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THE PHILOSOPHY OF GETTING WELL.

A LECTURE DELIVERED IN THE SANITARIUM PARLOR, AUG. 14, 1882.

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How do sick people get well? A man said to me the other day that a doctor had carried him through a siege of typhoid fever. Another said that he took such and such a remedy, and it cured him. Now the fact is that neither the doctor nor the remedy cured him of the disease. Doctors don't cure, and remedies don't cure; nature cures. All that the physician can do, and all that the remedy can do, is to aid in supplying good conditions for nature to work—to surround the patient with the conditions under which she can do her work with the greatest ease. When we pause for a moment to consider this delicate machine we call the body, it seems wonderful that any cure can take place. Suppose you take a very finely constructed watch, and dash it upon a rock. If you carry it to a watch-maker, he will tell you that he has a very difficult task to perform to put the watch in repair again. Perhaps the mainspring is broken, or some of the parts entirely destroyed, so that they have to be replaced. It will take a long time to do it, and yet it can be done. But a delicate chronometer is a very coarse machine, as clumsy as a stump-puller, when compared with the human body. The body is so delicate that the finest of the watch-maker's tools are too large and bungling to mend it with. One of its delicate nerve-fibres is only the twenty-thousandth of an inch in diameter. Where is the watch-maker who can make a nerve-fibre? And yet this fibre is continuous from the brain down to the toes. Is it not a wonder

that it does not snap in two any minute? Those delicate little cells in the liver that make the bile, are exceedingly minute, but yet they do all the work.

Is it any marvel that this machine, that so far excels all others in delicacy, sometimes gets out of repair? How can it get back into a healthy state again? If the liver is diseased, you cannot take it out and repair it, as you can the mainspring of a watch. The repairing is done by a different process, and this process is the effort of nature to put herself to rights. The whole curative work is performed by what is called the *vis medicatrix nature*,—the healing power of nature. This process is not so marked in the human body as in the bodies of the lower animals. If you take a jelly-fish, and cut it into two parts, each part will become a complete jelly-fish, each weighing half as much as the original one. If you cut each of these into two parts again, you will have four perfect jelly-fishes, each weighing one-fourth as much as the first; but after a time they will each grow to be as large as the original fish. Every one knows that if you cut off a lobster's leg, it will grow out again in a short time. In the lower forms of life this power of repair is very great, and in that respect they are far ahead of human beings. The higher you rise in the scale of life, the less this power seems to be. We find it, however, to some degree, in the human body, and it is by means of this reparative power that the system returns to its normal condition after having become diseased. This process of recovery may be compared to the swinging of a pendulum. If a pendulum be drawn away from the perpendicular, it swings back and forth until it recovers its equilibrium; and just so

nature in her efforts to repair comes to the normal point, goes over to the other extremity, and thus swings back and forth until equilibrium is restored. Turkish baths, massage, packs, electricity,—none of these remedial agencies cure. All they can do is to assist nature.

It is a very fortunate thing when a doctor recognizes this fact. When a doctor finds a patient suffering with a disease, and he imagines it his duty to drive that disease out, it is very unfortunate for the patient. Often the doctor succeeds in driving the disease out, but he drives the patient out at the same time. The conflict with disease is successful on the doctor's part; the disease is cured, the patient is killed. "Doctored to death" might be appropriately written as an epitaph on many of the tombstones of our cemeteries. Doctors have imagined that their remedies must cure the disease. It is a very easy thing to "cure" a pain. If a man is suffering with neuralgia or rheumatic pains, a hypodermic injection of morphia will cure the pain in pretty short order, but it will not cure the patient. The pain will be back again in a short time, unless something is done to remove the cause of the disease.

Now let us consider a little more in detail how a disease is cured. Suppose we take the case of a man who has a torpid liver, and inquire, not how the doctor is going to cure his liver-complaint, but how nature is going to cure the man; in short, how the patient is going to get well. He is not going to be cured by taking mineral baths or drinking "vinegar bitters." If he gets well at all, nature must cure him. To understand how this is possible, we must first know what is the condition of things when a person has a torpid liver. The trouble with the liver in such a case is that it is simply unable to do its work. Either from having too much to do, or from having the wrong kind of work to do, the liver has become clogged up, its tissues have lost their vitality, and it is impossible for it to do the work that properly belongs to it. If we could take it out and look at it under the microscope, we should find just as many cells as in a healthy organ, but in this case the cells have not vitality enough to do the duty assigned them. In a state of health each cell has the ability to do a certain amount of work,—to produce so many drops of bile in a given time, just as a horse has the ability to pull a certain number of

pounds, or a ship to carry a cargo of so many tons. But if the horse is overworked, and becomes weak and poor and emaciated, he cannot pull so large a load; and if the ship leaks, and its sails are torn, and its timbers rotting, it cannot carry so large a cargo. In the same way the hepatic cells, if their vitality is deficient, cannot make a sufficient amount of bile. Sometimes, too, the liver becomes clogged up. From overeating or from deficient exercise, a large amount of the rubbish of the system has been deposited in the liver, and the little hepatic cells are hampered in their work.

Now the first thing to be done toward effecting a cure is evidently to get rid of the clogging material. Perhaps we will tell this patient to drink plenty of water, ten to twelve glasses a day. Most of that water goes through the liver before it is mixed with the whole volume of the blood, and this rubbish is washed out, just as you would rinse a garment in water.

But after this is accomplished, there is something more to be done. The liver is still weak. The patient still has a tawny skin, a bad taste in the mouth, and all the usual symptoms of a torpid liver, although in many other respects he is appreciably better. The patient is not well yet, and the only way for him to get entirely well is to have a new liver. There must be a rebuilding process. Of course it is impossible to take the old liver out, and put in a new one, so how is this rebuilding process to be effected? Suppose a man wishes to build him a new house in the same place as the old one, and while he is occupying it. He cannot take the old house down, and put up a new one, because he must have somewhere to live while he is building. He must therefore take out one brick at a time, and put in a new one; take off one board at a time, and put on a new one; and so on, until the old house is thoroughly made over. A few years ago it was found that the wire strands of the old suspension bridge at Niagara Falls were beginning to show signs of wear, and it was deemed expedient by the architect to substitute new strands throughout a great portion of the bridge. It was of course impossible to stop the enormous traffic over this bridge to allow a new one to be put up in its place, and so the plan was hit upon of taking out one wire at a time, and putting another in its place, until the worn-out

parts of the structure should be entirely renewed. The same process must take place in the liver; one particle must be taken out and another put in, while at the same time its functions are going on just the same as ever. Thus it will turn out that in due course of time the patient will be supplied with an entirely new liver. And what is true of the liver, is true of the lungs, the brain, and the spinal cord, and, indeed, of every part of the body.

Now if we have a patient who has suffered from diseases of various sorts for five or ten years, who has a bad liver, and a weak stomach, and a disordered nervous system, such a person must be reconstructed throughout; he must be made new all over. This is a very slow process; but when it is through the person is a new being physically; he is born again. He is not quite so good as new; for when a person has for several years wandered from the highway of health away off into the by-ways of bad habits and disease-producing influences, it is impossible for him to get clear back. By the aids which rational medicine supplies, however, it is possible to help nature so that with her vital powers she can rebuild tissues nearly as good as the original. So, by giving patients the best possible chance, we can sometimes in cases which seem utterly hopeless, by slow degrees bring the patient back to a state of comfortable health.

How often I am asked the question, "How long is it going to take me to get well?" I say, Perhaps three months, perhaps six months, perhaps ten years. No matter how short the time is, the patient never finds it short enough. "Why does it take so long?" he says. Did you ever see a farmer who was surprised because it took so long for his wheat to mature? You would say that a farmer was no better than an idiot who expected a crop of oats to grow in a week, or to harvest his wheat a month after he had planted it. If you put a grain of wheat in the ground, after a time it begins to send a root downward, and shoots two delicate leaves upward to form a stalk, and after several months the grains of wheat grow and ripen, and it is ready for the harvest. This is a long and slow process. All this time the wheat is gathering particles from the soil and air, and combining them together into its own tissue. It is in a similar manner that the

work of growth goes on in the body. The body has even more to do; it has to bring in new material and carry off the rubbish at the same time. Everybody knows that it is a great deal more trouble to tear down an old house and make it over than it is to put up an entirely new one. Should it not take as long to make a new liver as to grow a bushel of wheat? Which is the most complicated process? If it takes several months to raise a crop of oats, and several months more to raise a crop of wheat, why should it not take even a longer time to make a new stomach? Suppose that a person has to be reconstructed all over again—new brain, new stomach, new liver, new nerves, new everything—ought it not to take a considerable time?

The trouble is that people have wrong ideas about getting well. Medicine has been kept a mystery, and perhaps medical men are to blame for it. If we go back three or four thousand years, we will find that the priests were the doctors. Medicine and theology were combined; and by this combination each did the other harm. Medicine was saddled with the superstitions of theology. The priests at that time held that there were two sorts of religious belief,—the esoteric and the exoteric. One was for themselves, and the other for the people. They said that the people could not comprehend the real truth, and so they taught the people one thing, and believed another themselves. For this reason you will find that the teachings of the ancients gave two lines of belief, one intended for the learned, the other for the masses.

It was just so in medicine. Old Doctor Hippocrates did not believe that his medicine cured anybody. He believed in the *vis medicatrix nature*; for he coined that term himself, or its equivalent, and applied it to the curative power in nature. But after a time the priests began to believe the exoteric doctrine. The idea became prevalent that there was some kind of medicine that would antidote every kind of disease. People began searching for a universal remedy, and ransacked the remotest corners of the earth to discover some elixir vitæ. At the present day, you can find in the newspapers numerous advertisements of medicines which are warranted to antidote certain forms of disease. Did you ever read over the list of the antidotes for rheumatism, and then think that if any of the much-vaunted

nostrums were really cures for rheumatism we should need but one? And yet in our medical books you can find a list of five hundred remedies for that one disease, and they are getting more numerous every day. The great reason why our patients are so impatient, and so unwilling to wait a proper length of time for their recovery, is that they look upon getting well as a process, not of reconstructing and rebuilding, but of antidoting. They are all the time looking about for something to *swallow* that will cure the disease in a hurry. They are sorry that we have no mineral spring of which they can drink, and be healed on the spot. They do not like to wait a proper length of time for this renovating process to be completed. Now you can set it down as a fundamental principle that antidotes for disease are humbugs. There is no antidote for disease. Disease is a vital action, and there is no antidote for vital action. There is nothing of the sort in the realm of science or medicine.

Perhaps some one will object to this argument, and say that a man who is troubled with rheumatism, for instance, can take alkalis, thus neutralizing the acidity of the blood, and by this means cure the disease. It is true that if a person's blood is full of acid, he can take alkalis that will combine with the uric acid, and form something that will be carried off. But the torpid liver, which is the cause of the difficulty, is still there, and in time the same trouble will be back again. The remedy has only antidoted the symptom; it has done nothing to remove the cause.

Some time ago I was speaking before the medical students of the university of this State on this same subject. After I had finished my remarks, and several of the professors present had indorsed the views set forth, one physician, who was particularly noted for his violent opposition to homeopathy, arose and said, "Gentlemen, I would rather have a homeopathic physician come and treat my children with remedies of the thirtieth dilution, than to have a regular physician who does not understand that medicines will kill."

The particular lesson that I wish to draw is, that we must wait patiently for a cure. Most of the people who come here want to be cured up in a few months or a few weeks. They have plans which they wish to carry out, and they must

get well, they think, at once, or by a certain time, in order to attend to their business. One man must go home at the end of two months to see about his crop of wheat which he expects will then be ready to harvest; another wants to return at a given time to see about a business speculation. Let the main speculation be in getting health. It is something of a speculation. How can I tell how much vitality a person has, or how long it is going to take to make him a new liver? How can I tell how often a person is going to take a "square meal" or a cigar on the sly? If I were building a house, how could I anticipate any stray tornadoes that might come along, and throw out all my calculations by blowing the frame-work down? Perhaps a patient is getting along nicely, when along comes a spell of bad weather, and the patient goes away down nearly to the starting-point. But each time that this happens, the patient recovers from the backset a little sooner. He does not go down quite so far, and he comes up a little easier; so in the end he gets well, though the necessary length of time is uncertain.

This process is exceedingly slow, but at the same time it is an exceedingly thorough one. In fact, everything that is worth anything costs something. If you do not pay very much, you cannot get very much for your money. Sometimes a man has to give all that he is worth for his life, and occasionally a little more. If you regain something so valuable as your health, you must expect to pay for it. Think of that when you feel that you cannot stay long enough to get well, or cannot afford to pay your weekly bills. What are these in comparison with health? When once you have gained it, you will not part with it for twice what it cost you.

DR. B. W. RICHARDSON.

Those who are acquainted with the valuable services which have been rendered to the cause of temperance by Dr. Benjamin Ward Richardson of England will be interested in the following sketch of this eminent scientist, which we quote from a letter to the *Medical Times* by Prof. J. Milner Fothergill:—

The figure of Dr. Benjamin Ward Richardson is unique in medicine. At present he is best known to the world as an ar-

dent teetotaler and a sanitarian,—sometimes a little whimsical, as when he propounded his Hygeia, or ideal city of health. But to conclude from this that Dr. Richardson is crotchety, is quite a mistake. He has always held his own views, and supported them ably. Born in the Midlands, he studied in Glasgow, and, from a remark in his *Aesclepiad*, was evidently assistant to a general practitioner in the country in his early days. But he soon came to London, and took a prominent position as a scientific physician. He gained his Fellowship of the Royal Society by his researches into the causes of the fluidity of the blood, which he held to be largely due to the ammonia contained therein; and he has always been the consistent advocate of ammonia freely administered in cases where a blood-clot is suspected to be forming in the cardiac chambers. For these researches he gained the Astley Cooper prize.

For years Dr. Richardson gave lectures on various subjects to classes of medical men who gathered to his house, and was the most advanced physiologist of his day, before the regular trained physiologists like Burdon Sanderson or Michael Foster had sprung up. His name is indissolubly connected with the ether spray for producing local anaesthesia, as one contribution to practical medicine. Then he invented a painless knife in the form of a wheel-blade revolving so swiftly as to cut without inflicting pain, by means of which he sliced off pieces of the ears of rabbits while they continued nibbling leaves, showing how little they suffered from the amputation. But this came to no practical use. Then his researches in chloral hydrate did much to clear up the action of this agent upon the organism. His observations on alcohol, amyl nitrite, and allied bodies, proved how far these agents dilated the arterioles, and led Dr. Lauder Brunton to resort to nitrite of amyl in a case of angina pectoris, with the result that amyl nitrite is now extensively used to relieve conditions depending on arteriole spasm; and its use in practical medicine has brought an allied body, nitro-glycerine, into notice, which is proving itself to be a most useful medicinal agent for the purpose of filling the arterial system, or relieving arteriole spasm.

Then, too, Dr. Richardson has experimented largely on anaesthetics, and advocated the use of the bichloride of methylene instead of chloroform, as being safer.

His acute intellect, too, made observations in clinical medicine of the highest practical importance. To him we owe more than to any one else our present knowledge of the irregularity and intermittency of the heart as neurosial affections utterly dissociated from organic lesions, with which, before his day, these phenomena were too invariably linked. He collected an array of cases which proved beyond all reasonable doubt that frequently such disturbance of the cardiac rhythm was nothing more than a nervous matter, devoid of significance, by which he did much to relieve humanity from that demoralizing dread,—a haunting suspicion of some occult disease of the heart, which is much worse than a knowledge that some actual disease does exist. Hundreds of persons who are relieved from their fears by the physician's positive statement that there is no organic disease, and that the halt or the disturbance in the rhythm of their heart is purely connected with the nervous mechanism, know no more than perhaps the medical man himself that the comforting assurance which lays their fears and dreads at rest is due to a great extent to Dr. Richardson, whose enthusiasm as to total abstinence they may have been deriding as the dream of an enthusiast. Then his essay on uræmic coma was one of the path-breaking contributions to practical medicine.

Dr. Richardson was for some years physician to the Royal Hospital for Diseases of the Chest. While thus engaged in scientific research and practical medicine, Dr. Richardson was ever a literary man. His writings are clear and lucid, while his language is well chosen and elegant. Since Sir Thomas Watson, no one in medicine has had the command of a style so attractive and so charming as Dr. Richardson, not even Sir James Paget himself. At present he is engaged on a life of Bichat. With him literature is a hobby, just as Seymour Haden and Sir Henry Thompson paint in their spare moments. There long existed an impression that if a medical man knew anything out of his profession, he could know little of it, or at least have little acquaintance with the later practically,—an impression most unjust to many. Because a man is without other culture, therefore his intellect is completely devoted to his profession, was a view which it was convenient for a good many medical men to do their best to keep up and disseminate. But the

tendency is setting the other way. If a medical man manifests good sense and acumen in other matters of which the public can judge, they are now inclined to give him credit for like qualities in his profession,—an act of justice which the public is readier to render than the medical man's professional brethren, it is to be feared.

Beyond his associations with literature, Dr. Richardson is an enthusiastic sanitarian, ready to help all good work to improve the health of the people. As such, he has been known to the public for years. Some time ago the genial doctor gave up alcohol and tobacco, and now is as prominent a champion for total abstinence as Sir Wilfred Lawson himself. When Sir Walter Trevelyan died, he left his cellar of wine to the doctor. The deceased baronet, though a total abstainer, had too much respect for the wine to start it down the gutter, as did one prominent teetotaler his cellar on his conversion: so he bricked it up. The doctor probably would have been glad if the wine had gone to the pigs, for his legacy was a bother to him. He had more good taste than to waste the wine; yet what to do with the deleterious beverage he did not know. So the wine remains, and the press has given over chaffing the doctor on the matter. That portion of society which is not disposed to abandon alcohol has decided that Dr. Richardson is an enthusiast; and though his decision—or perhaps rather the absence of it—about this wine-treasure should have saved him from the charge, still it is pleaded. Be this as it may, the world is always ready to hear what the doctor has to say; and recently Finsbury has asked him to be its representative at St. Stephen's. It is to be sincerely hoped that he may be returned, for it is very desirable that our profession be represented in the House of Commons. Whether they will always be in agreement with him or not, the Commons will listen with interest and respect to the winning eloquence of the teetotal doctor. Dr. Richardson is a capital speaker, who carries his auditors away with him. His eloquent dark eye, his grand brow, his solid figure, tell of a man of no common parts, while his familiarity with public speaking fits him for the House. As a talker, he is, in my opinion, unequalled, when with a group around him he stands the only speaker, all too willing to listen to interrupt him.

SUGAR.

THE following interesting article about cane sugar and glucose first appeared in the *Boston Journal of Chemistry*:—

It cannot be a mere matter of chance that substances used as foods by men and animals are some of them sweet and others acid; or that some are sweetened with sucrose (cane sugar), others with glucose (grape sugar), and still others with levulose (fruit sugar). There is a wonderful adaptation of means to ends in nature. The sweet sensation is generally agreeable, as has been before stated, but it must be modified and adjusted, else it would become repulsive. If our fruits were all sweetened with pure cane sugar in differing proportions, they would lack a certain zest due to a peculiar sweetness which they now possess; or if our grapes did not form an exception to other fruits in the method of sweetening, they would not be the delicious fruit so universally esteemed. Apples, pears, peaches, and most other fruits, are sweetened with levulose, or what may be regarded as a mixture of sucrose and glucose; and differing varieties hold unlike proportions, giving, in conjunction with malic acid and certain essences, the nice shades of flavor observed. The manufacture of sugar is not set up in fruits until the period of maturity is nearly or quite reached, and then the process is usually a gradual one.

The grape vine and fruit do not possess the power of grouping the atoms of hydrogen, carbon, and oxygen so as to form molecules of sucrose; the result of their work is confined to glucose. Hence a grape is never excessively sweet, or it does not reach a degree of sweetness beyond what glucose can furnish. If a grape were a solid mass of sugar, it would not be so very sweet, as the sugar is incapable of conveying to the taste any intense sensation. Every one who has tasted old or well dried raisins has observed the hard lumps of sugar of considerable size, which frequently form under the skin covering. These are lumps of glucose which result from the evaporation of the moisture in which it was held in solution in the grape. These lumps are deficient in sweetness, as has been observed from the earliest times. If this substance were supplied in large quantities from grapes or raisins, it would sell at a low price in the market. If a grocer sold it for pure sugar (cane sugar), it

would probably come back to him again, and he would rightfully be charged with fraud. No shrewd dealer or manufacturer would sell it by itself as sugar, but those dishonest in the trade would mix it with cane sugar, and thus dispose of it with less risk of exciting suspicion. This is now a form of fraud of enormous magnitude, as will be presently shown.

During the wars of Napoleon I., early in the present century, he established the famous Continental blockade, by which all products of England and her colonies were excluded from the markets. This, of course, made sugar scarce and dear in France, and stimulated search for products which might be substituted. The grape crop of France was enormous, and as commerce was destroyed it was useless to make wine; so attention was turned to extracting the sweet principle of grapes. Sirups and sugar were made from grape juice in large quantities, and Napoleon ordered it to be used in the palace as an encouragement to its production. He issued several decrees in regard to its manufacture, and the celebrated chemists of the time, Proust, Barthollet, Parmentier, and others, were kept busy striving to perfect the products. Montalivet, the great minister of the interior in Napoleon's cabinet, in one of his reports, states that it has been ascertained that the grape-sugar equivalent of cane is a little over two and a half to one. This is not far from correct.

It was as early as 1747 that Magraff made his experiments showing that beets contained sugar; but it was not until Achard, the son of a French refugee in Prussia, took up the subject, and published the astonishing results of his researches, that it excited public attention. The difference between the two forms of sugar—that from grapes and that from beets—was easily seen, and Napoleon's attention was called to it by his corps of illustrious chemists. He immediately gave himself to the work of creating and perfecting this new industry, and in 1812 he had the satisfaction of learning from the reports of his minister of the interior that 334 factories in the empire were producing annually 7,700,000 pounds of beautiful cane sugar from beets. This seems almost like the work of magic, and illustrates the greatness of the man whose power was felt in every part of the civilized world.

The early attempts to extract sugar

from beets in Napoleon's time were made subjects for fun and ridicule. The Emperor himself did not escape the lampoons of the wits of the age. A caricature was exhibited in Paris, in which the Emperor and the baby King of Rome were the prominent characters. The Emperor was represented as sitting in the nursery with a cup of coffee before him, into which he was squeezing a beet root. Near him was seated the King of Rome, voraciously sucking a beet root, while the nurse, standing near and steadfastly observing, is made to say to the youthful monarch, "*Suck, dear, suck; your father says it is sugar.*"

In manufacturing glucose from corn, the process is, first, to separate the starch from the other constituents of the grain, by simple mechanical means; and then, secondly, to act upon the starch with dilute sulphuric acid (oil of vitriol). When thick gelatinous starch is boiled for a couple of hours with this acid, a curious transformation takes place; the milky paste first changes to a fluid as limpid as water, and as the change advances this acquires a sweet taste, which is masked by the presence of the acid. If we now saturate the solution with some earthy carbonate, marble dust for instance (carbonate of lime), the acid is removed, and a sweet solution remains, which, after purification, may be evaporated to a sirupy liquid, or by still further manipulation, be converted into a white solid, which is grape sugar. This is the whole process for making "sugar out of corn," and it is simple enough. In this chemical transformation, nothing is absorbed from the air, and no other substances but dextrine and grape sugar are generated, and the weight of the sugar exceeds that of the starch employed. What is still more wonderful, the acid used undergoes neither change nor diminution; it is all withdrawn in its original amount after the boiling is completed. If it could be withdrawn in its clear, uncombined state, one carboy of oil of vitriol would serve to change all the corn grown in the United States into grape sugar. Theoretically, one pound of corn ought to make a pound of solid glucose, but in practice it does not quite do this. The cost of solid glucose to large manufacturers cannot exceed three cents a pound, and it may fall considerably below this.

Nothing can be more paradoxical to

the popular reader than the statement that sugar is produced by the use of one of the most powerful mineral acids known to chemists. To explain clearly and fully the chemistry of the reactions involved in the process would require more space than we have at command; and also, to understand the nature of the changes, more scientific knowledge would be required than is possessed by ordinary readers.

Glucose is a cheap, imperfect substitute for the genuine sugar of commerce. It is not a poison when well made; still, it does produce and aggravate dyspeptic symptoms, and by its proneness to set up fermentative processes its use causes flatulency and painful affections of the bowels.

What becomes of the millions of pounds of glucose manufactured in the Western States every month? It is used mostly as an *adulterant* in the manufacture of table sirups, and in adulterating the dark, moist sugars used largely by the poor. Its next largest use is in the manufacture of candies. All soft candies, waxes, taffies, caramels, chocolates, etc., are made of glucose. Children are therefore large consumers of this substance; the honey bees, also, are fond of it, and will carry it away by the ton, if placed within their reach. The honey made from it is no better than the pure glucose, as it is stowed away in the comb without change. Human ingenuity, it is stated, has reached the point of making honey and storing it *in the comb* without the mediation of the bee; therefore we can now dispense with its services. By appropriate machinery, a nice-looking comb is made out of paraffine, the cells being filled with glucose sirup, and this factitious honey is warranted true white-clover honey from Vermont.

The beautiful clear white sirups found on our breakfast tables, and used as an agreeable adjunct to our waffles and buckwheats, are largely composed of glucose. A mixture of true "sugar-house" sirup with glucose sirup, in proportions of five or ten per cent of the former to ninety or ninety-five per cent of the latter, constitutes the high-priced "maple-drip" of the grocers. A Western chemist reports the results of recent analyses, in which adulterations amounting to from five to fifteen per cent of glucose were found in various popular brands of sugars.

In this brief consideration of the nature and uses of a comparatively new article

of manufacture, the astonishing fact is disclosed that this year more than twelve million bushels of corn have been manipulated to produce an article employed almost exclusively as an *adulterant* to one of the most common and important constituents of food. It is a reprehensible form of fraud, and should be arrested by laws similar to those which govern the sale of the "oleomargarine" compounds. Every package of this sugar should be stamped *glucose*, and sold as such; and every mixture made with it should be accompanied by a statement, stamped upon the vessels which hold it, giving the exact percentage of glucose contained in the adulterated sugar or sirup. A law similar to that which is found on our statute books regulating the sale of fertilizing compounds would be effective, if energetically enforced. The loss to purchasers in the glucose sirups is enormous, as the quantity required to sweeten substances is at least twice as great as when cane sugar is employed, and the use of this quantity of the agent renders it deleterious to health. The attractive appearance of the sirups, which are white and clear, gives them a wide sale at high prices, and all consumers of sweets in the country are victims to a form of fraud which deserves the prompt attention of our law-makers.

CIVIL RIGHTS VS. TOBACCO.

THE following excellent article we quote from the *Christian at Work*:—

Would that the regulations as to the use of tobacco were far more numerous and stringent,—that our railroad directors might label certain cars, *For the Unclean*, and then prohibit smokers or chewers from entering any other!

As it is, the irrepresible smoker follows you wherever you go. You seat yourself in a car, and in utter disregard of the printed ordinance, "*Smoking Forbidden*," in some subtle, indescribable fashion, the dreaded odor assails you in front and rear. You pay an extra dollar, and retreat to a Pullman. Vain effort! From the conductor's room, or regions unknown, comes the same sickening vapor.

"I was glad," said Thoreau, when at Cape Cod, "to have got out of the towns, where I am wont to feel unspeakably mean and disgraced; to have left behind me for a season the bars of Massachusetts, where the full-grown are not weaned from

the savage and filthy habit—still smoking. My spirits rose in proportion to the outward dreariness. The towns need to be ventilated. The gods would be pleased to see some pure flames from their altars. They are not to be appeased with cigar smoke."

The outlook has not improved since Thoreau's day. On a Sunday summer's evening, you wander forth to an out-door meeting on the hillside. Once, twice, and yet again, you change your seat to escape the vicinity of some smoker who is polluting the pure air around you.

You go on board a steamer, anticipating a pleasant sail on lake or river. When everything is arranged, you take a seat on deck. Presently you are haunted by that unmistakable odor, and turning, you find a gentleman near by puffing away without the remotest consciousness that he is disturbing any one. You move your seat to get out of his range, but that only brings you in the vicinity of another offender. Verily there is no escape. The smokers persist in planting themselves before you, or behind you, or beside you, and no one says them nay.

You betake yourself to some rural retreat. But no matter how secluded it may be, there will be some way of getting through it, whether by car, coach, or cart. And whatever the vehicle, somebody will be in it, and that somebody will be sure to smoke or chew, or both.

Even the broad ocean offers no asylum. In spite of printed enactments, the lawless wind bears the dreadful odors "abaft the helm," directly into your face. Can the moral atmosphere engendered by this habit be any more securely locked in? A traveler says: "One of the foulest places I ever saw for blackguard, profanity, and indecent language, was the smoking-room of an ocean steamer." And this testimony is abundantly confirmed.

Is there, then, I repeat, absolutely no refuge,—no quarantine by which these noxious, ever-pursuing, ever-persecuting spirits of the air can be effectually shut out from the innocent?

"Chewers," one writes, "eject their saliva upon the sidewalk; in the store; in spittoons, which become incorporate stench; in dark corners of railroad cars, to stain the white skirts of unsuspecting women; in lecture-rooms and churches; upon fences; and into stoves that hiss with anger at the insult. And the quids after they are ejected——!"

"Some smoke till their bedrooms and shops can scarcely be breathed in, and until their breath is as rank as the breath of a foul beast, and their clothes have the odor of the sewer."

And this loathsome *without* is only a fit exponent of the equally loathsome *within*. Says Dr. Alecott: "If the interior of the tobacco-user could be fairly exposed to the public gaze, I am not sure but it would do more to deter the rising generation from falling into this foul habit than all our lectures, and essays, and homilies."

If no one suffered except the willing victim, the case would be different. But the dreadful penalty, though well-nigh as universal as that following the sin of Adam, falls heaviest on the nearest and dearest,—on those who can never escape the sickening atmosphere.

Daniel Webster said, "If gentlemen *must* smoke," or *chew* he might well have added, "let them take the horse-shed." This seems to have been the prevailing sentiment in that staunch temperance town, Oberlin, Ohio. Years ago, a doctor of divinity who was a smoker, while passing a few days there, found himself out of cigars. After a long hunt in search of them, he was directed to a hostler, who might, perhaps, supply him. He sought him out and obtained a cigar; but when told that he must go behind the stable to smoke, he had such a sense of shame that from that time he forsook the indulgence.

Not so apt disciples were two New England ministers, who, being at the same place at a convention some years later, walked down the railway track for their daily smoke.

It is not uncommon to find among temperance lecturers ardent devotees of the weed. A total abstainer, yet a tobacco sot! We have suffered quite enough from these demi-semi-reformers. Our parlors and our chambers, our halls and our sanctuaries, are often desecrated by their performances. "Why don't you use the church for your temperance addresses, and devote to the cause the money you spend in hiring a hall?" "Oh! it would never do, the church is so fearfully defiled by these lecturers."

When such men come out of a smoke-room, pallid, trembling, and bearing the nauseous signs of the indulgence, instead of mounting the platform to exhort others to temperance, would it not be more fitting that they should take the back

seat, and listen in silence and humiliation? "Thou that sayest another shall not 'drink,' dost thou smoke or chew?"

"Tobacco demoralizes," says Dr. Parker. "It makes a man careless about his hair; he lets his nails go unclean; his clothes are soiled—in a word, he is dirty."

A writer in *Blackwood* asserts that "tobacco is the favorite filth of every savage life within the circumference of the globe; that it fills the atmosphere of the Continent with a perpetual stench; . . . that it is, in its own nature, the filthiest, most foolish, dullest, and most disgusting practice on the face of the earth."

Why cannot the civil-trespass law be brought to bear on this matter? Our statutes forbid that any man shall, from greed of gain, or to gratify an unnatural appetite, cause a nuisance in any public place where all have equal rights and a common interest. Is not the wide-spread use of tobacco a nuisance so offensive, so unwholesome, that if suddenly sprung upon the community, there would be a spontaneous uprising, an indignant mass-meeting, which would demand its immediate expulsion? No pipe or cigar ought to be smoked within a thousand yards of a church or any place of public gathering. Cannot the early New England statute be revived, at least so far as to impose a fine on any person using this weed publicly?

In 1818 the following Acts concerning smoking were passed in the metropolis of New England, and recorded among the city ordinances:—

"Every person who shall smoke, or have in his or her possession any lighted pipe or cigar, in any street, lane, or passageway, or on any wharf, in said city, shall forfeit and pay, for each and every offense, the sum of two dollars.

"And, further, if any person shall have in his or her possession, in any ropewalk, or barn, or stable, any fire, lighted pipe, or cigar, the person so offending shall forfeit and pay, for each offense, a sum not exceeding one hundred dollars nor less than twenty dollars."

The first of these acts was never enforced, and, after having remained on the statute book for more than sixty years a dead letter, was repealed in 1880.

The second, which is a law absolutely necessary as a precaution of safety, is still in force in Boston, and ought to be

in every city, town, and hamlet throughout the land. But it simply contemplates protection against danger. When shall we take higher ground?

CONVENIENT QUARANTINING.

WHEN a patient is suffering with a contagious disease in a house occupied by other persons liable to contract the disease, complete isolation is a matter of very great importance. Some of the following suggestions, contributed by Dr. McLean to the *Medical Record*, are quite novel:—

For ten years past I have been experimenting with a simple method of quarantining cases of small-pox, scarlatina, diphtheria, measles, etc.; and as I have been able to get positively valuable results, I take the liberty of presenting the method, simple as it is, to the profession, for their trial. My plan consists simply in *filtering the atmosphere* which surrounds the patient through a sheet of muslin which has been carbolized or otherwise disinfected, which is closely tacked over the door-frames of the room in which the patient lies. I close all unnecessary doorways by tacking the sheet all about the frame, bottom, top, and sides. The one door which is needed for ingress and egress I protect by tacking a similar sheet across the top, down the whole side of the hinge side of the doorway, and down the lock side as far as within five feet of the floor. This filtering-sheet is made long enough to hang closely to the frame, and fall in folds upon the floor, where it is not tacked. By keeping such a sheet sprinkled with a solution of carbolic acid—I generally use Squibb's two per cent solution—or other reliable disinfectant fluid, all, or nearly all, of the air of the infected room is *filtered* through a tissue which seems to *destroy the infection in its passage*. Moreover, the filter acts by moral effect; for it happens that intruders into the sick-room are very rare, and thus a great danger and prolific source of the disease is practically removed. Indeed, the whole household are reminded that there is a something within to be avoided. Of course, the nurse must use care not to allow anything to be removed from the room in a condition to carry the poison without.

After a fair trial of many years, assisted also by several of my brother practition-

ers (among whom I may mention Drs. I. B. Read, F. A. Smith, and J. A. Walther), I am able to state that in a list of about fifty cases carefully observed, I have succeeded, in all but two, in confining the infection, or contagion, to the patient first attacked. In the two instances of failure I had abundant evidence that the quarantine was grossly neglected.

Dr. F. A. Smith had the kindness to report to me a most interesting test of this method which occurred in his own hands last winter. In an institution which the doctor was attending professionally, a case of well-marked scarlatina broke out in the midst of scores of young children who slept in the ward. The case was removed to the nurse's room, and there quarantined by means of the filter, according to the method described above. The consequence was that not another case occurred in the institution. On other occasions, when the usual modes of isolation were alone adopted, the same institution had been swept with epidemic force. Dr. Smith expressed to me his belief, founded on experience, that, without the method mentioned in the case reported, he would have had scores of cases on his hands in a fortnight.

The simplest way to sprinkle the sheet is to pour the disinfectant solution in a flat dish, and dip a hair-brush in it, and with this throw the liquid over the filter. There are three positive points gained by using this method: 1. The air of the sick-room is not mixed with the air in the rest of the house; 2. Visitors are much less likely to visit the sick-room; 3. The air of the sick-room is kept more easily at an even temperature.

In all of my cases I have found it unnecessary to close the ordinary door, the filtering sheet taking its place.

RIGHTS OF SANITATION.

THE following article from the pen of Dr. Wright, which we clip from the *Sanitarian*, will undoubtedly sound a little savage to some of our readers, but it must be admitted that there is much truth if little poetry in the doctor's trenchant sentences:—

The time has arrived in this country for the stricter enforcement of a considerable body of miscellaneous sanitary law, and for the enactment and execution of

new laws of the kind. This species of law, like all other law, has to struggle against ignorance, selfishness, perverseness, and wickedness. Underlying it will be found the well-defined principles of criminal law. If a man kills his neighbor, the criminal law inflicts the same penalty on him, whether he does the killing with poison, with a knife, with a club, or with a gun; but if he does the killing by means of beer poisoned with "mulum;" by means of a privy in the basement of a building let to a tenant; by means of milk containing germs of scarlet fever; by means of pork containing trichinæ; by means of tea containing a "bloom" of black lead; by means of wall-paper colored with arsenical pigments; by means of wine "doctored" to taste by an admixture of "plasterage;" by means of a child sent to school bearing the contagion of deadly disease; by means of ships so crowded between decks with emigrants that each person has less than thirty cubic feet of air-space; by means of a theater so constructed that even in case of alarm of fire a large percentage of the inmates are sure to be trampled to death; by means of a hospital built in defiance of every hygienic law, as a monument to civic ignorance and pride; by means of a deadly drug administered by pretentious quackery,—then the enactors of statutes consider their constituencies, and the elective magistrates look over their shoulders and out of the windows to observe the direction of the popular breeze. While it is very evident that public instruction must keep pace with the law, it is also evident that malefactors who snap their fingers at preaching and teaching, can be reached only by the infliction of dreaded penalties. The world can never be reformed by moral suasion alone.

COMMUNICABLE DISEASES.

A GREAT part of the effective sanitation of the present day consists in the avoidance of the production of filth; in its proper disposition; and in that method of isolating disease which shall prevent its spread. Excretions are not filth, in the sanitary sense, if they are properly disposed of, and their early and proper removal prevents disease. But there is a class of diseases of which the cause seems to be a specific entity, and therefore we have to prevent their spread. The words *contagion* and *infection* are used so promiscu-

ously that we get rid of artificial distinctions by speaking of the whole class as communicable diseases. While we cannot always draw precise lines to show just how this or that disease is communicable, it is one of the advances of modern sanitation that we are able to speak of various groups of communicable diseases.

Thus, one class—like hydrophobia, glanders, and vaccination—is communicable only by direct contact, and the actual introduction of the specific virus. The person must be inoculated. Another class is caused by a poison produced in the person. So, thus far, we know of no origin of small-pox or scarlet fever exterior to the individual. Another class of diseases, of which cholera and typhoid fever are illustrations, are said not to be communicable from the individual, but from the secretions. The voided matter at first seems innocuous; but after a few hours, if kept, it undergoes changes which communicate the disease. With another class it is also claimed that things, such as apparel, convey the disease when the person will not; and the term "fomites" is used to describe this class. Thus, as to yellow fever, it is claimed that the person is not hazardous, but the clothing is. If this be so, it is probably owing to the excretions from the skin.

Then there comes a class of diseases which seem chiefly conveyed by sputa. It is believed that whooping-cough is oftener conveyed by the sputa than by the breath. Parkes suggests that consumption may arise from the dried sputa floating in the dust of an apartment. The common ivy of our fences will poison some persons, even without the touch. Diphtheria is one of the diseases still under question, some believing that it is only communicable by means of dried or minute portions of the membrane. Small-pox and scarlet fever are believed to be spread very much by the scales which fall off, and so an oiling of the skin is resorted to, for the double purpose of softening these scales, and of preventing floating material in the air.

The largest class of communicable diseases is that which is derived from breathing the breath of a person suffering from the disease, or the air of a room contaminated thereby. Measles, scarlet fever, mumps, and some other diseases, are taken in this way. Some pretty careful experiments have been made to determine the distance at which these diseases may

be taken, or what degree of contamination of air is necessary. Two or three significant facts appear. The person is a center of contagion at different distances. Measles is very readily communicable by the person. Small-pox, although so contagious, is not as much so from the person as scarlet fever (Cameron). Typhus is a poison less persistent. Then it is a fortunate fact that these poisons have but an ephemeral existence, if freely exposed to air. Therefore, the question of communicability depends much upon the airing of the room. The spread of disease is very largely caused by want of cleanliness, by defective airing, and by the wearing of garments that have not been thoroughly washed or exposed to air.

Great success has attended the prevention of the spread of disease by isolation. If a patient in a room is properly taken care of, and the attendant understands the best methods, there is not likely to be extension to other members of the household. It is because the isolation is so often imperfect, or because the attendant too quickly mingles with other persons, that we so often have extension of a disease.

The question very frequently arises as to preventing the spread of disease in schools. We do not sympathize with the tendency there is to disband a school at every outbreak of disease. It is difficult to make a general rule as to when a person, after a communicable disease, shall return to school, or as to how the attendance on the part of other members of the family should be regulated. In a proper system, the person would need a certificate, or permit of return, and the question of the attendance of others from the same house would depend on the certificate of an inspector. It would be safer in one week from one house than in one month from another. Wherever there is an efficient inspector or board of health, the matter should be under their direction, or else the board of school trustees should have a member who would inform himself as to the proper course, and decide in each case. While it is very true that some are more susceptible to the usual communicable diseases than others, yet most children of the school age contract several of them, if fully exposed. It is equally true that they can be protected from them, and, if so protected, are not likely to have them in adult life. The recent experience of South Bethlehem

shows how dangerous it is to allow a vagrant pestilence to gain headway. While we may not at present wholly banish all of these zymotic diseases, it is certain that, by organized systems, which apply the knowledge we have, we are able to prevent them from becoming epidemic.—*Independent*.

ODE TO RUM.

[The poem thus entitled, which appears below, was written by the late WILLIAM C. BROWN of Chelsea, and first saw type in the *Bingham Gazette* in 1828. It has since been very widely copied, and has even been honored with a translation into German. The reader will find it a unique production, and quite exhaustive on the subject.]

"O thou invincible spirit of WINE! if thou hast no name to be known by, let us call thee—devil."

LET thy devotee extol thee,
And thy wondrous virtues sum;
But the worst of names I'll call thee,
O thou hydra-monster—RUM.

Pimple-maker, visage-bloater,
Health-corrupter, idler's mate;
Mischief-breeder, vice-promoter,
Credit-spoiler, devil's bait.

Almshouse-builder, pauper-maker,
Trust-betrayer, sorrow's source;
Pocket-emptier, Sabbath-breaker,
Conscience-stifer, guilt's resource.

Nerve-enfeeblor, system-shatterer,
Thirst-increaser, vagrant thief;
Cough-producer, treacherous flatterer,
Mud-bedauber, mock-relief.

Business-hinderer, spleen-instiller,
Woe-begetter, friendship's bane;
Anger-heater, Bridewell-filler,
Debt-involver, toper's chain.

Memory-drowner, honor-wrecker,
Judgment-warper, blue-faced quack;
Feud-beginner, rags-bedecker,
Strife-enkindler, fortune's wreck.

Summer's cooler, winter's warmer,
Blood polluter, specious snare;
Mob-collector, man-transformer,
Bond-undoer, gambler's fare.

Speech-bewrangler, headlong-bringer,
Vitals-burner, deadly fire;
Riot-mover, firebrand flinger,
Discord-kindler, misery's sire.

Sinews-robber, worth-depriver,
Strength-subduer, hideous foe;
Reason-thwarter, fraud-contriver,
Money-waster, nation's woe.

Vile seducer, joy-dispeller,
Peace-disturber, blackguard guest;
Sloth-implanter, liver-sweller,
Brain-distracter, hateful pest.

Utterance-boggler, stench-emitter,
Strong man-sprawler, fatal drop;
Tumult-raiser, venom-spitter,
Wrath-inspirer, coward's prop.

Pain-inflicter, eyes-inflamer,
Heart-corrupter, folly's nurse;
Secret-babbler, body-malmer,
Thrift-defeater, loathsome curse.

Wit-destroyer, joy-impairer,
Scandal-dealer, foul-mouthed scourge;
Senses-blunter, youth-ensnarer,
Crime-inventor, ruin's verge.

Virtue-blastor, base deceiver,
Spite-displayer, sot's delight;
Noise-exciter, stomach-heaver,
Falsehood-spreader, scorpion's bite.

Quarrel-plotter, rage-discharger,
Giant-conqueror, wasteful sway;
Chin-carbuncle, tongue-enlarger,
Malice-venter, death's broad way.

Tempest-scatterer, window-smasher,
Death-forerunner, hell's dire brink;
Ravenous murderer, windpipe-slasher,
Drunkard's lodging, meat, and drink!

*Othello, Act 2. Scene 2.

COST OF TOBACCO-USING.

AN exchange has taken the trouble to figure up the expense of tobacco-using, as follows:—

The money spent every year for tobacco, opium, and hashish, is said to be more than one billion dollars (\$1,000,000,000). This sum is so large that boys and girls, and even older people, are not able to comprehend it. But let us see how many pairs of boots, suits of clothes, and barrels of flour, it would buy; then, perhaps, we can better understand what a vast amount of money it is.

At \$3 a pair, it would buy 333,333,333 pairs of boots, or a pair for every man and boy in North and South America, Europe, and Africa. It would buy a pair of shoes for every lady and little girl in the world. And at \$10 a suit it would pay for one hundred million warm suits of clothes.

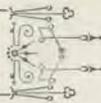
At \$5 a barrel, it would buy two hundred million (200,000,000) barrels of flour. If you should set these just as close together as you could, they would cover twenty square miles. If put on wagons, driven tolerably close together, they would reach from New York City to San Francisco twenty-six times, or around the whole world nearly three and one-half times.

If the flour were made into bread, it would give every man, woman, boy, and girl in the world twenty-eight loaves apiece.

Boys, resolve never to have a part in wasting so much money.



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.

DON'T TAKE IT TO HEART.

THERE'S many a trouble
Would break like a bubble,
And into the waters of Lethe depart,
Did we not rehearse it,
And tenderly nurse it,
And give it a permanent place in the heart.

There's many a sorrow
Would vanish to-morrow,
Were we not unwilling to furnish the wings ;
So sadly intruding
And quietly brooding,
It hatches out all sorts of horrible things.

How welcome the seeming
Of looks that are beaming,
Whether one's wealthy or whether one's poor ;
Eyes bright as a berry,
Cheeks red as a cherry,
The groan and the curse and the heart-ache can
cure.

Resolved to be merry,
All worry to ferry
Across the famed waters that bid us forget ;
And no longer tearful,
But happy and cheerful,
We feel life has much that's worth living for yet.
—Sel.

NOTES OF TRAVEL.—No. 2.

BY MRS. E. E. KELLOGG.

WESTMINSTER ABBEY.

THIS is England's mausoleum of her illustrious dead, the shrine of the dust of her great "in arms, in arts, in song." It is the only national sepulcher in the world; and a tomb within its walls, amid the fretted pillars, lofty arches, and marble columns, is considered the last and greatest honor which the English nation can bestow upon the most deserving of her sons and daughters. Here lie nearly all the kings, queens, and princes of England, from Edward the Confessor to George II.,—the reigning sovereigns for a period of more than twelve hundred years. Here sculptors, poets, philosophers, warriors, and divines lie silently moldering in the dust, while monumental marble embalms their memory.

The origin of the Abbey dates back to the seventh century, when Sebert, king of the East Saxons, is said to have erected upon the site of the present Abbey a church to the honor of St. Peter, which was in the time of Alfred destroyed by the Danes, and afterward re-erected by King Edgar. Edward the Confessor, Henry the III., and other sovereigns, have rebuilt, remodeled, and added to the structure, until at the present time it is one of the most beautiful specimens of gothic architecture in existence. It is built in the form of a Latin cross, five hundred and thirteen feet in length, with towers that rise to the height of two hundred and twenty-five feet. The harmony of its proportions, the richness of the coloring, and the beauty of its clustered columns, together with the great array of monumental statuary, serve to render its interior strikingly beautiful. The Abbey is decorated with upwards of twenty stained glass windows, most of which are illustrative of some portion of the Te Deum. Monuments and tablets inscribed with familiar names of persons whose fame is world-wide, together with a record of their deeds and exploits, are everywhere,—

"Thronging the walls; and on the floor beneath
Sepulchral stones appear, with emblems graven,
And foot-worn epitaphs."

Scarce a niche within the entire edifice but bears a memorial to some of England's great men, who have filled history with their deeds, and the world with their renown. Among these are the names of Wesley, Sir Isaac Newton, Watts, Pitt, Warren Hasting, Darwin, and Dean Stanley—whose grave we found covered with a profusion of Easter blossoms—and scores of other illustrious personages.

In the "Poet's Corner" are memorials of many whose names will ever be associated with English poetry and thought,—Milton, Shakespeare, "Rare Ben Jonson," Campbell, Southey, Macaulay, Dickens, Goldsmith, and John Gay, upon whose

tablet is inscribed the doggerel couplet composed by himself:—

“Life is a jest, and all things show it;
I thought so once, but now I know it.”

In the chapel of Henry VII., which adjoins the east end of the Abbey, rests many a royal head. Here, sleeping in the same vault, lie “Good Queen Bess” and her sister, “Bloody Mary,” and near by are the remains of Mary Queen of Scots. Enemies and rivals during life, their ashes are at peace within one common sepulcher.

One of the curiosities of the Abbey is the coronation chair; for here, within the same walls, the pomp and magnificence of the regal coronation of England's sovereigns has for centuries followed close upon the solemn burial of her dead monarchs. As Jeremy Taylor aptly says: “Where our kings are crowned, their ancestors lie buried; and they must walk over their grandsire's head to take his crown.” Even when crowned previously in another place, as was the case with Henry III., the ceremony has been repeated at Westminster, in the presence of the nobles and chief ecclesiastical dignitaries of the land. The throne is an unpretentious old oak chair. Under its seat is kept the stone of Scone, upon which the kings of Scotland had been crowned from time immemorial up to the time of her invasion by Edward I., who brought the stone to London in token of the complete subjugation of the Scots; and if tradition may be believed, it is the stone used by the patriarch Jacob for a pillow in Bethel. On coronation day, the chair is covered with gold brocade, and placed in the center of the sacrum of the Abbey, where the august ceremony is performed by the archbishop. When the crown is placed upon the head of the newly made sovereign, the peers and peeresses also place upon their heads a coronet, and a signal is given from the top of the Abbey for the “Tower” guns to be fired at the same instant.

The “Chapter House” of the Abbey, so called because in the earliest times of the church it was the chamber in which the abbot and monks held, once a week, their “chapter,” or meeting for discussion and business, was for nearly three hundred years used for the sittings of the House of Commons, being lent to the Commons by the abbot for that purpose; thus making it the scene of the chief

transactions which have laid the foundation for the representative and religious liberty of England at the present day.

Westminster is celebrated as being the birthplace of the Presbyterian Church, as it was in the “Jerusalem Chamber” of the Abbey that the famous Westminster Assembly convened. It was also from Westminster that the first English Bible was issued from the press, and within its gray-grown walls, a few years since, sat the committee on its revision.

LONDON BRIDGE.

Nowhere else in the city can one realize so well the enormity of the traffic which makes London the commercial metropolis of the world as upon this passage across the Thames. Down the river as far as the eye can penetrate the hazy atmosphere, are seen forests of masts, here being the port of London; while passing to and fro across the bridge is a constant living stream of humanity; carriages, omnibuses, market carts, wagons loaded with every conceivable produce, drays, trucks, and foot passengers of every profession, hue, and nationality. It is estimated that eight thousand foot passengers and nine hundred vehicles pass over the bridge every hour.

The London Bridge, so famous for the ghastly memories of the many trunkless heads which during the past history of England frequently adorned its pinnacles, was built in the twelfth century. A chapel dedicated to St. Thomas of Canterbury was built upon it, and a row of houses sprang up on either side, so that the bridge resembled a continuous street. Here lived the great painters Hogarth and Holbein, and, for a time, the still more famous John Bunyan. It was terminated by fortified gates on both banks, upon the posts of which were exposed the heads of traitors, heretics, and others who dared to disobey the royal mandates, or in any way displease the ruling sovereign. For six hundred years this was the only bridge across the Thames, but tide and time have long ago dismantled its piers and buttresses, and a more humane civilization has banished the despotism of which it was once the cruel monument; and in its place has appeared a modern structure, upheld by granite arches, which is notable only as being the center of the commerce of the world.

DECAYED DRINKS.

BY JULIA COLMAN.

ONE of the surprising things that come up in the popular ventilation of the alcohol question, is the reluctance to receive the fact that alcohol is always and everywhere the product of decay, and to admit that this has any bearing upon its unwholesomeness. That most people know little or nothing about the origin of alcohol, is shown by their calling it a "good creature of God," and insisting that it be therefore "received with thanksgiving."

In the economy of nature it is the province of organized life to take up the crude elements of earth, air, and water, and to put them into such shapes that we can use them for food. Carbon, oxygen, hydrogen, and nitrogen, put together in various ways *through the agency of life and growth*, make for us a great variety of wholesome and nutritious foods. We can digest them, and grow and thrive upon them, when we would simply starve to death with any amount of these elements in their crude state all about us. The pure carbon, in charcoal, plumbago, and even diamonds, could not feed us, no matter how much it might be sodden with oxygen and hydrogen in the shape of water, or steeped in the nitrogen of ammonia. Neither can they be put together by the nicest manipulations of chemistry in such a way as to sustain animal life. But vegetable life, by its wonderful powers of assimilation and organization, can take up the crude elements, and convert them into the most perfect food for the nourishment of all the animal tissues. This, in fact, is the origin of all that we popularly call food, whether we take it before or after it has passed into some other animal organism. These animal organisms can add nothing to its amount of nourishment; the animal eats for its own use, and not to convert these materials into nourishment for us.

The nourishment thus prepared is, in general terms, in its best condition at the period of the ripeness of the organism by which it has been gathered, though that period may be either before or after harvesting, as in the case of pears, which ripen best in the closet, or of winter apples, which may lie months in the cellar before they are in their best condition. The period of perfection varies. In the case of the pear a single day makes a marked difference, and with small, soft

fruits a few hours often suffices to mark a definite change. The life which gathered and held the various parts of the organism together, is departing, and the elements are separating and returning to their original condition. This separation we call decay. Its rapidity depends largely upon temperature and moisture. If these favor, the decay may be far more rapid than the growth. Soft fruits in warm weather literally fall to pieces in a few days, and no one thinks of calling them nutritious in this condition. The separation of the juices from the solid parts only hastens the decay of both; the liquid parts decaying more speedily.

If they are fluids, and these fluids contain sugar, the decay is called fermentation, and alcohol is one of the forms which some of the elements pass through on their way back to their original earth, air, and water. Liebig says that fermentation is nothing but the decay of a sweet liquid. Professor Youman's says: "All alcohol, whatever form it assumes, has one origin—it comes from the destruction of sugar. It is not a product of vegetable growth, like those substances which are created to form the food of man. No chemist has ever yet found it among the compounds built up by plants. The solar beam, which reaches like the finger of God across the abysses of space, and in the laboratory of vegetation takes to pieces poisonous gases and puts together their atoms in new groups which are capable of nourishing the animal body,—this celestial force never arranged together the atoms which form alcohol. On the contrary, it is a product of dissolution,—of the wreck and disorganization of the principles of human food. It has the same origin as those malignant and fatal exhalations which constitute the genius of pestilence,—the death and putrefaction of organic matter. Indeed, the same act which gives birth to alcohol brings into the world a twin "compound which is one of the promptest and subtlest of all poisons,—carbonic acid gas."

Dr. Charles Jewett says: "Alcohol is always the product of decay. Obtain it from whatever source you may, the death of the vegetable from which you obtain it must precede its formation or extraction. Vitality cannot co-exist with it. No vegetable contains it while life continues, but when all vitality is extinct, then fermentation takes place, and alcohol is the first product of the process of de-

cay. Now in all its influences on society and man, alcohol seems to retain this principle of incompatibility with vitality. Death must precede its march, and tread closely on its heels. Nutritious articles are the product of nature alone. We can take sugar, for instance, and resolve it into its three elements,—oxygen, hydrogen, and carbon; but all the chemists in the world cannot take these three and make sugar. The sugar-cane, the sorghum, the beet, and our maple trees, can do this, but man cannot. The growing, composing vegetable would produce substances nutritious for man. Alcohol is not produced by composing matter in any instance in creation, but by decomposing matter entirely. Sugar, putrefying, makes alcohol. Alcohol is a stage in the process of decay and death. It putrefies humanity physically (as many a bloated form testifies), socially, and morally.”

Dr. B. W. Richardson asks all teachers to teach their pupils, “first of all, that it is an entire fallacy to suppose that alcohol in any of its forms as intoxicating drink, is the gift of God to man. It is no such thing. I know men will tell you of the vast acreage of grape fields, and of miles of fields of waving barley, and speak of them as gifts. They are gifts as fruit and grain; they are not gifts as fermented and chemically produced alcohol. Man invented alcohol, and it is in point of fact as pure a product of the laboratory as chloroform or ether.”

Much stress is laid upon the fact that some of our foods are decayed; but we do not usually let our food decay before we eat it, and when we do, that does not make it any more nourishing. Foods that have just commenced to decay, like sour milk or fermented bread, may still have the most of their nutrition left in them; but they have lost their nourishment by just so much as they are decayed. You would not expect a rotten apple or a moldy biscuit to do you as much good as if it were fresh and sound. If it should be left to decay completely, as fruits and grains do in making alcohol, it would be worth about as much as the smoke and ashes that are made from burned wood. Pereira, in his “Food and Diet,” after admitting the decay in the process of making leavened bread, devotes some very careful considerations to the process of making unleavened bread, as if that were well worthy of consideration, and this kind of bread certainly is both sweeter and more nutritious.

People sometimes object not only to our calling fermented wine, beer, and cider decayed drinks, but to the stress laid upon the fact that decay makes them unwholesome, though I cannot see why they should do so. They believe the doctors readily enough when the latter say that much of the hot-weather sickness in large towns and cities comes from eating stale vegetables and half-decayed fruits. If, then, so small a degree of decay proves so unsalutary, how much more readily should we be willing to attribute mischief to alcoholic liquors, which are the product of long decay, and which people continue to pour into their bodies day after day, sometimes for years together. If sewer-gas, vegetable malaria, and animal decay are poisonous in their influence, why should not this twice decayed rottenness called alcoholic liquor be credited with all the physical disease, decay, and degeneration, which it so largely produces? Why should not the foul, sour breath of the beer-drinker, or the whisky-laden fumes that come belching up from the disordered stomachs of chronic soakers, be attributed to their proper source, and the bloated forms and festering faces be justly associated with the foul process of rottenness and decay by which the drinks that caused all this loathsomeness are produced? It seems to us well worth our while to tear off the false colors with which its votaries have bedecked this hydra-headed monster, and let him loom up in his naked deformity, with the well-earned title of “ALCOHOL, KING OF ROTTENNESS.”

FIVE OBEDIENT HUSBANDS.

THERE were five of them together, and it was late. They had been drinking. Finally, one of them looked at the clock and said, “What will our wives say when we get home?”

“Let them say what they want to. Mine will tell me to go to the mischief,” responded No. 2.

“I’ll tell you what we will do. Let us meet here again in the morning, and tell our experiences. Let the one that has refused to do what his wife told him to do when he got home pay for the night’s entertainment.”

“That’s a good idea. We all agree to that.” So the party broke up, and the men went to their respective homes. The next morning they met at the ap-

pointed place, and began to tell their experiences.

Said No. 1,—

"When I opened the door, my wife was awake. She said, 'A pretty time of night for you to come home! You had better go and sleep in the pig-pen; for that's what you will come to sooner or later.' Rather than to pay for what we drank last night, I did what she told me to. That lets me out."

"Next!"

No. 2 cleared his throat and said,—

"When I got home, I stumbled over a chair, and my wife called out, 'There you are again, you drunken brute! You had better wake up the children and stagger about for awhile, so they can see what a drunken brute of a father they are afflicted with.' So I woke up the children, and staggered around, until my wife hinted to me to stop. She used a chair in conveying the hint. That lets me out."

"Next!"

No. 3 stood up and said,—

"I happened to stumble into a pan of dough, and my wife said, 'Drunk again! Hadn't you better sit down in that dough?' So I sat down in it, and that lets me out."

"Next!"

No. 4 said,—

"I was humming a tune, and my wife called out, 'There you are again! Hadn't you better give us a concert?' I said, 'Certainly,' and began to sing as loud as I could, but she told me to stop or she would throw something at me, so I stopped. That lets me out."

No. 5 looked very disconsolate. He said,—

"I reckon I'll have to pay. My wife told me to do something none of you would have done if you had been in my place."

"What was it?"

"She said, 'So you thought you would come home at last? Now, hadn't you better go to the well and drink a couple of buckets of water, just to astonish your stomach?' That was more than I bargained for; so it's my funeral."

—An exchange says that an Indiana man the other day gave his trotting horse a pint of whisky before the race to help him along. The horse was made drunk and unmanageable, and it rushed upon the grand stand, and killed itself. Men who

fill themselves with whisky often act in precisely the same way. Does this prove that horses are very *human*, or that men are very *horsey*?

STRETCHING THINGS.

"I'm almost dead! It is as hot as fire, and I've been more than a dozen miles after that colt."

Andrew threw himself at full length on the lounge, and wiped the perspiration from his forehead.

"Where did you go?" inquired his father.

"I went over to Briggs's corner and back by the bridge."

"That is a little less than a mile and a half. Is it so very warm, Andy? It seems quite cool here."

"No, not so dreadful, I don't suppose, if I'd taken it more moderately, but I ran like lightning and got heated up."

"You started about five o'clock, my son, and now it lacks a quarter of six," said his father, consulting his watch.

"Yes, sir, just three-quarters of an hour," answered Andrew, innocently.

"Does it take lightning forty-five minutes to go a mile and a half?"

"I didn't mean exactly that, father; but I ran all the way, because I expected the whole town would be here to-night to see my new velocipede," explained Andrew, reluctantly.

"Whom did you expect, Andy? I wasn't aware such a crowd was to be here. What will you do with them all?"

"Jim, Eddy, and Tim told me they'd be around after school, and I would'n't wonder if Ike came too; that's all."

"The population of the town is five thousand, and you expect three of them. Well, as you are very sick, I'm glad no more are coming. You could'n't play with them at all."

"Sick!" cried Andrew, springing to his feet, "who says I'm sick?"

"Why, Andrew, you said you were almost dead; does'n't that mean very sick?"

"You are too particular, father, about my talking! I don't mean exactly what I say, of course. I was'n't nearly dead, to be sure, but I did some tall running, you bet. There were more than fifty dogs after me, and I don't go much on dogs."

"Quite a band of them! Where did they all come from?"

"There was Mr. Wheeler's sheep dog, and Rush's store dog, and two or three more; and they made for me, and so I ran as fast as I could."

"Five at the most are not fifty, Andy."

"They looked to be fifty anyway," answered Andrew, somewhat impatiently. "Carter's ten-acre lot was full of dogs just making for me, and I guess you'd thought there were fifty if it had been you."

"Ten acres of dogs would be a great many thousand; have you any idea how many?"

Andrew did not like to calculate; for it occurred to him what a small space ten or fifteen thousand sheep would occupy when camping, and ten acres of dogs would be past calculation.

"But," his father continued, "I know no better way to break you of the foolish habit of exaggeration than to tell the children the trouble you had in going after the colt. You ran like lightning, encountered ten acres of dogs,—which would be hundreds of thousands,—traveled more than a dozen miles to get one and a half miles in a straight line, expected to find five thousand people here to examine your new velocipede, and when you reached home were nearly dead!"

"Please don't, father; the boys and girls will all laugh themselves to death, and I won't exaggerate again if I live to be as old as Methuselah!"

"Laugh themselves to death at a simple story like this? I hope not, but that it will rather set them to watching their own manner of telling stories, so as to be sure they do not greatly overstate things. Habit, my son, grows with years, and becomes, in time, so deeply rooted that it will be impossible for you when you become a man to relate plain, unvarnished facts, unless you check the foolish habit you indulge in every day of stretching simple incidents into the most marvelous tales."—*Christian Neighbor.*

CROWNED HEADS OF EUROPE.

THE following list of the crowned heads of Europe, together with the names of their wives, will not be uninteresting just now. William I., Emperor of Germany and King of Prussia; Princess Augusta of Saxe-Weimar. Leopold II., King of Belgium; Marie, daughter of Archduke Joseph of Austria. Francis

Joseph, Emperor of Austria; Princess Elizabeth Amalie Eugenie, cousin to Ludwig II., King of Bavaria, who is unmarried. Victoria Alexandrina, Queen of England and Empress of India, the widow of Prince Albert of Saxe-Coburg and Gotha. Georgios I., King of Greece; Princess Olga, daughter of the Grand Duke Constantine of Russia. William III., King of the Netherlands; Princess Sophie, daughter of the late King William of Wurtemberg. Alexander III., Emperor of Russia; Marie Sophie Frederike Dagmar, daughter of Christian IX., King of Denmark, whose wife is the Princess Louise of Hesse Cassel. Humbert I., King of Italy; Princess Margaret of Savoy. Louis I., King of Portugal; Maria Pia, a daughter of Victor Emmanuel. Alfonso XII., King of Spain; Archduchess Maria Christine of Austria. Oscar II., King of Sweden and Norway; Sophia, daughter of Duke William of Nassau. Dom Pedro is the Emperor of Brazil; his wife's name is Theresa Christina Maria, sister of Francis I. of Naples. Queen Victoria is the mother of four sons and five daughters; viz., Albert Edward, Prince of Wales; Prince Alfred, Duke of Edinburgh; Prince Arthur, Duke of Connaught; Prince Leopold; Princess Royal Victoria; Princess Alice (died Dec. 14, 1878); Princess Helena; Princess Louise; and Princess Beatrice.

MAKING PRESENTS.

SOME tact is required in making presents. Never intimate your intention of making one. Half the pleasure in receiving a present consists in its being unexpected. Avoid the appearance of making your gifts of consequence. When you have presented it, and acknowledgments have been rendered, do not recur to the subject; but if its merits have been highly extolled, and the person who has received it evinces lively satisfaction, express your happiness that he is pleased, and say that his opinion of it constitutes the value of the gift; at the same time, do not fall into the vulgar error of depreciating it. The gifts made by ladies to gentlemen should be of the most refined nature; not purchased, but deriving a value above price as emanating from their own skill or ingenuity; as a sketch from their pencil, or some little production from their needle. However small or insignificant a present may be, if offered to

you, accept it with expressed thanks; not to manifest much pleasure in receiving it would not only betray ill-breeding, but a disregard for the feelings of the giver, whom you may be certain intended a kindness. We should preserve the presents of friendship with scrupulous care, and ought never to dispose of them, or to give them away to another. It would be very gratifying to the donor were we to speak of it occasionally whenever a suitable opportunity offers; and in proportion as time has elapsed, this attention will confer the more pleasure, and it will prove that we have preserved the gift with care.

A Difference.—"Who is this well-dressed man with the seal-skin overcoat, hat, and gloves? He carries a gold-headed cane, and is followed by a bulldog in a scarlet blanket. Do you know him?" "Oh, yes; that is Slugger, the pugilist. Fine man. Hard hitter. Very popular. Always surrounded by a crowd of admiring friends, as you see him now. He is very well off; was given a benefit the other night that netted him \$500." "Indeed; he is very fortunate." "Oh, yes; a very fortunate fellow; ranks high in his profession, you see." "Who is that white-headed, weary-looking old man close behind the pugilist and his friends? Poor man! he seems thinly clad for this wintry weather. Do you know him?" "Oh, yes; that is old Faithful, a country clergyman. Very learned man, they say. Been a preacher of the gospel all his life, but poor as a rat. He had a benefit, too, the other night." "Oh, indeed! Did it net him much?" "I don't think it did. You see, it was a sort of surprise party. His parishioners called upon him in a body, ate up everything there was in the house, and left him presents to the amount of sixty cents."—*Ex.*

The True Gentleman.—The following sketch of the true gentleman was found in an old manor-house in Gloucestershire, England, written and framed, and hung over the mantel piece of a tapestried sitting-room:—

"The true gentleman is God's servant, the world's master, and his own man. Virtue his business; study his recreation; contentment his rest; and happiness his reward. God is his father; the church his mother; the saints his brethren; all that need him his friends. Devotion his

chaplain; Christianity his chamberlain; Sobriety his butler; Temperance his cook; hospitality his housekeeper; Providence his steward; Charity his treasurer; Piety his mistress of the house; and Discretion his porter, to let in or out as most fit. This is the whole family, made up of the virtues, and he is the true master of the house. He is necessitated to take the world on the way to heaven, but he walks through it as fast as he can, and all his business by the way is to make himself and others happy. Take him in two words—a man and a Christian."—*Sel.*

Girl Smokers.—The independence of the Boston girl long since became proverbial, as well as her ambition to emulate the male citizen of the "hub" in as many respects as possible. According to a Massachusetts paper, the most recent development in the latter direction is indicated by the statement that a Boston cigar-dealer asserts that his largest trade is with the girls in the city schools. We were aware that cigar-smoking was becoming prevalent among certain classes of young women in Western and Southern cities, but it seems that Boston, the center of art and culture of America, is to lead the country in female smoking as well as in literature and Monday lectures. Is it not about time for a general rally of all friends of progress, to join hands in putting down this barbarous custom?

POPULAR SCIENCE.

—Dr. Guidrah of Australia has invented an instrument called the Electro-scope, by means of which vibrations of light as well as sound may be transmitted. It has been tested by many scientific men, and pronounced a success. It enables one to see that which is transpiring many miles distant in minute detail, as correctly as though observer and observed were in close proximity.

—It is claimed that in London a tram-car carrying forty-six passengers, in addition to its own weight of four and a half tons, has been propelled by electricity stored up in an accumulator, which also supplies the lamps at night. The car is said to be capable of running half a day without recharging the accumulator.

—Messages have recently been conveyed by telephone between New York and Chicago. The voices were recognized, and the words heard as distinctly as though the distance had been a mile instead of nearly a thousand.

—A scientific Swede of some celebrity has discovered a process whereby kerosene may be solidified. The result is a substance resembling tallow, possessing all the original qualities of kerosene, and is to be utilized in the manufacture of candles.

—An ingenious mechanical device has been exhibited in New York, whereby gold dust may be separated from sand without the assistance of water. As the mechanism is neither intricate nor expensive, and there are large tracts of territory where gold abounds, quite remote from any considerable water supply, the invention promises to be one of value.

—In some portions of the Mediterranean Sea is found a specie of mussel whose shell contains a little bundle of delicate fibres of silk. When these are washed and separated, they are of several shades of color from yellow to brown, and very beautiful. The amount contained in each shell is about half a drachm.

—Glass sleepers for street railways have been tried with good results; and it is proposed to make broad longitudinal sleepers of glass, having a groove in the upper surface, and so, combining in themselves the functions of both sleeper and rails, do away with the necessity for separate iron rails, with their fastenings, joints, and other complications. It is claimed that by properly tempering glass with oil, this brittle substance can be made, mass for mass, stronger than steel, and practically unbreakable.

The Eucalyptus Tree and Malaria.—

Notwithstanding the doubts recently expressed respecting the anti-malarial properties of the *eucalyptus* tree, new evidence is constantly offered in support of its reputation as a means of combating successfully the deadly malaria which renders some portions of the globe almost uninhabitable. We clip from an exchange the following paragraph:—

“The abbey and church of the Three Fountains on the Campagna outside the walls of Rome, reported to be the place where Paul was beheaded, has long been unsafe on account of the deadly malaria, and the monks who resided there almost took their lives in their hands. The Government of Rome has given a large grant of land to the Trappists, who have planted 100,000 eucalyptus trees, which seem to have purified the poisonous atmosphere, and the residents are now nearly free from malaria, and live there safely all the year round.”

An Electrical Experiment.—*La Nature* describes the following simple electrical experiment:—

“Take a pipe—one of common clay, costing one cent—and balance it carefully on the edge of a goblet, so that it will oscillate freely at the least touch, like the beam of a pair of scales. This being done, say to your audience: ‘Here is a pipe placed on the edge of a goblet; now the question is to make it fall without touching it, without blowing against it, without touching the glass, without agitating the air with a fan, and without moving the supporting table.’

“The problem thus proposed may be solved by means of electricity. Take a goblet like the one that supports the pipe, and rub it briskly against your coat sleeve, so as to electrify the glass through friction. Having done this, bring the goblet to within about a centimeter of the pipe stem. The latter will then be seen to be strongly attracted, and will follow the glass around, and finally fall from its support.”

Gold Mines in Africa.—According to the *African Repository*, the gold mines of Africa are yet in the very infancy of their development. “Capt. Burton and Commander Cameron, the distinguished African travelers, have returned from an examination of the West African gold fields; and in papers read by them before the Society of Arts, London, the former ‘recapitulated’ as follows: ‘The good news we bring home is the prodigious wealth of the land. I know nothing to equal it in California or in the Brazils. Gold dust is panned by native women from the sands by the seashore. Gold spangles glitter after showers in the streets of Axim. Gold is yielded by the lumps of yellow swish that rivet the wattle walls of hut and hovel. Our washings range from half an ounce to four ounces per ton. There, then, is the gold, and it will be our fault only if it remains there. I know no land better able to supply the measure required in England to preserve the balance of the precious metals than this old New California, our neglected El Dorado, the Gold Coast.’”

Origin of Muck Deposits.—The origin of the deposits under consideration is not by any means obscure, and may be stated in a few words. Whenever stagnant water has existed in low basins for a large number of years, a certain class of marsh plants, mosses, and grasses have found favoring conditions for rapid and luxuriant growth. These plants have matured and decayed, finding a tomb in the impure waters which fostered their growth. As the decades of years and of centuries succeeded, with the alternations of heat and cold, the basins were filled up, so that surface water disappeared, and matted turf, compacted with low and worthless forms of grasses, came into view. In most cases deciduous trees and water shrubs grew in association with the grasses and mosses, and the annual fall of leaves and dead twigs contributed not a little to filling up the stagnant ponds and puddles.

Whenever vegetable growths become dead, and fall into moist earth with access of air, a process of emacausis, or slow combustion, commences, which, proceeding slowly, ultimately ends in entire disorganization of tissue, and the product is called *humus*. The process is different when it falls into the water, as, in the case of large trees and limbs, a dozen centuries will hardly serve to disassociate and change their cellular structure, and some of the finest and most durable timber used in ship and house construction has been exhumed from the vast swamps and bogs found in our own and other countries. The peats and mucks of our own low meadows, have, to a large extent, resulted from the decay of the smaller forms of vegetation, as grasses, leaves, and moss. Of all the various forms which have contributed to our muck beds, the spongy mosses constitute, undoubtedly, the most important constituents.—*Scientific American*.



GOOD HEALTH.

BATTLE CREEK, MICH., JULY, 1883.

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

TERMS, \$1.00 A YEAR.

A HYGIENIST ABROAD.

Our stay in Paris was rather limited, but our time was all profitably employed. Here we found the only Turkish bath in France, established about seven years ago, and very prosperous. It was evidently modeled after the Hamman of London, and bears the same name. We also found here the most expert masseur we have ever met, and are under obligations to him for the special pains he took both at the bath and at our hotel in exhibiting to us every detail of the French and English methods of massage. The hospitals we found interesting, though dirty. The Charité hospital is provided with a complete bath department, including Turkish and Russian baths, which we have not found in connection with any other hospital, although a building for the purpose was being constructed at the famous Salpêtrière, one of the largest hospitals in the world, accommodating several thousand patients and attendants.

At the Charité hospital we saw in operation the baby incubator invented by M. Tarnier, and made almost exactly like a chicken-hatching machine. The inventor declares that by the aid of his apparatus he is able to make babies of six months rival those of three years in size and strength. Of three hundred babies put through a six months' course, all were able to walk within a week after leaving it, though most of them were but little more than six months old. It is said to be almost indispensable for rearing very feeble infants. The nurses are very enthusiastic in its praise, perhaps partly because babies in the hatching apparatus are very easily cared for, sleeping constantly, except while being fed. The heat of the apparatus is regulated by a current of hot water. The apparatus is destined to become very popular in France, where mothers are notoriously averse to the trouble of caring for their little ones, and for years have engaged in the infamous practice of "farming" them out. They can now avoid all inconvenience by putting the little ones into the glass box of the incubator, and engaging some one to administer food at proper intervals. The children will also enjoy the advantage of escaping most of the diseases incident to early childhood, and will undoubtedly be better

brought up by the "artificial mother" than by the real one. We have not fully decided whether an incubator may be profitably introduced at the Sanitarium or not; but if we thought a six months' course in the apparatus would remedy the defects acquired in babyhood by bad nursing, we should bring back several sets of the apparatus, with a certainty of finding plenty of use for them.

We were much interested in investigating the effects of the treatment of disease by means of oxygen, or superoxygenated air, as we have for a long time had under consideration the advisability of introducing the remedy among the other numerous appliances already in use at the Sanitarium. We have waited only to become thoroughly convinced of its utility. The remedy is employed very largely in Paris at several establishments, where it is exclusively relied upon as a means of cure; and our investigation led us to believe that while it is by no means a panacea, it is of very great value in the treatment of certain ailments, particularly anemia, nervous debility, many cases of dyspepsia, inactivity of the liver and other excretory organs, and last, but by no means least, pulmonary diseases, especially asthma and incipient consumption. We shall construct apparatus for its use after the most approved forms, as soon as possible after we return.

We have always felt it to be a duty which every physician owes to his patients, to employ no remedy capable of doing harm, until its utility has been thoroughly demonstrated, and its mode of application clearly defined. Human life is too valuable to be wasted in experiments. France is pre-eminently a country of experimentation. All sorts of projects, to an American brain in the highest degree absurd and chimerical, are constantly being set on foot by impulsive, quick-witted Frenchmen, who now and then, out of seeming impossibilities, by good fortune more than by profound research, develop really useful and valuable results; and we Americans are very ready to make use of them, although our French brethren are decidedly averse to the adoption of anything American, or, indeed, of any other foreign origin. The average Frenchman cannot conceive of the possibility of the discovery of anything valuable being made

outside of France. And so we sought in vain for some of the new and valuable remedies introduced in America within the last ten years, although we did find any quantity of the different brands of American "bitters" and other *patein nostrums*. The Frenchman is quite an enigma to us. He seems to delight in doing what other people either do not care to do, or are not sufficiently venturesome to undertake. The reckless daring of the first Napoleon was undoubtedly one of the elements of his success, as it awed and astonished his foes into inactivity, while he was preparing the way for certain victory.

In matters of diet the Frenchman is unique, at least among civilized nations. He is proverbially the king of cooks. Give him a bit of charcoal for a fire, a bone, and a handful of vegetables, and he will make you every imaginable variety of soup. If beef bones are scarce, a horse or mule bone will do just as well. One day while riding along the street in Paris, we noticed a horse's head fastened over a doorway, through which we could see what seemed to be an ordinary meat shop. We ordered our cabman to stop, and with our courier stepped inside. On inquiry, we found that this shop dealt entirely in horse flesh, which was exhibited in all varieties. Huge quarters of mule were suspended from the ceiling, and various chunks of flesh which were arranged about on counters were labeled "*mulet premier classe*" (first-class mule), "*âne premier classe*" (first-class donkey), etc. Here was a horse's heart, there a portion of mule tripe, a nice donkey steak, mule tallow, and sausage which was undoubtedly on intimate terms with all varieties of the horse family, and possibly with some smaller animals as well, as the French sausage-maker has long enjoyed the reputation of being able to make most toothsome sausages from defunct dogs, cats, and even rats, and sundry other small animals whose utility has heretofore been considered questionable. We ventured to inquire after the previous health of the creatures whose nicely dressed carcasses looked quite as inviting as though they had been the choicest of beef; but soon found we were treading upon forbidden ground. The shopkeeper never inquired as to their previous history, and had other business unless we wished to purchase. Here was a tenderloin steak which we would find very excellent eating. We allowed him to cut us off a piece, settled our bill, and carried home our steak, not to eat, however, but to preserve in alcohol as a memento of our visit. Unfortunately, a catastrophe to one of our valises just as we were leaving the city, demolished the bottle containing the precious morsel, and left us nothing more tangible than the memory of our visit to the horse-meat market, which, however, will remain fresh for many a day.

An hour or two after our visit to the market, we witnessed the death of a cab horse, which broke its neck in turning a somersault just as we were passing

it in the street. The poor beast was undoubtedly the next day honored with a place in some butcher's shop along with other unfortunate equines that had died prematurely, or had outlived their usefulness as beasts of labor.

Leaving Paris, we had a very pleasant trip through France and Switzerland, including a ride on Lake Geneva nearly its whole length, which afforded most charming and romantic views nearly the whole route. On one side were to be seen fertile hillsides covered with vineyards just putting on their green dress, with flourishing little villages nestling at their feet along the shore; while on the other side a rocky wall, sometimes hundreds of feet in height, marked the border of the lake and presented tier above tier of cliffs and bluffs, which, receding in the distance, towered higher and still higher, until lost amid the snow-clad peaks of the world-famous Alps. We were interested in noticing the habits of the Swiss peasants as we passed along. They were just beginning in good earnest their agricultural operations for the season, and a very busy scene the country presented. Every foot of tillable soil is cultivated in this rocky country, and the whole country population, men, women, and children, are farmers. The men plow, the women and children sow, and all carry burdens in huge baskets strapped to their backs, or mammoth bundles on their heads. All the animals work as well, including goats and cows. And these people looked wonderfully healthy, happy, and innocent. Their laborious life leaves them no time and no disposition for mischief. Their life is the most simple imaginable, and they seem to be the most contented and happy people in the world.

Before leaving Switzerland, we provided ourselves with a loaf of "swartz brod," the well-known black bread of Germany, thinking we should be unable to obtain "bran bread" in Italy. We made one or two attacks upon our black loaf, and succeeded, by dint of much labor, in detaching a few crumbs; but the greater portion still remains intact, and will most likely accompany us to America. In its present state it ought to outlast an Egyptian mummy. In Italy, as in Switzerland and France, the whole population work, except among the wealthy class, which is not at all numerous. Burdens are almost altogether carried on the head, and on the backs of donkeys. It is not at all uncommon to see a woman with a bundle upon her head quite as large as herself, and so heavy as to require two persons to lift it into place. And the poor donkeys are often so heavily laden with heaps of vegetables, that as they move along, they appear at first sight to be animated cabbage heaps rolling off to market on their own responsibility. The patient brutes are most unmercifully overworked, and cruelly treated.

The Italian plow consists of a long pole, to the end of which is attached a very rude sort of an iron instrument which makes a shallow furrow in the soil.

To this is usually attached a cow, or sometimes two cows, or a cow and an ox. In the vicinity of the large cities, many carts are seen drawn by the most incongruous combinations of animals. Here are a few of the most common combinations: a horse and a donkey; a horse or a donkey and an ox; a donkey and a cow; a cow with a horse on one side and a donkey on the other; a donkey and a man, both in harness, and tugging away at the same load. Once we saw three women in harness, hauling a huge cart, the owner of which walked leisurely along behind, now and then putting out his hand to steady the load as it rattled over the rough road. Even this combination was surpassed in Vienna, where we saw, the other day, a woman and a dog harnessed together and hauling a heavily loaded cart. Huge dogs are used here as are donkeys in Italy. Hundreds of them may be seen daily upon the streets, hauling seemingly impossible loads.

But to return to Italy. It is certainly a most wonderful country. It is a land full of ruins of former greatness. The Campagna, extending from Rome to Naples, is strewn with the ruins of tombs, temples, and once gorgeous palaces. Rome itself is built upon the ruins of palaces and pagan temples. Its hundreds of churches are built of the very stones, and ornamented with the costly marbles and bronze, which once decorated the temples of Jupiter, and Mercury, and Venus, and those of the hundreds of other pagan deities which were once worshiped in ancient Rome, and confronted each other in the Pantheon.

That the ancient Romans were a cleanly people is evidenced by the great number of baths with which the city was provided. The immense baths of Caracalla, for example, cover several acres, and furnished accommodations for sixteen thousand bathers. Dressing-rooms, reading-rooms, porticoes, and every possible luxury, were added to the necessary apartments for vapor, hot-air, and various kinds of water baths, including immense basins for swimming and other aquatic sports. No modern structure can begin to rival these ancient baths in completeness or magnificence. Some of them were several stories in height, with both private and public compartments, the latter being free to every Roman citizen, whether patrician or plebeian. The baths of Diocletian, though less perfectly preserved than those of Caracalla, were twice as large, accommodating more than thirty thousand bathers. The beautiful mosaic floors, and the rich frescoes of the walls and ceilings, are in some places sufficiently well preserved to afford a faint idea of their former magnificence and grandeur. We took great interest in studying the plan of these famous baths, and found the study profitable, though it was a little humiliating to learn that our modern arrangements are in many ways so much inferior to those of a nation which flourished two thousand years ago. At Pompeii we found a bath in a state of almost per-

fect preservation, only a portion of the roof being destroyed, so that the whole plan could be studied with ease and accuracy. To our surprise, we found in the Rome of to-day not a single Roman bath in operation, and we did not learn that the city contains any public baths of any sort, although the poorer classes are evidently in great need of sanitary institutions of this sort.

We found the hospitals of Rome very interesting on account of the rigidly scientific manner in which patients are classified. Each hospital has its particular class of maladies, so that the old adage, "Birds of a feather flock together," seems to be literally fulfilled. One of the hospitals we visited was the oldest in Europe; yet it embodied one feature which might well be imitated in our modern hospitals. The courteous Italian physician who showed us through called our attention to the great height of the vaulted ceilings, which were not less than thirty or forty feet from the floor, and remarked that our forefathers appreciated better than we the value of fresh and pure air as a remedial agent. Somewhat to our surprise, we found in these Italian hospitals some of the most recent and valuable of American methods in efficient use, and found that they were understood and appreciated much better than in either England or France.

At the hospital for skin diseases, we witnessed a spectacle which will never be forgotten for its oddity. In a room devoted to the special purpose for which it was used, were seated twenty or thirty boys, upon two rows of seats extending along two sides of the room, the back row being raised about eighteen inches higher than the one before it. The boys were equally divided between the two rows, and each boy in the upper row held between his knees the head of the boy before him in the lower row. These boys were all suffering with a malady known as *tinea capitis*, a disease of the scalp which requires the extraction of every hair in the affected portion, not only once, but many times; and these boys were performing for each other the necessary duty of extracting the hairs, one at a time, with a pair of pincers. The degree of expertness which these little fellows had acquired was quite marvelous. We have never seen their dexterity equaled except by that caricature of humanity, the monkey, when searching the furry heads of its young for predatory parasites.

One of the striking features of the hospitals of Rome is the requirement that all patients who are able shall labor a portion of each day. At one hospital we saw men patients engaged in repairing shoes, bottoming chairs, mending tin pans and other articles, besides cleaning floors and doing other necessary work about the premises. A woman was using an American knitting machine with as much expertness as we have ever seen one operated in America.

But we have already extended this article far beyond the limits which we had fixed for it, and must hasten

to give a brief sketch of some of the interesting objects about Naples. You have all heard of the famous grotto into which a man may walk erect, while a dog by his side is quickly rendered insensible by the carbonic acid gas and other poisonous gases which, being heavier than the air, creep along the floor of the cave. The grotto extends downward and into the side of a mountain near Naples, perhaps no one knows how far, as it can be explored but a few feet from the entrance. We went in until our torch was extinguished, and we were completely submerged in the gaseous poison, when we were glad to hasten out to avoid the fate of the poor dog that lay struggling upon the ground in insensibility. The poor brute recovered in a few minutes, however, and wagged his tail as happily as though he had just received a fresh bone, and raised not the slightest objection when the man in charge of the cave led him into the noxious vapors for another exhibition of their poisonous properties. From these cruel experiments, the cave has acquired the name of *Grotto del Cane*, or grotto of the dog. We were curious to know the effect of the frequent inhalation of the gas by the poor dog, and were informed that the unfortunate animals seldom survive the treatment more than six months.

Near by is another grotto, or rather chambers excavated in the soft rock, in which similar vapors collect, and which are visited by persons suffering with rheumatism, and known as the *Stufe di San Germano*. The vapors are so hot that profuse perspiration is induced in a few moments, and they thus form a sort of natural Turkish bath. A few miles farther, just beyond Pozzuoli, the ancient port upon the bay of Naples where St. Paul landed on his journey to Rome, and then known as Puteoli, is found another curious cave in the side of the mountain. The passage is very long and narrow, and at its inner terminus is a spring of boiling water. Two little boys in waiting for the opportunity, quickly stripped to the waist, and with torches in their hands and an egg in a basin, ran rapidly into the dark passage. Curiosity led us to follow suite. The heat was almost insupportable; but we thought we should be able to endure as much as the small boys, and so ran on through the winding, narrow passage, which seemed constantly to descend, until on turning an abrupt corner we discovered the little fellows holding the egg in the boiling water of the spring, with the perspiration streaming down their bodies as though they were in the hot room of a Turkish bath. We were glad to hasten out, and escaped into the fresh air with a better appreciation of the value of oxygen than we ever had before. We found our egg was as well cooked as though it had been the same length of time in boiling water; but our guide swallowed it before we had a chance to taste it.

This boiling spring is said to have been visited by the ancient Romans for the relief of rheumatism.

All of these curious places are in the immediate vicinity of Solfatara, an old volcano now nearly extinct, although its old crater is larger than that of Vesuvius, and it still sends forth a great volume of sulphurous smoke and noxious gases. Several years ago, a medical correspondent of ours who then resided at Naples, suggested that this would be one of the best places in the world for the establishment of a Sanitarium. The climate is most delightful. There is no frost in winter, and no oppressive heat in summer. Every variety of fruit grown on the face of the earth is found here, from apples and pears to figs, pomegranates, and the Japanese nespola; and all manner of fresh vegetables all the year round, with a volcano to supply hot water and steam free of cost and in unlimited quantity. Possibly the uncertainty of mundane things in the neighborhood where Herculaneum and Pompeii were buried some centuries ago, and the not unusual experience of having to jump up in the night and run into the street to avoid being buried under a falling chimney disturbed by a gentle reminder of more vigorous shakings-up in by-gone days—possibly these and similar little episodes might serve to discourage foreign patronage to some degree; and the native population have free access to any number of natural Turkish baths and thermal springs. So we think perhaps it will hardly be advisable to undertake such an enterprise in Italy just yet.

But how this article has expanded as we have rambled on in our journeyings! We were going to ask you to ascend Vesuvius with us, but you must be quite too much fatigued for such an expedition, and so we shall have to defer the trip until another day. We have yet to visit Graefenberg, the home of Priesnitz, the pioneer water-cure doctor, Carlsbad, Baden Baden, and other famous places, including Stockholm, Sweden, the head-quarters of the Swedish-movement cure, in all of which places we hope to gather valuable and practical ideas which we may utilize in helping invalids to health.

—A remarkable surgical case is recently reported, —that of a Roumanian, who, six years ago, was robbed by gypsies, and left for dead. After having his throat cut from ear to ear, completely severing the windpipe, he was hanged to a tree until he was supposed to be dead, and was finally left with several fearful gashes in his chest. After a period of insensibility, consciousness returned; and being fortunately discovered by friends, he was taken to a hospital, where his wounds were dressed, and by means of a silver tube placed in his windpipe, he was enabled to breathe without any inconvenience. He is still under surgical treatment, and bids fair to make a very good recovery.

—If you cannot speak well, speak not at all.

WOMEN'S RIGHTS IN EUROPE.

On the Continent, women have the privilege of doing anything that a man does, apparently, at least. In Paris, women sweep the streets, and work on the public roads, and are employed in other public works as common laborers, driving carts, breaking stones, etc. In Italy, women are harnessed up to carts, like oxen, and haul loads. To-day we saw here in Vienna women at work as tenders of masons who were repairing a government building. The men did the easy work; the women carried away the rubbish, and did the drudgery. A few days ago, we saw a young woman and a large dog harnessed to a cart together, and trudging along side by side through one of the principal thoroughfares of the fashionable Austrian capital. When our carriage stopped at a country inn in Italy for an hour's rest a week or two ago, a woman unhitched the horses, took off their harness, and led them to the stable, while a smart young man served dinner for us. A day or two ago we saw a woman caring for the horses at one of the leading hotels of this city. Some years ago a philanthropist had his sympathies aroused at seeing so many poor dogs acting the part of horses here in Germany, and received the passage of a law forbidding the use of dogs in harness. The result was that the canal boat, which had previously been drawn by a big dog and a woman working together, was left for the woman to pull alone, or by the aid of another woman.

And yet, a woman may be a queen. We had the honor to arrive in this city from Vienna by the same train with a real live queen, the sovereign of Servia, a woman who only differs from her toiling sisters through the influence of circumstances. We imagine, however, that the difference is even more superficial than it appears. Queens are generally of little more account than the fifth wheel to a coach, except on *fete* days.

Europe is a good field for our woman's rights reformers to begin operations in. They would find a text on every street corner.

A NEW FACT ABOUT HONEY.

WE have at last found the solution of a problem which has puzzled us for years. Some twenty years ago our inquisitiveness led us to try the effects of a dose of the poison of the honey-bee contained in the little sac connected with the sting, from which it is ejected during the act of stinging. Although the quantity was but a fraction of a drop, the effect was almost immediate, producing slight giddiness and nausea, and a dull headache, which lasted several hours. Ever since, we have been unable to eat honey, though always fond of it, on account of a recurrence of the same symptoms, in less degree, almost immediately after tasting the honey.

We have also observed somewhat similar effects in other persons, as also a peculiar eruption in some instances, similar to, if not identical with, nettle-rash or hives. Cases of the last-mentioned sort are by no means uncommon. Up to the present time there has been no other explanation of these facts than the vague one of individual idiosyncrasy. We believe that we have found the true explanation, however, in a fact recently brought out by a scientific journal, that bees employ the same virus which they eject from their poison sac in stinging, not only for the purpose of inflicting injury, but for the purpose of preventing the fermentation of their honey. It has long been observed that honey made by excitable or rancorous swarms has a stronger, sharper taste and odor than usual. This is explained by the fact that when excited, bees run out their stings, and eject a tiny drop of the poison. This is mingled with the honey; and if the excitement is very frequent, of course the quantity may be considerable.

The essential element of bee-poison is formic acid; and chemical analysis shows that it is always present in honey, though in varying amounts, which agrees with the facts observed.

Here, then, is the explanation of the difficulty. All honey contains a powerful poison, in minute quantity, it is true, but sufficient to affect sensitive persons. On this account it is not to be recommended as a wholesome article of food. There are other forms of sugar much more wholesome, although all saccharine foods should be employed with great moderation. In the case of honey, we say, the less the better.

ALCOHOL IN MEDICINE.

AN anti-temperance journal is jubilant because somebody reports that some observations have been made at a hospital in Australia, which seem to prove that alcohol is essential as a remedial agent. It seems that "A," an honorary surgeon, had 422 patients, to whom he issued 471 pints of brandy, 83 bottles of champagne, and 900 bottles of ale and porter; and only about 7½ per cent of his patients died. "D," on the other hand, had 333 patients, to whom he gave 271 pints of brandy, 2 bottles of champagne, and 92 bottles of ale and porter; and the deaths amounted to about 10 per cent. Similar results are shown in the medical cases. "F" had 600 patients, and the stimulants he ordered for them included 467 pints of brandy, and 52 bottles of ale and porter. He lost 18 per cent of his patients; while "E," with 506 patients, who only issued 110 pints of brandy and one bottle of ale, lost 24 per cent of those under his charge.

It is observed that the surgeon who gave the most alcohol lost the smallest proportion of cases, while the one who gave least, lost the most, and the others in inverse ratio to the amount of alcohol given; and the conclusion is drawn that the alcohol was the cause of the favorable result in the cases of "A," and its insuffi-

cient use the cause of the unfavorable result in the cases of "E."

How any rational person could attempt to draw a conclusion from such data is a mystery. The argument is exactly the same as that by which the ancient Grecians used to prove that the thunder was the voice of Jove, and the modern archæologist proved that a petrified salamander found in the Mediterranean was Noah's baby, that fell out of the ark. It would seem that all the patients were plentifully supplied with alcohol, and that they did not do equally well may have been attributable to any one of a number of causes. Nothing is said of the nature of the cases, nor of the nature of the treatment employed. It is no uncommon thing to notice quite as great differences in mortality as that reported in the practice of different surgeons, in consequence of a difference in the character of the cases or of the methods of treatment employed, or in the skill of the surgeon. If alcohol is proven to be a *sine qua non* in the materia medica, it must be by more substantial arguments than this.

FLOWERS IN SLEEPING-ROOMS.

MANY peculiar notions have prevailed among the laity respecting the influence of flowers, some of which have been characterized by superstition almost amounting to belief in witchcraft. Most of these notions are without the slightest foundation. It has been noticed, however, by persons sleeping with many flowers in their bedroom, that they frequently awaken in the morning with a slight headache, and enervated, their sleep having been uneasy and unrefreshing. Dr. Reklam, an English physician, thinks these results "do not arise from any special properties of the flowers themselves. He maintains that this effect is analogous to that produced on the eyes and ears by excessive light and by loud sounds, being, in fact, caused by a continued strain on the olfactory nerves. More or less similar

consequences arise, it is remarked, from a bright light being kept burning in a bedroom, or from the noise of the wind and vehicles passing by, the brain being disturbed from its wonted rest by these external influences. The moderate use of perfumes, it is argued, cannot be regarded as injurious. In fact, the suggestion is made that the sense of smell is usually less exercised than it might be, the instance being quoted of the comparatively limited number of experts in distinguishing perfumes."

A CHEMICAL FOOD PRESERVATIVE.

For many years chemists and others have sought in vain for some compound which possessed the property of preserving food substances without injuring them as foods. The long-sought article seems to have been found at last in a new compound known as boro-glyceride. The compound is made by simply dissolving boracic acid in glycerine by the aid of heat. About three parts of glycerine and two of boracic acid are the proportions required. The boro-glyceride is dissolved in fifty parts, by weight, of water, and is then ready for use. The discoverer claims to have preserved fish, eggs, meat, and various other foods for more than three months by simply immersing them in the solution, which may be used repeatedly, as it is not absorbed by the food substances immersed in it. We cannot as yet speak from experience, but we believe this is a safe preservative agent, at least for such foods as eggs and butter, and perhaps for some perishable fruits and vegetables. We shall experiment with the article this summer, and report the result.

ANOTHER ADULTERANT OF SUGAR.

The profit of sugar manufacturing is considerably diminished by the large quantity of saccharine matter which remains uncrystallizable in the form of molasses. Some years ago, the discovery was made that by certain chemical pro-

cesses, in which the metal strontia plays the chief part, the greater part of this sugar could be secured in a crystalline form. This led to the establishment of factories for the purpose of utilizing the process, and now large quantities of sugar are made in this way. The strontia is first combined with the sugar chemically, and is afterward separated. If the separation is complete, no great objection could be urged to the method; but there is always the liability of failure through the carelessness of workmen and otherwise; and in the practical working of the process it is found that there is a loss of six or eight tons of strontia to every fifty tons of sugar produced, some of which is undoubtedly to be found in the sugar sent to consumers for use as food.

The present prospect is that but a few years will elapse before it will be necessary for the consumers of sugar to keep on hand a chemical outfit for testing every sample purchased before running the risk of making a chemical laboratory of the stomach.

POISONOUS MAPLE SIRUP.

The common practice of using galvanized iron pans for boiling maple sirup is by no means so free from danger as has been supposed. At the last meeting of the Ohio Mechanic's Institute, a paper was read by a chemist in which a case was cited which clearly proves the dangerous character of zinc when used for such a purpose. As is well known, galvanized iron is simply sheet-iron covered with zinc. If the sap is perfectly sweet, it will corrode the zinc but little; but if it has become a little sour by standing too long before being boiled a very considerable amount of zinc may be dissolved, in one reported case amounting to nearly an ounce of zinc sulphate to the gallon of sirup. This is the cause of the metallic taste which many persons who use maple sirup freely must have frequently noticed. A considerable quantity may be present, however, without being detected by the

taste. Until some better means of condensing the sap is found and adopted than the galvanized iron vessels now in use, we would advise those who are particular as to the quality of what goes into their stomachs to avoid the use of maple sirup unless they know that it is not contaminated with zinc.

ADULTERATED TOO MANY TIMES.

A story is told of an Illinois man who purchased large quantities of baking powder of a Chicago firm, in bulk, and who called at the office of the dealers the other day complaining that there was something wrong with the article.

"I don't think so," was the reply; "we make the best article sold in the West." "I think we ought to have a more perfect understanding," continued the dealer. "Now, then, you adulterate before you send to me, then I adulterate before I ship, then the retailer adulterates before he sells, and the consumer can't be blamed for growling. I wanted to see if we couldn't agree on some schedule to be followed." "What do you mean?" "Why, suppose you put in in 10 per cent of chalk, then I put in 20 per cent of whitening, then the retailer puts in 30 per cent of flour; that gives the consumer 40 per cent of baking-powder, and unless he's a born hog he'll be perfectly satisfied. You see, if you adulterate 50 per cent on the start, and I adulterate as much more, and the retailer adulterates as much as both together, it's mighty hard for the consumer to tell whether he's investing in baking-powder or putty; we must give him something for his money, if it's only chalk."

The above may not have been an actual transaction, but we have examined a few samples of baking-powder which might have been through exactly the process described without being made much worse than they were.

Tobacco among Soldiers.—A French army surgeon, Dr. Blanchet, asserts that

"constant association with the soldier, and inquiries into the effects of smoking, have taught him that the illness of many men is to be traced to the use of tobacco alone. Ulcers on the lips, in the mouth, on the tongue, in the nose, and necrosis of the maxillary bones, are not uncommon results of its use. Others suffer frightfully from gastralgia, gastritis, and enteritis; others from vertigo, mental debility, and even transient attacks of mania."

If tobacco will do so much damage to soldiers, why will it not exert the same baneful influence upon others?

FAULTY DWELLINGS.

DR. WILLARD PARKER, one of the most eminent of the numerous medical savants of New York City, recently uttered the following respecting modern human dwellings:—

"We are living in the wrong kind of buildings, and everything is wrong. Previous to the introduction of Croton water into this city, I don't remember a single case of diphtheria. There were numerous cases of croup, and some which resembled diphtheria, now and then. It is a disease which depends on malaria, or bad air. It attacks families, and goes through all the members. I had a friend, a physician, who depended on his cellar for all the air for his furnace. His six children were all stricken with the disease, and all of them died. And there are cases of that description everywhere. I say that if we have diphtheria, there is something wrong about our sewers. *If I were to build a house, I would not have it connected in any way with a sewer.* I should construct a sort of annex, where I should have all the sewers, closets, and all the pipes of the house. I suppose most of you would object to having a vault filled with dead bodies a few yards from your house and connected with it by a pipe. Yet this is practically what we do with our sewers. Water is no protection from them—from the germs of poi-

son which generate and live in the foul air. This matter demands our most earnest attention, for we are in a very critical and unhealthy condition."

Old Potatoes.—At this season of the year, those who eat potatoes must be content either with those which are old, or new ones which are unripe, at least in most parts of the United States. It ought to be known and remembered, just at this time, that both old and unripe potatoes contain a poisonous substance known as *solanine*. Potatoes which have begun to sprout are certain to contain a quantity of this poison, and hence should be avoided, unless very great care is taken to remove the sprouts very perfectly, and then they are better buried than eaten.

Cotton-Seed Oil.—The annual crop of cotton seed is estimated at about 3,000,000 tons, from which may be made an oil nearly equal in practical value to olive oil, for the adulteration of which large quantities have been annually shipped to France and Italy for many years. This oil is now coming into quite extensive use, and we think it is in many respects decidedly superior to lard and tallow.

Poisonous Stockings.—It is reported that many of the colors in the new styles of colored hose are poisonous, the greens being almost certain to be of a dangerous character. The usual symptoms first noticed are swelling of the feet and irritation of the skin of the parts in contact with the stocking. Black, red, and brown are safe colors, and on this account should be selected in preference to others. It is probable there are many more cases of poisoning from this source than are discovered, the difficulty being attributed to some other cause.

Experiments on the Olfactory Sense.—Some curious Frenchmen have been making experiments for the purpose of ascertaining the degree of acuteness of

the sense of smell in relation to different odorous substances. It was ascertained that the odor of ammonia is perceived in about one-third of a second, camphor and asafetida being recognized in one-half a second, and other substances at not very widely differing periods of time. The reporter does not state whether the observers were habitual users of tobacco or not. This is an important fact which ought to have been mentioned in this connection, as it is well known that the acuteness of smell in tobacco-smokers is greatly diminished, as well as the sense of taste. We had a patient some time since who, we think, could smell asafetida in much less time than one-half a second.

Respect for Animal Life in India.—Most of our readers are doubtless acquainted with the fact that the East Indian is noted for his respect for animal life, which grows out of his religion, and results in his being practically a vegetarian. Very few are aware, however, of the extreme extent to which this regard for living animals is carried, but which is well pictured by a recent correspondent who asserts that, "in a mill it is a common thing to see the operatives picking vermin from their clothes, and carefully putting them on the floor to prevent them from being hurt, as it is a violation of their religious principles to take life."

A New Disease.—It is recently reported that a disease of a very peculiar nature has made its appearance in New South Wales. Persons affected with it exhibit symptoms very similar to those of hydrophobia. The malady is attributed to the use of the flesh of sheep infected with parasites.

Vegetarianism and Gout.—An old English doctor reports that he has never been successful in the treatment of gout, except in cases in which he required total abstinence from animal food as well as from wine.

—A physician in Hamilton Co., N. Y., employs carrier-pigeons to send home prescriptions, and to bring him reports of the progress of his patients.

—The town of Lenox, in Massachusetts, some time ago brought suit against a wealthy company who by constructing a dam had converted a previously healthy district into a hot-bed of malaria. We shall await the result of the suit with interest.

—A medical curiosity, now on exhibition in Paris, is a man, twenty-one years of age, who stands seven feet and ten inches high, having grown one foot and seven inches in less than two years. His feet measure twenty-four inches in length.

—It is stated by a contemporary that during the excitement in France about American pork affected with trichinae, before its importation was stopped, bells were rung in the various cities to warn the people against its use. Would it not be a good plan to ring the bells of every church in this country against the poisonous French wines and other liquors, of which such vast quantities are consumed in this country annually, and which destroy many times as many lives as do the trichinae?

For the Sick Room.

—Beef tea has long been recommended as the best food for the sick; but it is in fact one of the poorest of foods. It contains little nourishment, being chiefly a solution of waste or effete matters, and in most cases may well be replaced by thin gruels or fruit juices.

Cure for Hang-Nails.—A medical contemporary proposes carbolic acid as a remedy for this very troublesome and inconvenient affection. The melted acid is allowed to run in between the nail and the irritated flesh. The anæsthetic property of the acid causes the pain to cease at once, and it is claimed that a speedy cure is effected.

How to Cure Corns.—There are multitudes of corn cures, some of which are supposed to operate by some mysterious magical agency, and others by chemical action upon the corn. The latter are the only ones to be depended upon. The following is a simple and effective remedy, known as the "Algerian corn cure:"—

Acetic acid	1 ounce.
Iodine	37 grains.
Alcohol	1 ounce.

Dissolve the iodine in the alcohol, and add the acetic acid. A few drops of the liquid are to be rubbed on the corn morning and evening, so as to gradually dissolve it.

The same remedy will be found effectual for removing warts, if applied daily for a week or two.

Hot Water as a Remedy for Nausea.

Dr. Morton, writing in the *Louisville Medical News*, states that "several years ago he learned from his own personal experience that no agent relieves nausea and vomiting so satisfactorily and promptly as water as hot as can be drank. He has since used it in a large number of cases, and no remedy that he ever administered in any condition has proved more uniformly reliable. He has preserved records of many of these cases, and makes the following classification: 1. Cases in which nausea and vomiting occurred at the onset or during the course of acute febrile disease; 2. Cases in which these symptoms were caused by overloading the stomach when its functions had been impaired by protracted disease; 3. Cases in which they were produced by nauseous medicines (not emetics) at the time they were taken; 4. Cases of acute gastritis caused by the indigestion of irritants; 5. Cases in which these symptoms were purely reflex; 6. Cases of chronic gastritis; 7. Cases of colic in newly born infants; 8. Cases of flatulent distention of the stomach in adults."

We have used hot water in similar cases for the past ten years with most excellent success, and can recommend it as one of the best known means for the purpose. It should be borne in mind, however, that the water must be *hot*. Warm water increases the nausea. The hot water will often accomplish the desired result, even when the nausea is the result of indigested food in the stomach, affording relief by causing contraction of the stomach, so that its contents are expelled, either by vomiting or into the intestines.

Publishers' Page.

☞ Almost every mail brings a letter asking, "When are you coming home?" By the time this reaches our readers, we shall be on the way, and Providence permitting, shall reach home in season to see the next number of the journal go to press.

☞ We edit this number of GOOD HEALTH from Vienna, the capital of Austria, and the great medical center of the world. Here are found some of the greatest of living surgeons and physicians, among others the eminent Prof. Bilboth, who has several times successfully performed the seemingly impossible feat of removing malignant and other morbid growths from the stomach. Thus a way of escape has been provided for sufferers from that hitherto most hopeless of human maladies, cancer of the stomach.

Prof. Polltzer, the famous aurist, is also a member of the faculty in this famous university, and we find him one of the most admirable of teachers. Profs. Jaeger and Stellway, the eminent eye specialists, are also here, as well as many other brilliant lights in the medical world too numerous to mention. One of the unique and admirable features of this institution, at least for students, is the plan pursued of not only showing the student how to perform operations and administer treatment to patients, but making him perform operations and administer treatment himself, so that he cannot avoid becoming familiar with practical details so essential to success. We find much of interest here, and are hard at work in the hospitals in various special departments from ten to twelve hours daily. The opportunities are so marvelous that we hope to derive many advantages from our stay here, although it must necessarily be much briefer than we could wish.

☞ Through the kindness of our friend Dr. Pietre-Santé, of Paris, we had the pleasure of attending the annual meeting of the Societe D'Hygiene of France, of which the Doctor was the founder and is the secretary and most active member. Several hundred members were present at the annual banquet, many of whom we had the pleasure of meeting personally through the courtesy of Dr. Pietre-Santé, and the venerable Dr. Boggs, an English physician for many years a surgeon in the East Indian army, now a resident of Paris. With the exception of the wine, which is universally used in France, we should not think it necessary to criticise the material elements of the banquet; but we were gratified to note that our wine glass was not the only one that remained empty. At least one member, the presiding officer, and a member of the French Senate, also abstained, quite to our surprise, as we expected to be an isolated example of total abstinence in the large assembly. The toasts were numerous, and were all loudly applauded. We also have to thank Dr. Pietre-Santé for the honor of being made an honorary member of the Society.

The organ of the Society, the *Journal of Hygiene*, has for several years been one of our valued exchanges, and we shall in future take a still greater interest in its perusal.

☞ We had recently the pleasure of a visit with Eld. J. N. Andrews and his co-laborers at Bale, Switzerland. The missionary work in which they are engaged is highly prosperous; but we were deeply pained to find the missionaries nearly worn out with their arduous labors. If we possessed the necessary qualifications, and were free from other obligations, we should have felt like volunteering to join our friends as a raw recruit; for our sympathies were deeply enlisted on seeing their sacrifices of comfort, health, and possibly life, in behalf of their work. We endeavored to do what we could by way of suggesting treatment, though with little hope of benefit without necessary relief from burdens, mental and physical, which we earnestly hope some way may be found to secure.

☞ One of our esteemed exchanges has the goodness to give its readers the following appreciative notice of our journal:—

"In these days when the number and nature of diseases that afflict human kind seems greatly increased and complicated, there is great need of reliable information to properly educate people as to how to get well when sick, and how to avoid being sick. In these respects GOOD HEALTH, published monthly at Battle Creek, Mich., fills the bill in better style than any other publication we know of. Scarcely ever do we get a number that is not worth the entire year's subscription."

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