of the last number, when *Baltic* Sea was meant; and instead of Great Belt, the text should read, The Sound.