THE

HEALTH REFORMER.

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

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History of Water Cure.

THE utility of water as an agent in the treatment of disease is not a modern discovery, as the pretensions of some aspirants for notoriety have led many to believe. A very cursory glance at the history of various ancient nations furnishes sufficient evidence that the use of the bath as a curative agent was of very remote origin. The works of the oldest medical authors contain numerous references to the bath, recommendations of its use in cases of disease, and testimonials of its good effects when properly employed. As this is a matter of some interest to many of those who employ and advocate the use of water as a remedial agent, as well as to those who are investigating its merits, we shall devote a little space to a sketch of the use and estimation of the bath by various nations and tribes —civilized and barbarous—and regular and irregular physcians, from the remote ages of antiquity down to modern times. For several of the facts presented, we are indebted to a valuable work by Dr. Bell, long out of print and now somewhat rare.

The Bath in Egypt.—That bathing was practiced to a considerable extent by the Egyptians at a very early period, is evinced by both sacred and profane history. It was through obedience to this custom that Moses was discovered among the rushes by Pharaoh's daughter as she went down to the river side to bathe. Pictures discovered in ancient Egyptian tombs represent persons preparing for the bath. We have no expression of the estimate which was placed upon the bath as a remedial agent; but it is hardly possible to believe that an agent held in such high esteem as a preventive of disease should not be valued as a useful remedy.

Bathing among the Jews.—The code of laws prepared by Moses, under divine instruction, for the government of the Hebrew nation after its departure from Egypt, made bathing a prominent feature. The connection of the bath with the treatment of leprosy would naturally lead to the conclusion that it was employed for its curative effects.

Persian Baths.—The ancient Persians held the bath in such high esteem that they erected magnificent public structures devoted to bathing. The baths of Darius are spoken of as especially remarkable.

The Bath among the Greeks.—The cold bath was employed among the Greeks. Lycurgus, the famous Spartan legislator, prescribed its daily use by all his subjects, not excepting the tenderest infants. In later times, the warm bath was introduced, and stately buildings were erected for the accommodation of bathers.

The learned Greek, Hippocrates, the father of medical literature, and a very acute observer of disease and the effects of various agents upon the body, highly recommended the use of water in many diseases, describing with great care the proper mode of administering a simple bath. He laid great stress upon the careful and skillful use of the bath, asserting that, when improperly applied, it, "instead of doing good, may rather prove injurious." His directions for the employment of the bath were very discreet. He very wisely remarks that those patients whose symptoms are such as would be benefited by bathing should be bathed, even though some of the requisite conveniences may be wanting; while those whose symptoms do not indicate the need of this remedy, should not employ it, though all the necessary appliances are at hand. He made great use of water as a beverage in treating disease.

Roman Baths.—The Romans excelled all other nations in the sumptuousness of their bathing arrangements. Their public baths were among their greatest works of architecture, and were supplied with every convenience for increasing the utility and luxury of the bath. Kings and emperors vied with each other in perfecting and enlarging these sanitary institutions. Accommodations were

provided, in some cases, for nearly 20,000 bathers, employing the baths simultaneously; and at one time the number of public baths in Rome was nearly one thousand. Even Nero, whose name has come down to us covered with infamy, has the credit of doing at least one good act in erecting a magnificent public bath, though even the detergent effects of such an act can hardly cleanse his character of the many foul blots by which it is rendered odious.

Celsus and Galen, two noted Latin physicians, extolled the bath as an invaluable remedy almost two thousand years ago. The latter pronounced the bath to be one of the essential features of a system of perfect cure which he termed apotheraphia, exercise and friction being the other essentials. If the regular physicians of half a century ago had followed the practice of Galen, as described in his works, they would have refreshed their languishing fever patients with cold water as a beverage instead of leaving them to be consumed by the pent-up fires which parched their lips, disorganized their blood, and finally ended their sufferings with their lives. Celsus was proud to boast of employing the bath more frequently and systematically than others had done before his time.

The Emperor Augustus was cured, by the bath, of a disease which had baffled all other remedies.

Testimony of Arabian Physicians.—Although the Arabians are at the present day looked upon, and justly, as a horde of wandering wild-men, a thousand years ago their physicians were among the most learned of the age; and they were as sensible as learned, we judge, for they were most enthusiastic advocates of the efficiency of the bath. Rhazes, one of the most eminent of them, describes a plan of treating small-pox and measles which would scarcely be modified by the most zealous advocate of water treatment at the present day. Avicenna and Meshnes, with others, may be mentioned as holding similar views.

The bath was much used in pestilences, by this nation, and was largely employed in Constantinople in the fifteenth century.

Modern Bathing Customs.—Three centuries ago, public vapor baths were very numerous in Paris, being connected with barber shops, as are many baths in this country at the present time. According to Dr. Bell, Paris can still boast of a great number of bathing establishments. He states that in the various baths connected with the city hospitals nearly 130,000 baths were administered in a single year to out-door patients. Doubtless those treated in the hospitals were duly washed and steamed as well. This is certainly a very marked contrast with what we see in the hospitals of this country at the present day. Notwithstanding the advances in many other particulars of hospital management, the cuticles of patients are sadly neglected. In some of our large hospitals, the filthiness of many patients is so great that close proximity to them is absolutely intolerable. Half a dozen of them, placed in a warm room, speedily impart to the air a fetor unequaled by anything but the effluvia arising from a neglected pigsty. Such neglect is inexcusable.

The Germans of olden time were very fond of bathing, according to their historical records, and during the Middle Ages, when plagued by the leprosy, the national faith in the virtues of the bath was manifested by making it a religious duty. It is related of Charlemagne that he used to hold his court in a huge warm bath. Modern Teutons seem less partial to the bath, having transferred their fondness from *aqua pura* to lager beer.

Although the bath was very freely used in England while the island was occupied by the Romans, who erected commodious baths like those in Rome, the wholesome practice is now sadly neglected by the English people, if we may credit their own writers.

It is a curious fact that the bath seems to be quite generally neglected by the most civilized races, while it is almost universally employed by those less advanced nations, the Russians, Turks, Finlanders, and the inhabitants of Persia, Egypt, Barbary, and Hindostan. The Finlanders make great use of the sweating bath. To nearly every house is attached a small sweat-house, where they subject themselves to a temperature of more than 160° F., often emerging at once into an atmosphere much below freezing, with apparent impunity. The Turkish and Russian baths, similar to which are those in use in Egypt and India, are elsewhere described.

The North American Indians employ the bath for many diseases. They have original and peculiar ways of administering both water and vapor baths. The most common bath among them is the vapor, followed by a plunge into a neighboring stream. They generate the steam by pouring water upon hot stones while they are inclosed in a small, close hut made of mud or skins. The native Mexicans secure a hot-air bath by confining themselves in a brick sweat-house which is heated by a furnace outside. These savages seem to have the most implicit confidence in the efficacy of the bath, always employing it when ill, and with excellent success.

Modern Medical Use of Water.—In the early part of the eighteenth century, a Sicilian named Fra Bernado acquired the title of "cold-

water doctor" from his exclusive use of cold water in treating the sick.

At the very beginning of the eighteenth century, Floyer published a history of bathing which contains accounts of many remarkable cures effected by means of the bath, which he recommended as a most efficient cure for numerous diseases.

A Mr. Hancock, a clergyman, published in 1722 a tract entitled, "Common Water the Best Cure of Fevers." Another writer, in a work entitled, "The Curiosities of Common Water," published in 1723, speaks of water as an "excellent remedy which will perform cures with very little trouble, and without any charge," and "may be truly styled, an universal remedy." Both French and German writers were zealously advocating the use of water as a remedy for many diseases at this same period. Many of the French surgeons had also discovered the immense utility of water in surgery, receiving their first lessons of instruction from an ignorant and superstitious miller, who used water in conjunction with charms.

In the latter part of the last century, Drs. Jackson and Currie each published reports of cases of fever in which they had found the use of the bath a remedy of remarkable efficacy. Dr. Currie obtained many followers for a time, but no very deep impression was made upon the public mind, though his cases were authentic, and were very ably reported.

About the end of the first quarter of the present century, a native of Græfenberg, Prussia, by the name of Priessnitz, met with an accident by which three of his ribs were broken. He treated himself by applications of cold water, and then tried the same remedy upon others in similar cases. His success encouraged him to make further experiments, and though an ignorant peasant, his natural acuteness enabled him to devise various means for applying water to the body, and to suit the application to different diseases. His increasing success attracted numerous patients, and his fame became, in a few years, world-wide. Many of his methods were very rude, and his ignorance of medical science often led him into errors; but he succeeded in restoring to health hundreds of patients whose maladies had been pronounced incurable.

The interest in the new method became so great that numerous other individuals, equally ignorant and possessing less shrewdness, undertook to imitate the German innovator. Some of them were successful, many of them were not; all were alike in committing numerous blunders through ignorance of scientific medicine. But the public attention was called to the utility of water as a remedial agent so forcibly that a powerful impression was produced in its favor. From that time until the present, the use of water has been largely in the hands of unscientific empirics who have advocated it as a specific, and employed it to the exclusion of other remedies in a large measure. This course, together with many other gross errors connected with the practice, has deterred scientific physicians from employing it sufficiently to test its merits, only in a few exceptional instances.

The friends of Priessnitz claimed for him a great discovery; but as we have seen, he discovered nothing which was not known a century before, if not, indeed, some thousands of years previous. It is doing Priessnitz no injustice to say that he did little or nothing toward establishing principles, but followed, chiefly, a routine method of practice.

Some scientific members of the medical profession have investigated the subject in some degree, however, at various times, and the result has been that at the present day the utility of water is a well-recognized fact, and it is now often prescribed in the standard text-books as an excellent remedy for many diseased conditions. Yet, that there is still a want of appreciation of the remedy is fully attested by the infrequency of its use by the regular profession. This neglect may be due in part to the prejudice which most members of the profession have acquired on account of the quackery which has too often been connected with the use of this remedy. Nevertheless, there is no good reason why an efficient remedial agent should be suffered to receive the stigma which properly attaches only to those who are responsible for its abuse.

Tobacco a Foe to Health and Morals.

A CORRESPONDENT requests the publication of the following article, which was first published in a prominent New York journal:—

TESTIMONY OF SCIENCE.

The following paper has been prepared, with the revision of scientific physicians of this city, under the impelling motive that indulgence in alcoholic liquors, tobacco, and opium, is surely undermining the physical stamina, and depraving the intellectual and moral strength, of our countrymen, and that some measures of instruction and reform ought to be inaugurated to save young men and children, at least, from the use of tobacco.

PROPERTIES OF TOBACCO.

The U. S. Dispensatory teaches that tobacco of commerce is the dried leaves of a plant

of strong, stupefying, penetrating odor, and of bitter, nauseous, acrid taste. Its essential element, called nicotine, is a virulent, alkaline poison. Taken moderately into the system, tobacco for a little while quiets restlessness, soothes pain, and is a craved stimulant to persons overworked in brain or body. Taken in large quantities, it causes dizziness of the head, stupor, faintness, nausea, and general depression of the nervous and circulatory functions. Excessive use of tobacco eventuates in paralysis, prostration, and death.

The quarterly *Journal of Science*, quoted in the *Popular Monthly* of December, 1872, instructs us that "nicotine, the essential principle of tobacco, is so deadly an alkaloid that what is contained in one cigar, if extracted and administrated in a pure state, would cause certain death. Tobacco belongs to the narcotic and exciting substances which have no food value. Its stimulating adds no vital force, but abstracts, or takes away. It involves the narcotic paralysis of a portion of the functions whose activity is essential to healthy life. Let it be clearly understood that the temporary stimulus and soothing power of tobacco are gained by destroying vital force, and that the drug contains absolutely nothing of use to the tissues of the body. Nor is the poison easily expelled from the system; it lingers years after persons have ceased to use the weed; indeed, nicotine has been detected in the tissues of the lungs and liver after death."

Says Dr. Burt, in his "Materia Medica," p. 118, "Tobacco acts especially on the cerebro-spinal centers, particularly affecting the medulla oblongata, and pneumo-gastric nerve. The motor nerves that preside over the muscular system are by it completely paralyzed. In fact, nicotine, the active principle of tobacco, produces the most profound and complete relaxation of the muscular system of any poison we possess."

MONEY COST.

There are above six hundred dealers in preparations of tobacco in Syracuse, as we learn at the Internal Revenue Office, and seventy-five manufacturers of cigars, employing from a half-dozen hands up to near two hundred workmen each. At the least, two thousand persons here seek a living by the manipulation and sale of this poisonous and filthy weed. No doubt, more than half a million of dollars are annually wasted in this city among smokers and chewers, half of it all coming from the laboring poor, whose scanty earnings many spend for tobacco and whisky, and then cast their families upon public charity for bread.

The Internal Revenue Tax on tobacco in 1875, for the State of New York, was $7,633,-351. And the whole yearly cost of this indulgence to the people of this commonwealth can hardly be less than forty millions of dollars. The tremendous drains and losses, by liquor-drinking and smoking, render mournfully sure continued business embarrassments among us, increased pauperism, and heavier taxes.

EFFECTS ON HEALTH AND LIFE.

We have not space to dwell upon the associations and influences of tobacco; of its gatherings of idleness at saloons; of its tendencies to seduce youth from home, into unwholesome midnight scenes; of its well-known agency in leading to intemperance; of its unfitting the mind for religious thought or worship. These considerations might well be taken into account.

But some persons are ready to say, "Tobacco cannot be poison as the books allege, since we know numbers who smoke and chew during long life, and do not seem to themselves injured." To this we reply: "Many of these same objectors, in after years, have nervous trembling, palpitation of the heart, or other brief illnesses; sometimes chronic and very serious ailments which they are astonished to learn, from medical counsel, have been chiefly caused by tobacco." Facts of this sort are common. It is true, also, that men of heavy, plethoric habit, such as live very plainly, often perspiring from hard work in open air, do not so soon nor so severely suffer as others. Tobacco probably injures native-born Americans worse than the Germans, those of nervous temperament and sedentary life, soonest and most fearfully.

There is a wonderful power in the human system to neutralize and to eliminate the poison of drugs and drinks. Some can take opium for years with apparent impunity. The Hungarians eat arsenic daily, and, as they think, without harm. But it is, nevertheless, sure as fate that all these stimulants and narcotics sooner or later derange and deprave the organism, and strike at the life.

Medical authorities agree in teaching:—

1. That one of the immediately noticeable effects of smoking is partial paralysis of the nerves distributed to the heart, whence comes hurried and enfeebled action of that organ. This induces palpitation, and not seldom is a first cause of those organic derangements ending in fatal heart disease.

2. Vertigo, or dizziness of the head (produced by irregular supply of arterial blood in the brain, which the laboring heart intermit-

tingly furnishes), is a common result of the free use of tobacco.

3. Injury of the iris and nervous tissues of the eye, is another result. An eminent English physician states that out of thirty-seven patients suffering from amaurosis (loss of sight by palsy of the optic nerve), twenty-three were inveterate smokers.

CRAVING APPETITE.

4. One of the really fearful results of tobacco is its creating an intensely craving, morbid appetite. Like indulgence in alcoholic drinks, and opium, the habits of smoking and chewing produce intolerably gnawing sensations of want, and so deaden the moral powers that victims are held as in a vice. Most of those who have long indulged, will at times acknowledge that tobacco injures them; that it is a wasteful expense, and unclean habit; that they often wish it had never been acquired. But they are so conscious that reformation must be preceded by days and perhaps weeks of suffering, that they have no courage to attempt to break off. From this degrading slavery young men and boys can yet be saved.

5. Dr. Stone, of Troy, declares that tobacco is the true cause of a large number of fatal cases of heart disease. To this, Dr. Warren, of Boston, agrees, and adds that excessive smoking is known to produce cancerous affections of the tongue and lip.

6. Dr. Willard Parker, of New York City, says: "It is now many years since my attention was called to the insidious, but positively destructive, effects of tobacco on the human system. I have seen a great deal of its influence upon those who use it and work in it. Cigar and snuff manufacturers have come under my care in hospitals and in private practice, and such persons can never recover soon and in a healthy manner, from cases of injury or fever. They are more apt to die in epidemics, and more prone to apoplexy and paralysis. The same is true also of those who chew or smoke."

EFFECTS TRANSMITTED.

7. Perhaps the worst thing to be said of tobacco is the medical testimony which follows: "The parent whose blood and secretions are saturated with tobacco, and whose brain and nervous system are semi-narcotized by it, must transmit to his child elements of a distempered body and erratic mind; a deranged condition of organic atoms, which elevates the animalism of future being, at the expense of the moral and intellectual nature." And here is the law of organic transmission or hereditary penalty (Exodus 20:4, 5, 6,) by which innocent ones are made sufferers, from the drinking, smoking, debauched habits of their parents, sometimes to the third and fourth generations.

Will Hygienic Education Create an Aristocracy?

BY W. T. CURRIE, A. M., M. D.

Do we want an aristocracy in this country? Some say, Yes; while most of the people say, No. The various schools of the country gain scholars from those who hold one opinion or the other, according as these schools are supposed to use their influence for or against the creation and support of an aristocracy. Most people in this country denounce an aristocracy; and the great cry is, educate all alike, and erase all distinctions of society. Now, hygienic education, being a new thing, must be compelled to endure the sharpest criticism as to its tendency, and the results it will produce. In the popular mind, probably, this question of an aristocracy will be applied as a touchstone, to try this new method of education. So we may as well come to it at once, and tell people exactly what we think.

For my part, I am of the opinion that it will produce an aristocracy, and this is one of the main reasons why I advocate it. Doubtless, at this some readers will look wild. But before we fall out with each other, let us see if we do not think in about the same way. Is an aristocracy really to be dreaded? I think not, and, still further, believe that the great need of this country now, is a genuine aristocracy. For this reason, I am doing my utmost to create one.

What is an aristocracy? It is a class raised above the mass of the people by the possession of some quality or qualities which others do not possess. Thus we have aristocracies of birth, of wealth, of education, and so on until the end of the catalogue.

The possession of these qualities separates the possessors from other people, and by a natural affinity joins them in a society and companionship among themselves. This is what we call an aristocracy.

Now, while we admit that aristocracy has been a great evil, especially aristocracy of birth, we still hold that it might be one of the greatest means of blessing to the human family; and such we are confident will be that which will be created by hygienic education.

Hygienists all believe that, by a certain method of living, they can come into the possession of greater physical, intellectual, and

spiritual power and activity, while the time and money saved by the abandonment of superfluous luxuries will give them greater wealth, and more abundant means for the development of every God-given faculty. Thus, true hygienists will gradually come into the possession of both worldly goods and personal endowments which will separate them from the mass of mankind, form them into a class, by a natural law of affinity, and make them an aristocracy. Then, again, as all personal qualities become hereditary when the possessor lives a natural life, and as wealth is transmitted when it is not wasted in riotous living, we cannot but conclude that hygienists will become an hereditary aristocracy.

Now, again, as the object of hygienic education is to teach the great laws of hygiene, and produce a class who shall live by these laws, we accept it, without reserve, that an aristocracy will inevitably be the result.

Will this be an evil in our country? No; decidedly no. A class of people living by the laws of hygiene, which are God's laws, cannot be an evil. Neither can it become an evil if the children of these people are like themselves, and thus become an hereditary aristocracy. What makes aristocracy odious is, first, exclusiveness—keeping others from admission to their society; and, secondly, the possession and transmission of bad qualities. An aristocracy such as I have been describing can only be a blessing; for it will cultivate and transmit the most noble qualities, and will always seek to enlarge its numbers by the admission of all who can embrace this glorious system of light and truth.

So, no one need fear that this new system of education will endanger the welfare of our people. It will produce a class, exclusive, of course; but this is precisely what the world needs—a class who are exclusive only by being separated from the vices and defilements of the multitude, and living in harmony with God's laws, and ever seeking to bring others to a knowledge of the truth, and to their own pure living and noble companionship. May God soon give us a numerous aristocracy of this description.

Flannel Clothing.

By far the largest proportion of the people in this country wear woolen flannel next the skin, though there are a few who do not seem to understand or believe in the advantage of wearing it in this way. There are two special reasons why flannel should have preference to all other material for this purpose, in this country, with its variable climate—its sudden changes. During the next few weeks when we shall have cool nights, following warm days, it will be particularly valuable as under-clothing. For equalizing the temperature of the surface, protecting from cold and preventing sudden chills, it cannot be surpassed.

Air is a poor conductor of heat. Owing to the coarseness and porosity of woolen fabrics, they retain within their meshes a large quantity of air; hence, they are bad conductors of heat, and so retain it next the body. This property renders flannel especially valuable in cold weather.

Another most valuable property possessed by flannel is its great capacity for moisture, which it takes up and gives off very slowly. It is well known that linen and cotton will become quite wet, while woolen under the same circumstances will be only damp. For this reason it affords a much better protection against wet than either linen or cotton; and giving off its moisture at a much slower rate, it is much warmer while damp than these fabrics.

A portion of the water absorbed by all clothes is held *between* the fibers, water of *interposition*, and can be wrung out; while the other portion is retained within the fibers, *hygroscopic* water, and can only be removed by evaporation. In its capacity for hygroscopic water, woolen very greatly exceeds either linen or cotton; taking up in proportion to its weight at least double the quantity. Hence the value of this material for wearing next the skin in the warm weather, when the perspirations are most profuse.

Practically, as experienced by the men in the army and navy, as well as theoretically, woolen has been proved to be the most valuable fabric in use for wearing next the skin in all seasons.

On this point Parkes says: "During perspiration the evaporation from the surface of the body is necessary to reduce the heat which is generated by exercise. When the exertion is finished, the evaporation still goes on, often to such an extent as to chill the frame. When dry woolen clothing is put on after exertion, the vapor from the surface of the body is condensed in the wool, and gives out again the large amount of heat which had become latent when the water was vaporized. Therefore, a woolen covering, from this cause alone, at once feels warm when used during sweating. In the case of cotton and linen, the perspiration passes through and evaporates from the external surface without condensation; the loss of heat then continues. These facts make it plain why dry woolen clothes are so useful after exertion."—*Sanitary Journal.*

Alcoholic Medication.

THE medical use of alcohol is the strong fortress into which the moderate drinker runs when hard pressed by the advocates of total abstinence. It has always been a sort of Gibraltar for intemperance. The admission of the medicinal use of alcohol as a stimulant, tonic, conservator or generator of vital force, has been the rotten plank in the temperance platform. It has made the defenses of teetotalism, otherwise impregnable, exceedingly vulnerable. Temperance reformers have kept this part of the subject in the background as much as possible; but moderate drinkers have persisted in making it prominent on every possible occasion, often to the great discomfiture of the advocates of total abstinence for the well, but unlimited indulgence for the sick.

It has become evident to those who have given the matter candid thought, that either the common employment of alcohol as a medicine is a stupendous error, or teetotalism is a fanatical delusion. Which of these positions is the true one? It must certainly be that one which best agrees with facts—scientific facts—and reason.

No other drug is employed so largely in medicine as alcohol. Alcohol is not only prescribed in the form of alcoholic drinks, but, in combination with other drugs, in all tinctures, and many other pharmaceutical preparations. Still greater quantities reach the stomachs of the people through a host of quack remedies, patent medicines, known under various delusive names, as cordials, bitters, tonics, restoratives, etc., etc. But our space is limited, and we must hasten to consider the facts.

MEDICAL PROPERTIES OF ALCOHOL.

According to the classical authors on materia medica, alcohol is a *nervine, stimulant, tonic, narcotic, diaphoretic, diuretic,* and *caustic.* Its varied properties are urged as sufficient apology for its general use, they making it applicable, as is supposed, to almost any actual or imaginary case of disease. If alcohol really possesses such a long list of virtues, it must be a very useful drug indeed. But what is a *nervine? a tonic? a stimulant?* In other words,

WHAT ARE MEDICINAL PROPERTIES?

One would think from the language of the books, giving it a strictly literal interpretation, that drugs are endowed with certain peculiar and characteristic properties which enable them to act upon the body in a peculiar manner. For example, a drug which, when taken into the stomach, is thrown out again, is called an *emetic,* and is spoken of as though it acted upon the stomach. Of course, no one now believes such an absurdity, though the idea may have been held some time in the Dark Ages, and the incorrect expressions then formulated have been handed down to us. But we use them as figures of speech, or tropes, just as we say the sun rises, though we know perfectly well that it does not stir, or that the eye sees, or the hand feels, while well aware that the real seat of sensibility is deep within the skull. The emetic does nothing to the stomach, it does not act, it is only acted upon.

A drug which, when taken into the system, is expelled by the kidneys, is called a *diuretic.* Medical writers understand this fact, but for convenience they speak of the drug as acting upon the kidneys. Possibly there are some unthinking persons who really suppose that sweet spirits of niter or juniper *acts* upon the kidneys; but scientific physicians entertain no such erroneous idea.

A *cathartic* is a drug or poison which is expelled by the intestines. A *diaphoretic* is a drug which occasions an increased activity of the skin, or perspiration, which process is excited for the purpose of expelling the drug.

If we should consider each one of the *properties* of different medicines, we should find that in each case the property (so-called) of a drug is the *manner in which the system acts toward it or upon it.* The words *nervine, stimulant,* etc., as applied to alcohol, are merely terms to indicate how the system behaves toward this drug when it is taken into the body.

A drug which occasions only one kind of action has but one property. A drug which occasions numerous actions or disturbances in the body possesses many properties. Alcohol, when taken into the body, is expelled in a variety of ways, and produces a general disturbance; hence its varied properties. The more general the disturbance which a drug occasions, the more numerous and varied its properties.

In brief, then, the medicinal properties of alcohol, before enumerated, are so many terms for indicating a corresponding number of disturbances or disorders which the drug occasions in the body.

When medical authors say that alcohol *acts* so and so, we must understand them to mean only that the drug *occasions* such an action on the part of the system.

THE PHYSIOLOGICAL EFFECTS OF ALCOHOL.

The term *physiological,* as applied to the effect of alcohol, is really a misnomer. We should prefer to substitute *pathological,* to be strictly scientific, but we will not quarrel

about the term, so long as there can be no misunderstanding about what is meant; we employ it because it is in common use. We will present as briefly as possible an account of the effects which follow the application of alcohol to living tissues.

When applied to plants, says Pereira, a noted medical writer, "alcohol acts as a rapid and fatal poison."

Says the same author, "Leeches immersed in spirit die in two or three minutes." Frogs are affected in the same manner, as well as snakes.

We have seen the heart of a turtle contracting vigorously several hours after removal from the body of the reptile. When placed in alcohol, its contractions cease in less than a minute.

Alcohol causes paralysis when applied directly to the trunk of a nerve. It has the same effect when applied to a ganglion. If a pigeon's brain be exposed by removing a portion of its skull, alcohol may be applied directly to the cerebellum. The effect produced is essentially the same as that which follows the removal of the cerebellum by the knife. The poor pigeon plunges and staggers about like a drunken man, and for precisely the same reason.

If a little alcohol is added to a vessel of water containing live minnows, they will speedily die.

Applied to the skin, and retained by some impervious covering to prevent evaporation, alcohol produces irritation and numbness.

Applied to the mucous membrane of the eye or mouth, still greater irritation is occasioned. When taken into the stomach undiluted, it produces intense irritation, inflammation, and ulceration, as proved by Dr. Beaumont's observations upon Alexis St. Martin.

When mingled with the blood, alcohol destroys the blood corpuscles, increases the proportion of fat from 1–500 to 1–7, in some cases, renders the blood less capable of passing readily through the capillaries, and injures the nutrient elements of the plasma of the blood. When a considerable quantity of alcohol is taken, the distinction between venous and arterial blood is almost destroyed, all of the blood assuming a dark hue. It was thus that the English nobility, through habits of dissipation, became distinguished for their blue blood, which was by them considered an evidence of noble origin.

But alcohol does not remain in the blood. It permeates every tissue, and for some curious reason not yet satisfactorily explained, accumulates in nerve tissue more than in any other, unless it be the liver, which would very naturally receive the most, since alcohol when received by the stomach is carried directly to the liver by the portal vein, as soon as absorption occurs.

The effect of alcohol upon the nerves is to lessen sensibility. A man whose nerves are bathed in alcohol has the acuteness of all his senses somewhat impaired. The degree of impairment depends upon the amount of alcohol present. A large quanity of alcohol destroys sensibility entirely.

We have observed that alcohol is "a rapid and fatal poison to plants;" that it kills leeches, frogs, reptiles, and minnows; that it irritates the skin and mucous membrane, destroys the blood, and paralyzes the nerves. In considering these effects, Prof. Christison, Dr. Pereira, Dr. Taylor, Prof. Orfila, and other authorities of equal note, pronounce it a "*narcotico-acrid* poison."

Says Dr. E. Smith, "It is a poison of the nervous centers."

Says Dr. Edmunds, of England, "There is no great city on our side of the ocean where there are not inquests held upon men who drink a bottle of brandy, and fall down and die just as if you had given them a spoonful of prussic acid. Alcohol is a poison."

Says Dr. Willard Parker, of New York, "By physiological inquiries it has been established that alcohol is a poison."

THE VITAL INSTINCTS TREAT ALCOHOL AS A POISON.

If there should remain the least shadow of a doubt in the mind of any one that alcohol is a poison, it must certainly be removed by considering how the system treats this drug when it is taken into the stomach. At first the mucous membrane becomes congested and throws out a quantity of mucus to protect itself from the alcohol, while the absorbents increase their activity for the purpose of getting the drug out of the stomach as quickly as possible.

Having entered the blood, it is transported at once to the liver, which does its best to extract as much as possible of the poison, though at imminent peril to itself. Very soon the poison-laden blood reaches the heart. This organ also recognizes the drug as something which has no place in the blood and ought to be removed; and, as it cannot directly effect the removal itself, it pumps a little harder at the circulation in order to hurry the impure blood along to those organs which are especially designed to remove impurities. Hence the increased force and frequency of the pulse.

The first of these organs which the hastening blood reaches, is the lungs, and here the volatile poison is sent out in volumes.

Every one knows that the drunkard's breath smells like a beer shop. It is also expelled by the kidneys and the skin, and can be found in the urine and the perspiration. In fact, every excretory organ of the body is engaged in getting rid of this poison.

A food or a friendly substance is not treated in this way. If alcohol is a good thing, it is certainly very much abused by the vital instincts. But the vital instincts are not easily deceived. They recognize food in an entirely different manner. An apple, a potato, milk, or bread, when taken into the body, is utilized. It disappears, and never re-appears as milk, or bread, or apple, or potato. Not so with alcohol. It enters the system alcohol, and leaves it precisely the same as it entered, remaining the same all the way through. Instead of retaining the drug, digesting and assimilating it, the system hurries it out in every possible way. The escaping poison can be detected in the breath for more than twenty-four hours after a small quantity has been taken. It is long retained in the body, and has been distilled from the brains of drunkards thirty-six hours after its reception into the body.

If after eating apples, potatoes, and sundry other articles, the same articles should be found, upon a post-mortem examination, in various portions of the body, apples in the brain, potatoes in the liver, and other articles in other parts, it would be considered as the most indubitable evidence that those articles —apples, potatoes, etc.—were not food, since they were not used or changed in the body. If we found these same articles passing out of the body, we should be led to the same conclusion. This is just the experience with alcohol. The conclusion, then, is unavoidable, that it is not food, but poison, as eminent physicians have declared.

Says Dr. Parker, again, of alcohol, "It is not a food, nor should it be used as a common beverage."

ALL MEDICINES ARE POISONS.

We need not adduce further evidence that alcohol is a poison, for all must admit this point. But, says the advocate of alcoholic medication,—

"All medicines are poisons, and the worst poisons are the most powerful remedies."

We willingly grant that "all medicines are poisons." We have good authority to support us in so doing. Said Prof. A. Clark, of the New York College of Physicians and Surgeons, "All our curative agents are poisons," "every dose diminishes the patient's vitality." Said Prof. St. John, M. D., "All medicines are poisonous." But how does this help the matter? If medicines are poisons, that fact only makes it so much the worse for the drugs and no better for alcohol.—*Temperance Tract.*

The Power of Imagination.—An old lady in Philadelphia, Jefferson County, acquired the habit of using morphia. After using it for relief from the pains of a tumor, no persuasion could induce her to give up the poison. Her family finally united in a deception, substituting carefully prepared potato starch in morphia bottles. At first she thought the supposed drug an inferior article, but her physician, who was in the secret, assured her that it was all right, and she was satisfied. She continued to use the article for fifteen years, and to the day of her death, and could not do without it, never having learned the deception. At one time when she was ill the physician gave her Dover's powders, but she could not rest after taking them until she took her starch morphia.—*Utica Herald.*

Little Women.—Says an eminent physician with reference to the greater disparity in size between men and women in this country than is seen in European countries:—

"This petite size can be accounted for. Nothing to my mind is plainer. Exercise is the great law of development. Our girls have no adequate exercise. Besides, the organs on which growth depends, viz., the lungs, stomach, and liver, are reduced, by the corset, to half the natural size and activity. These two causes, with living in the shade, explain the alarming decrease in the size of the average American woman."

The Foundation of Friendship.—In the matter of friendship, I have observed that disappointment arises chiefly, not from liking our friends too well, or thinking of them too highly, but rather from an over-estimate of their liking for and opinion of us, and that if we guard ourselves with sufficient scrupulousness of care from error in this direction, and can be content and even happy to give more than we receive—can make just comparison of circumstances, and be severely accurate in drawing inferences, and never let self-love blind our eyes—then I think we may manage to get through life with consistency and constancy, unembittered by that misanthropy which springs from revulsion of feeling. The moral is, that if we would build upon a sure foundation of friendship, we must love our friends for their sakes rather than our own.

LITERARY MISCELLANY.

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

FAREWELL TO SUMMER.

BY MARY L. CLOUGH.

SUMMER, thy parting breath is on my cheek;
I hear thy farewell in the wind's low moan;
I trace thy flying feet by stream and glade,
Where my sad footsteps wander all alone.

O Summer! I have loved thee. In its mirth,
Thy breeze hath tossed these tangled locks of hair;
Thy sunshine glinted all its threads with gold,
And bathed these pale cheeks with thy soft, warm air.

And I have thrown me down to rest beneath
The leafy fresco of thy forest bowers;
And gazed into the deep blue vault of sky,
Or watched the bees among thy buds and flowers.

And I have felt my soul drawn forth unto
That mighty God of wind and wave and sky,
Who shouts amid the thunders of the storm,
And whispers in the gentle zephyr's sigh.

Oh! I have felt that Heaven was all too near,
That I could hear the seraphs' song of praise,
And angel footsteps, as on shining stairs,
Were swiftly gliding down the golden rays.

Thy flowers have decked the woody hill and plain,
Thy ruby stars amid the grass have burned;
The stately rose hath blushed, or lily bent
In loveliness where'er my eyes have turned.

I bless thee, Summer; thou hast brought thy bloom
To grace the humble songs thy poet sings;
And if a sweeter strain hath thrilled the lyre,
Thy magic touch hath swept the trembling strings.

My gem-crowned goddess, as thou'r't passing by,
In all the glory of thy bright decay,
I feel that something of life's strength and bloom
Is slowly fading from my heart away.

Farewell, O purple hills and silver stream,
Where now the waaho's flame begins to glow,
And mottled leaves drift down upon the wind,—
Fate beckons me to leave you, and I go.

Soon, soon will come the bleak November gale,
To hurl the glories of the forest down;
And drifting clouds of sleet and snow will make
A burial for the Autumn's gorgeous crown.

And who shall say above what quiet mounds
The Storm-king's breath will hang the snowy wreath?
What eyes so bright, what hearts so buoyant now,
Bound in his grasp will mutely lie beneath?

Farewell, O Summer, we may never more
Thy blossoms on the verdant earth behold;
But God will guide the seasons in their flight,
And love his children though the storm be cold.

IT takes four things to make a thorough gentleman. You must be a gentleman in your principles, a gentleman in your tastes, a gentleman in your person, and a gentleman in your manners. No man who does not combine these qualities can be justly named the true gentleman.

Missionary Work at Home.

BY MRS. E. G. WHITE.

MANY are ever restless and disappointed, seeking for some greater work than that which now occupies them. Some mothers long to engage in missionary labor, while they neglect the simplest duties lying directly in their path. The children are neglected, the home is not made cheerful and happy for the family, scolding and complaining are of frequent occurrence, and the young people grow up feeling that home is the most uninviting of all places. As a consequence, they impatiently look forward to the time when they shall leave it, and it is with little reluctance that they launch out into the great world, unrestrained by home influence, and the tender counsel of the hearth-stone.

The parents, whose aim should have been to bind these young hearts to themselves, and guide them aright, squander their God-given opportunities, are blind to the most important duties of their lives, and vainly aspire to work in the broad missionary field.

As I have marked these unhappy, restless spirits, and deplored their power to shadow the lives of others, the thought would arise: What a fearful deception is upon them! How terrible a mistake they are making!

Some of this class pronounce the faithful Christian mother worldly, as they mark how attentive she is to the wants of her husband and children, how zealous in performing the sweet home duties. They sigh because of her lack of spirituality, thinking the labor wasted that goes to make home a place of comfort and happy rest. Their minds fail to understand how the performance of these humble tasks can satisfy the heart.

Jesus made the lowly paths of human life sacred by his example. For thirty years he was an inhabitant of Nazareth. His life was one of diligent industry. He, the Majesty of Heaven, walked the streets, clad in the simple garb of a common laborer. He toiled up and down the mountain steeps, going to and from his humble work. Angels were not sent to bear him on their pinions up the tiresome ascent, or to lend their strength in performing his lowly task. Yet when he went forth to contribute to the support of the family by his daily toil, he possessed the same

power as when he wrought the miracle of feeding the five thousand hungry souls on the shore of Galilee.

But he did not employ his divine power to lessen his burdens or lighten his toil. He had taken upon himself the form of humanity with all its attendant ills, and he flinched not from its severest trials. He lived in a peasant's home, he was clothed in coarse garments, he mingled with the lowly, he toiled daily with patient hands. His example shows us that it is man's duty to be industrious, that labor is honorable.

His life, written upon the pages of history, should encourage the poor and the lowly to perform contentedly the humble duties of their lot. Honorable work has received the sanction of Heaven, and men and women may hold the closest connection with God, yet occupy the humblest position in life. Jesus was as faithfully fulfilling his mission when hiding his divinity with the humble occupation of a carpenter, as when employed in healing the sick, or walking upon the white-capped billows to the aid of his terrified disciples. Christ dignified the humble employments of life, by occupying a menial condition, that he might be able to reach the mass of mankind and exalt the race to become fit inmates for the Paradise of God.

For a long time, Jesus dwelt at Nazareth, unhonored and unknown, that he might teach men how to live near God while discharging the humble duties of life. It was a mystery to angels that Christ, the Majesty of Heaven, should condescend, not only to take upon himself humanity, but to assume its heaviest burdens and most humiliating offices. This he did in order to become like one of us, that he might be acquainted with the toil, the sorrows, and fatigue of the children of men, that he might be better able to sympathize with their distresses and understand their trials.

Those who divorce religion from their business are reproved by the example of Jesus. Hidden away among the hills of Nazareth, yet having such claims upon Heaven that he could command the entire angel host, he was a simple carpenter, working for wages, and living a godly life in the face of all discouragements.

It requires much more grace and stern discipline of character to work for God in the capacity of mechanic, merchant, lawyer, or farmer, carrying the precepts of Christianity into the ordinary business of life, than to labor as an acknowledged missionary in the open field, where one's position is understood, and half its difficulties obviated by that very fact. It requires strong spiritual nerve and muscle to carry religion into the work-shop and business office, sanctifying the details of every-day life, and ordering every worldly transaction according to the standard of a Bible Christian.

Jesus, in his thirty years of seclusion at Nazareth, toiled and rested, ate and slept, from week to week and from year to year, the same as his humble cotemporaries. He called no attention to himself as a marked personage, yet he was the world's Redeemer, the adored of angels, doing, all the time, his Father's work, living out a lesson that should remain for humanity to copy to the end of time.

This essential lesson of contented industry in the necessary duties of life, however humble, is yet to be learned by the greater portion of Christ's followers. If there is no human eye to criticise our work, nor voice to praise or blame, it should be done just as well as if the Infinite One himself were personally to inspect it. We should be as faithful in the minor details of our business, as we would in the larger affairs of life.

God is testing and proving us by our daily lives, watching the development of our characters, weighing our moral worth. Those who slight the spirit of the Word of God in their business life, as carpenters, lawyers, and merchants, are unfaithful in matters of eternal interest, since it is the *life* that indicates the spiritual advancement, and registers upon the Book of God the unchangeable figures of the future. The angels are mournfully inscribing a fearful record of slighted duties and neglected opportunities against many who make exalted professions. Those who are unfaithful in little things, cannot be entrusted with the true riches of the kingdom.

From the Cradle to the Grave.—An English generation on the march from the cradle to the grave is an instructive spectacle, and we have it carefully presented to us in the report by Dr. Farr. Let us trace the physical fortune which any million of us may reasonably expect. The number to begin with is made up of 511,745 boys and 488,255 girls, a disproportion which will by and by be redressed by the undue mortality of the boys, and will be reversed before the close of the strange, eventful history. More than a quarter of these children will die before they are five years old—in exact numbers, 141,387 boys and 121,795 girls. The two sexes are now nearly on a level. The next five years will be much less fatal. In the succeeding five years—from ten to fifteen—the mortality will be still further reduced. Indeed, for both sexes, this is the most healthy period of life; the death-rate,

however, is lower for boys than for girls. There will be some advance in deaths in the next five years, and still more in the five which follow, but 634,045 will certainly enter on their twenty-sixth year. Before the next ten years are at an end, two-thirds of the women will have married. The deaths during that period will be 62,052, and of these no fewer than 27,134 will be caused by consumption. Between thirty-five and forty-five a still larger "death-toll" will be paid, and little more than half the original band—in exact numbers, 502,915—will enter on their forty-sixth year. Each succeeding decade, up to seventy-five, will now become more fatal, and the numbers will shrink terribly. At seventy-five, only 161,124 will remain to be struck down, and of these, 122,559 will have perished by the eighty-fifth year of the march. The 38,565 that remain will soon lay down their burdens; but 2,153 of them will struggle on to be ninety-five, and 223 to be 100 years old. Finally, in the 108th year of the course, the last solitary life will flicker out. Such, then, is the average lot of a million English men and women.—*Cassell's Magazine.*

Indian Relics.

NEARLY one-half of one entire wing of the Government Building at the Centennial Exhibition is wholly devoted to a display of relics of the aboriginal inhabitants of the American continent, and various objects representing the arts and customs of modern Indians in various portions of the country. Among the former are found hundreds of flint arrow-heads of all sizes and degrees of perfection. Many of them are remarkably delicate in form and color. Flint knives from Mexico so nearly resemble, in form, steel implements of the same sort—some of them presenting edges so keen and regular that one could almost believe them capable of making a barber envious—that the inspector can scarcely repress expressions of astonishment that such delicate work should have been accomplished by such rude means as we know were employed. Stone spear-heads and hammers are almost equally interesting, as are also various sorts of stoneware, as great salt-pans—one of which is two and one-half feet in diameter—mullers, and curiously shaped bowls, jars, and various cooking utensils. Among other articles for domestic use are large blocks of stone hollowed out so as to form uncouth bowls. In these our Indian predecessors pounded, with stone pestles, the nuts and acorns which constituted an important element of their simple diet. Mortars of a more modern type are finished in a much more workmanlike manner. Another implement used for a similar purpose consisted of a long, thick slab of stone containing a deep groove, the sides and bottom of which were polished by use. These were used in later times for grinding corn by the aid of a stone implement furnished with a rough handle for the convenience of the user. Several of these implements were found in the graves of Indian women, indicating the fact that the performance of such menial service as grinding devolved upon the female members of ancient as well as modern tribes, and of Western as well as Eastern nations.

The interest attaching to these rude utensils is much increased by a knowledge of the fact that those who made them possessed no iron implements of any kind, to aid in their manufacture, but were obliged to fashion them by the slow process of rubbing one stone against another, or chipping off small fragments by knocking stones together. Many culinary utensils quite similar to those described are still in use among the natives of Alaska, and other Indian tribes, some specimens of which may be seen in this department.

A very ancient relic is a calendar which was found in some old Mexican ruins. It consists of a circle worked out upon the surface of a solid rock; it is divided into degrees, and surrounded with hieroglyphic characters.

Traces of ancient Mexican theology are found in rudely formed stone idols, some of which are mounted upon pedestals, while others were formed upon the sides of rocks, from which they have been detached. Most of these are formed from a coarse kind of sandstone which was easily worked, others being of limestone. Many stone vases and jars are ornamented with caricatures of human faces in some respects resembling the grotesque figures of the Chinese.

Some specimens of human footprints in the solid rock excite many curious speculations. They are so perfectly symmetrical in form and proportion that one can scarcely believe that they were chiseled by the rude sculptors whose works have been already described in part; the only other supposition tenable is that they were formed by a human foot which left its impress in the mud of some slough of a by-gone age, its present solid character being due to the hardening influence of time. This supposition does not, however, necessarily imply an antiquity of more than a few hundred years, since all the change necessary in such a case has been observed to take place entirely within the limits of an ordinary lifetime.

A very interesting object for study is a kind of chart representing in relief various forms of Indian mounds found in the State of

Wisconsin. They are called "animal mounds" from a fancied resemblance which they bear to certain animals, though we could discover little more real similarity to animal forms than in the various groups of stars to which the ancients attached the names of animals and other forms to which their imaginative minds traced a faint resemblance. The object of these mounds is supposed to have been the perpetuation of the memory of some great chief, whose name is now forgotten—even his existence is doubtful—notwithstanding this great outlay of labor. The extent of some of these mounds may be appreciated by the fact that a single small group covers an area of eight hundred by five hundred and fifty feet. It is very curious to see in these ancient savages the same disposition which prompted the Egyptians of four thousand years ago to erect the famous pyramids, which justly rank among the wonders of the world.

Gorgets, wampum, shell fish-hooks, shell spoons, wooden hooks, bone perforators, and various copper implements made from the native ore are shown as specimens of Indian art which have rapidly disappeared since the advent of the white man to these Western shores.

Walking in the Fiery Furnace.—In London, on August 8, last, experiments were made in the grounds of the Alexandra Palace with an extraordinary invention, by which results somewhat analogous to those recorded as miraculous in Jewish history were achieved. Mr. Oersberg, a Swedish mechanician, claims to have invented, and Captain Ahlstrom, a compatriot, to have matured and fitted for practical use, a dress which will enable the wearer to dash with impunity into the fiercest fire for the purpose of saving life and property. At the east end of the palace, between the circus and the banqueting hall, huge piles of old dried wood were heaped up, intersected by narrow avenues, and the wood was drenched with petroleum. The consequence was that, the moment a light was applied to the pyre, the whole blazed up with a flame so fierce, and sending forth a heat so intense, that the thousands who had gathered around to witness the scene were forced to retire to a more respectful distance. The sun's rays, which had hitherto been inconveniently felt from above, were quite forgotten in the glow which now flamed up from below, and it really seemed as if there was malice in the tongues of fire that spat out on every current of passing air. Standing forty yards to the windward of this fierce fire, the heat was all but intolerable; and even the firemen of the palace brigade, under the command of Captain Archer, the chief officer, were fain to give a wide berth to the burning center. Then it was that Captain Ahlstrom, clad in a dress not at all unlike that worn by Captain Boyton when he paddled himself across the Straits of Dover, made his appearance on the scene. His costume consisted, so far as it was possible to ascertain, of an overcoat of fustian, covering an inner garment of wool and felt. Between the two skins, so to say, is a network of veins, through which are pumped continuous supplies of air and water, the main air tube, before it reaches the body, being enclosed in the larger water tube, and by such means kept perfectly cool. The escape for the cool air is through orifices in front of the face, and the current so made forces back the flames, and leaves perfect breathing space. Assurance was given that the clothing itself is in no way chemically prepared, and is simply protected against the action of the flames by the torrents of water that pour over the man from head to foot. With the greatest possible nonchalance, Captain Ahlstrom walked into and through the fiery furnace, not only free from discomfort, but apparently with enjoyment. After spending about ten minutes in about the warmest climate it is possible to imagine, enveloped at times so as to be hidden by flames, he carried out a chair which was on fire and sat coolly down upon it, to the amusement and astonishment of a crowd of spectators.—*Scientific American.*

The Honest Quaker.—This story—good to read in these days of business avarice—is told of Nantucket a generation ago:—

It was a very severe winter, and the harbor had been frozen over four weeks. The coal in store had been exhausted, and there was much suffering from lack of fuel. Even the fences had been torn down and burnt to eke out the scanty supply of wood. To the great delight of the towns-people, the ice broke up one fine morning, and a schooner, laden with coal, was seen approaching. There was much excitement, and before the craft was moored, a coal dealer boarded her and eagerly addressed the honest Quaker skipper, Captain Gifford.

"Wal, Cap'en," said he, "you've about hit it this cruise. I guess I'll hev to take y'ur hul cargo. S'pose you'll want more'n the usual seven dollars a ton. Wal, I like to do the squar' thing by a friend, and I'll give you twelve dollars a ton for it."

"Friend," said Captain Gifford, "thee can have one ton of my coal, if thee likes, for eight dollars, but only one ton; all must have a chance."

Just then one of the richest men in the place joined them, saying, "I want ten tons of your coal, at your own price. Name it. I have suffered long enough for once."

He received the same answer, and so did all —one ton for each family, and eight dollars was the price of each ton. No love of gain, no solicitation, no regard for individuals, could move honest Capt. Gifford.—*Sel.*

A Wonderful Dwarf.—We recently saw in New York one of the most remarkable examples of arrested growth which has ever been on exhibition. The subject is a native Mexican, a female, and is said to be twelve years of age. She seems to be symmetrically and proportionately developed in all respects, though a little less intelligent than one would expect a girl of her reputed age to be. She speaks Spanish, and a few words of English. She is apparently healthy, and has acquired a number of the second teeth. She appeared very cheerful, ran about and shook hands with the visitors, talking a little, and gleefully exhibiting the small coins given her by inquisitive visitors who were inclined to purchase the opportunity for a closer inspection.

This diminutive specimen of humanity, so like other children of her age in most respects, is, in size, inferior to many infants at birth. Her height is twenty-one inches; circumference of head, thirteen inches. Her leg is little larger than a man's thumb, while her tiny hand is smaller than an infant's. Her weight is said to be only five pounds. She wears shoes three inches long and one and one-eighth inches wide.

Altogether, this dark-eyed curiosity impresses one much as an animated doll might be supposed capable of doing. She is accompanied by her parents, who are both well-developed persons, and have other children who are fully developed for their age. They state that this child has always appeared to be healthy, but ceased to grow when but a few months old, having been very small at birth. The name of this remarkable person is Lucia Zarate. She has received considerable attention, while in this country, from distinguished members of the medical profession.

Read and Heed This.—Many people seem to forget that character grows; that it is not something to put on, ready made, with manhood or womanhood, but, day by day, here a little and there a little, grows with the growth and strengthens with the strength, until, good or bad, it becomes always a coat of mail. Look at a man of business—prompt, reliable, conscientious, yet clear-headed and energetic. When do you suppose he developed all these admirable qualities? When he was a boy. Let us see the way in which a boy of ten gets up in the morning, works, plays, studies, and we will tell you what kind of a man he will make. The boy that is late at breakfast and late at school, stands a poor chance to be a prompt man. The boy who neglects his duties, be they ever so small, and excuses himself by saying, "I forgot, I didn't think!" will never be a reliable man. And the boy who finds pleasure in the suffering of weaker things, will never be a noble, generous, kindly man —a gentleman.

Ancient Glass.—Sir Henry James, the Director of the Ordnance Survey, has pointed out that the "toughened glass" discovered by M. de la Bastie was apparently known in the reign of Tiberius, as, according to Pliny, a combination was devised which produced a flexible glass; but the machinery of the artist was totally destroyed, we are told, in order to prevent the value of copper, silver, and gold from becoming depreciated. According to one account, an artist appeared before Tiberius with a cup of glass. This he dashed violently upon the ground. When taken up it was neither broken nor cracked, but dinted like a piece of metal. The man then produced a mallet, and hammered it back into its original shape.

A Lawyer's Definition of Law.—The Newark *Daily* says: A prominent lawyer recently gave the following definition of the law: "It is simply an effort to shift the responsibility of the decision. The jury of laymen, befogged by the pleadings, make up their verdict with the understanding that if there is anything wrong about it the Supreme Court, composed of lawyers, will make it all right. The Supreme Court settles it according to law, with the understanding that the laymen of the Court of Appeals will adjust the equity. The Court of Errors orders a new trial, and it comes back to where it started, and begins again with the jury of laymen. It is simply a mill that goes round and round, and grinds up the property of fools."

Too Fast.—In our day, both married and single people live too fast. A bachelor now has need of an income such as would once have satisfied a man with a family; and the husband and father requires for his single household the means that twenty years ago would have supplied two families, if not three.

Daughters are sent to fashionable schools at an enormous cost, there to learn extravagance, and, in short, to become fitted for anything but to become the wives of poor young men. Sons are ruined with unlimited pocket money, late hours, and almost total absence of paternal control. Thus we not only waste our estates, but perpetuate the vice of our children. In every way we are living too fast.

Facts about Insects.—In 1872 the caterpillars of the brown tail moth were so numerous as to defoliate the trees of a very large part of the South of England. The alarm was so great that public prayers were offered in the churches that the calamity might be stayed. The poor were paid one shilling per bushel for collecting caterpillars' webs to be burned under the inspection of the overseer of the parish; and fourscore bushels were collected daily in some parishes. But on the other hand, the benefits derived from the labor of some insects should not be overlooked; some species feed only on noxious weeds, and others prey on still more noxious insects. One of the greatest friends of the agriculturist is the family of ichneumon flies, which lay their eggs in the bodies of living caterpillars, in which they are hatched, thus destroying them; although the caterpillar, after being "ichneumoned," has still a voracious appetite. The caterpillars which feed on the cabbage eat twice their weight in a day; the larvæ of some of the flesh flies eat a much larger proportion than this. The reproductive powers of insects vary very much. Some lay only two eggs; others, such as the white ant, 40,000,000, laying them at the rate of sixty a minute. The queen of the bee-hive is capable of laying 50,000 in a season; the female wasp 30,000. The majority of insects, however, lay but about 100; in general, the larger the insect the fewer eggs it lays. Most insects have two generations in a year; some have twenty; others take seven years from the time the egg is laid until their death in a perfect state. But probably not above five per cent. of the eggs laid become perfect insects. Insectivorous birds are diligent in destroying the larvæ of insects, but they will not do all that is required; hand labor is also needed.—*London Times.*

A Chinaman's Opinion of Rum.—Taking a walk, one day, through the commissariat stores in Hong Kong, with a friend, I came to a portion of that establishment where four Chinamen were engaged in emptying a large tub of rum—which they were carrying in gallon measures to another portion of the building. Addressing myself to the one who was apparently the head of the party, I inquired, "Do you like rum, John?" "No sir," said the Chinaman. "Why not?" "Rum not proper, sir; make Chinaman *number one fool.*"

Value of Toil.—Idleness does not mean happiness by any means, though many young people think that an idle life must be a pleasant one; but there are none who enjoy so little, and are such burdens to themselves, as those who have nothing to do. Those who are obliged to work hard all day enjoy their short periods of rest and recreation so much that they are apt to think that if their whole lives were spent in rest and recreation it would be the most pleasant of all. But this is a sad mistake, as they would soon find out if they made a trial of the life they think so agreeable. One who is never busy can never enjoy rest, for rest implies a relief from previous labor; and if our whole time was spent in amusing ourselves, we should find it more wearisome than the hardest day's work. Recreation, only valuable as it unbends us, the idle can know nothing of. Many people leave off business and settle down to a life of retirement; but they generally find that they are not nearly so happy as they were before, and they are often glad to return to their old occupations to escape the miseries of indolence.

Habit.—Like flakes of snow that fall unperceived upon the earth, the seemingly unimportant events of life succeed one another As the snow gathers together, so are our habits formed. No single flake that is added to the pile produces a sensible change. No single action creates, however it may exhibit, a man's character, but as the tempest hurls the avalanche down the mountain and overwhelms the inhabitant and his habitation: so passion, acting upon the elements of mischief which pernicious habits have brought together by imperceptible accumulation, may overthrow the edifice of truth and virtue.

—"Lizzie, arn't you going to church this morning?" "No, dear, the pews are so narrow, you know, and I could n't think of going without my bustle," and she did not go.

—A San Francisco girl recently took the arsenic treatment for procuring a clear and beautiful complexion. She looked white enough in her coffin.

—Whisky is not a tonic. It is probably an alterative, for it alters dollars to cents, virtue to crime, and men to brutes.

DIETETICS.

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

Poisonous Cheese and Milk.

A CORRESPONDENT of the N. Y. *Tribune* sends to that journal from Wisconsin the following facts :—

"Many persons hereabout were rendered very sick by eating cheese which was made at a neighboring factory last summer. All who partook of it were taken with violent pain in the bowels, and vomiting and purging, some being so sick that their recovery seemed doubtful."

Prof. Arnold made the following remarks in response to the correspondent's request for information respecting the cause of the poisoning and the proper preventive :—

"Cases of poisoning similar to that described have been the occasion of much solicitude among dairymen and others, as they are every now and then breaking out in different parts of the country. Cases of a milder type are not unfrequent, the symptoms running no further than nausea and pain in the stomach and bowels, without either vomiting or purging. I have satisfactorily traced the cause to organic poison in the milk, derived from the use of bad food and water taken by the cow. Where water which is foul is permitted to stand where it is warm, or at a temperature at which organic changes can take place, organisms of one kind or another, poisonous to the human body, it is well known become developed, as is proved by the use of the water. Cows making use of such water are liable to take the poison germs into their circulating system and excrete them in their milk. As in the processes of cheese-making the milk receives no treatment which will destroy them, they carry their vitality into the cheese, which, when eaten and dissolved in the stomach, sets them free to produce their legitimate results. When milk thus affected is used for butter, the poison is liable to and does appear in the butter, producing the same symptoms as in the case of cheese. Or if the milk is used directly, exactly the same results follow as when made into butter or cheese. Dr. Inglehart, of Syracuse, N. Y., is now investigating a case of this kind. It is a case of poisoning in which a number of persons were affected precisely as in cases of poison cheese, and has been traced to the use of milk, and the milk traced to a herd of cows which had access to a cess-pool in the yard and had their brewer's grains moistened with water from a well affected by the drainage in the yard. The writer has had personal experience in the use both of poison milk and poison cheese, and can identify their connection. This origin of the cause of the poison is supposed by some to be impossible, because it is supposed impossible that organic germs could pass through the walls of the gland cells. But it has been rigidly demonstrated that germs which are taken in at the mouth come out in the milk alive, and afterward develop and multiply. (See "Poison Cheese," Seventh Annual Report American Dairymen's Association.) Cases of this kind are all the time occurring in dairy experience. Three cases have come to my knowledge within the past year where poisonous ferments taken in with the food of the cows have been developed in their milk and appeared in cheese and in butter and buttermilk.

"It is useless to appeal to chemical analyses for the cause; for the analysis kills the germs on which the poison depends, and of course it eludes the chemist's most careful work. Cases of mineral poison now and then occur from lead derived from the paint in the vessels used about the dairy, or from some other accidental circumstance. These the analyst can trace out with great exactness, but in cases of organic poisons his labors have been futile, and these cover the great majority of the cases of poison cheese, in which, I have no doubt, the poisoning in Wisconsin is included. The cause of this kind of poisoning is a ferment, and has the nature of yeast. A little leavens all it is mixed with. The milk of a single cow will poison the largest vatful. The remedy is to keep all bad food and water out of the way to remove the cause."

No doubt many of the cases of diarrhea and dysentery which are attributed to other causes, and frequently to harmless articles of food, might, by proper research, be traced to the cause pointed out above. The remedy indicated by Prof. Arnold is a good one, so far as it goes, but it is certain to be totally disregarded, in all but a very few cases, at least. A better remedy is to discard so questionable an

article as cheese altogether, and to make as little use as possible of milk during the summer months or never to use it without first scalding it.

Autumn Foods.

AUTUMN is the season of the year when vegetarians can best appreciate the rich bounties which nature furnishes in luxurious abundance, tempting through the sense of sight as well as of taste. In most localities, at this season of the year, ripe fruits are so abundant that every table may be well supplied with luscious peaches and pears, nutritious apples, and several other fruits. Grapes, too, of excellent quality and moderate price, are to be obtained in almost all places. All fruits are best in their season; and while a good supply of choice fruits of the more perishable varieties should be secured by canning or drying for future use, the opportunity should be improved to enjoy them in their fresh maturity.

People need to acquire an extra amount of adipose tissue in the fall, in preparation for cold weather. A cloak of warm fat is needed to protect the body from the chilling winds of winter. The abundant use of fruits, with their juices rich with saccharine elements, is one of the means of producing a healthy increase of fat. Many people who think nothing of spending a dollar for a roast of beef or a pound of tea, imagine themselves too poor to purchase fruit. Such is very poor economy. A liberal use of fruit is one of the very best preventives of ill-health.

One more suggestion. Many people imagine they are making a good bargain when they get an inferior quality of fruit at a very reduced price. For instance, when the best varieties of pears sell at $2.00 a bushel, an inferior kind may be obtained for 75 cts. or $1.00. Nevertheless, the best is the cheapest in the end. Especially if the fruit is to be canned or dried, the very best should be selected. It does not pay to can poor fruit. It is a great error to suppose that it makes little odds what kind of fruit is selected for drying, as many seem to do. Fruit does not improve by drying. If it was unripe, bitter, and second-class before drying, it will be still worse afterward.

Here are a few autumn recipes, most of which are selected from "Healthful Cookery":—

Peach and Tapioca Pudding.—Pare and slice nice ripe peaches sufficient to nearly fill a baking-dish. Fill up the dish with tapioca which has been previously prepared by soaking for three hours in cold water, and then being placed upon the stove until made to boil. Bake two hours. If the peaches are not the sweetest, a little sugar may be sprinkled upon them before the tapioca is added.

Sweet Potatoes.—Within a few years our Northern farmers have acquired so much skill in the management of tender crops, that the sweet potato is no longer confined to the more Southern States, but is successfully cultivated in nearly all parts of the Union. The sweet potato is a very palatable and nutritious article of food. Though it could hardly replace the common potato as a continuous diet, it is very acceptable for variety. Baking or roasting is the best method of cooking. Steaming is the next best method, being greatly preferable to boiling. Baking, after partial steaming or boiling, is an excellent method practiced by some.

Baked Apples and Dates.—This is one of the nicest ways of cooking apples. Select fine, juicy, sour apples of equal size. Core without paring or dividing, after wiping free from dirt. Fill the center of each with chopped dates. Place in a baking-dish with a little water, and bake until well done. Sugar may be used instead of dates if preferred.

Nuts.—We often receive questions concerning the dietetic value of nuts. Some consider them totally unfit for food. Are they wholesome? No unconditional answer would be correct. Some nuts are wholesome, and others are unwholesome. As a general rule, nuts which are nearly new are much more easy of digestion than those which are old. Many nuts become rank and acrid with age; such should be used only when new. The milder varieties of nuts, those which do not have so marked a flavor as others, and are least oily, as the chestnut, almond, filbert, hickory nut, and pecan, are the most wholesome.

Nuts should be eaten only at meals, and as a part of the meal. It is of course injurious to load the stomach with nuts or any other food after a sufficient quantity has already been eaten. In order that nuts may be well digested, it is very important that they should be most thoroughly masticated. To insure this, it is wise to eat them with some hard dry food, as graham crackers, or something equivalent. Even cocoanuts may be eaten in this way without injury. The very common practice of eating nuts late in the evening, especially in the winter, is an outrage against the digestive organs.

THE

HEALTH REFORMER.

BATTLE CREEK, MICH., OCTOBER, 1876.

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

Alcohol and Animal Heat.

IT is one of the most common of popular errors that alcoholic drinks are "warming." If a man is going on a journey on a cold day, he is advised to take along a flask of brandy to aid him in combatting the cold. If a person has a severe chill, he must be dosed with wine, rum, or some other alcoholic liquid "to warm him." The sensation of warmth produced by taking a glass of wine or brandy is delusive. The circulation is unbalanced, and for a few moments there is a seeming increase of heat; but the thermometer shows that the temperature is lessened. Says Dr. Parkes, the eminent English sanitarian, "All observers condemn the use of spirits, and even of wine or beer, as a preventive against cold." The names of Dr. King, Dr. Kane, Captain Kennedy, and Dr. Hayes, may be cited as holding to this opinion. In the last expedition in search of Sir John Franklin, the whole crew were teetotalers.

Prof. Janeway, M. D., professor of materia medica in Bellvue Medical College, stated in a lecture before his class that alcohol does not assist those who use it to endure cold. In proof of the assertion, he related the following incident, which was given to him by the first gentleman mentioned in the account:—

A gentleman was appointed by the government to go on a survey in the Eastern States in the depth of a severe winter. He chose for his assistants men who were total abstainers. At the same time, another party set out upon the same business, the members of which were addicted to the use of whisky. Only one of the first party gave out, while nearly every one of the whisky-drinkers succumbed to the influence of cold.

"Plenty of food, and sound digestion, are the best sources of heat." "I am quite satisfied that spirituous liquors, though they give a temporary stimulus, diminish the power of resisting cold."—SIR JOHN RICHARDSON.

"When a continuance of exertion or endurance is called for, spirit does harm; for you are colder or more fatigued a quarter of an hour after [taking] it than you would have been without it."—DR. HOOKER, physician of the Arctic expedition under Sir John Ross.

Prof. Miller states that the Russian military authorities "interdict its use absolutely in the army, *when troops are about to move under extreme cold*, part of the duty of the corporals being to smell carefully the breath of each man on the morning parade, and to turn back from the march those who have indulged in spirits, it having been found that such men are peculiarly subject to be frost-bitten and otherwise injured."

"The Hudson's Bay Company have for many years entirely excluded spirits from the fur countries to the north, over which they have exclusive control, 'to the great improvement,' as Sir John Richardson states, 'of the health and morals of their Canadian servants, and of the Indian tribes.'"—DR. CARPENTER.

Hygienic Remedies.

COMPRESSES.

THE compress is a wet cloth or bandage applied to a part. The object may be to cool the part under treatment, or to retain heat. The compress may be used with equal success for either purpose. When the part is to be cooled, a compress composed of several folds should be wet in cool, cold, or iced water, as required, and placed upon the part after being wrung so it will not drip. It should be changed as often as *every five minutes*. This is often neglected, to the injury of the patient. A very cold compress may be prepared by placing snow or pounded ice between the folds of the compress. This will not need renewal

so frequently; but its effects must be carefully watched, as injury may be done by neglect. In applying cold to such delicate parts as the eye, a very thin compress is better. It should be renewed once in five minutes, at least.

When accumulated warmth is required, a thick compress is applied, being wrung out of tepid water, and covered with a dry cloth to exclude the air. Soft, dry flannel is an excellent covering. Rubber or oiled silk may be employed when the compress is not to be retained more than a few hours; but if it is to be worn continuously, they will be injurious, as they are impervious to air and thus interfere with the function of the skin. The effects of a compress thus applied are identical with those of the poultice, and the application is a much more cleanly one.

Compresses are applicable in all cases in which poultices are commonly used. They may replace the old-fashioned plasters with profit and comfort to the wearer. The wet-sheet pack, half pack, chest pack and wrapper, leg pack, and wet girdle are all large compresses.

When applied continuously in the same place for a long time, the compress occasions a considerable eruption of the skin, and sometimes boils and carbuncles. There is no particular advantage in these eruptions, and they sometimes do much harm by producing a great degree of general irritation. The notion that they purify the system, though a very popular one, has really but a very slight foundation. The discharge is largely made up of elements which would be of great utility if retained in the system, and the amount of foul matter eliminated in this way is certainly infinitesimal compared with the amount thrown off by a few inches of healthy skin. The skin can always do more and better work when healthy than when diseased. The eruptions are no doubt due to debility of the skin, produced by a too long continuance of the very abnormal conditions supplied by the compress. Yet, strange as it may appear, there are those claiming to be physicians who directly aim to produce inflamed and irritated surfaces by the continuation of the compress for months and even years.

The *wet head cap* is a compress made to fit the head. It should consist of several thicknesses of cotton or linen cloth, so as to retain moisture for some time. It is a good temporary appliance in diseases of the scalp, and for headache; but it should never be worn continuously for the purpose of relieving congestion, as it will have an effect just the opposite of that desired. In eczema of the scalp it may be worn until the disease is cured, being frequently rewetted. It is an excellent means of preventing sun-stroke and other effects of heat when worn beneath the hat in summer; but even for this purpose its use should be temporary, the cap being worn only during the hotter portion of the day.

FOMENTATIONS.

The fomentation is a local application analogous to such general appliances as the hot pack, vapor bath, and hot-air bath. It consists in the application of a cloth wet in hot water. It may be considered as a hot compress. Fold a soft *flannel* cloth twice, so that it will be of three or four thicknesses. Lay it in a basin, pour boiling water upon it, and wring it dry by folding it in a dry towel. Or if only one end of the cloth is wet, it may be wrung by folding the dry portion outside of the wet; in wringing, the whole will become equally wet. Apply it to the patient as hot as it can be borne. The second application can usually be made much hotter than the first. Frequently dipping the hands in cold water will enable the attendant to wring the cloth much hotter than he would otherwise be able to do. The most convenient way is to heat the cloths in a steamer; by this means, they are made as hot as boiling water, and yet they are more easily handled, not being saturated with water. When no hot water is at hand, a fomentation may, in an emergency, be quickly prepared by wetting the flannel in cool water, wringing it as dry as desired, folding it between the leaves of a newspaper, and laying it upon the top of the stove, or holding it smoothly against the side. The paper prevents the cloth from becoming soiled, the water protects the paper from burning, and the steam generated quickly heats the cloth to boiling heat. For a long fomentation, the heat may be made continuous by applying over the wet cloth a hot brick or slab of soapstone.

The hot cloths should be re-applied once in

five minutes. Two cloths should be employed, so that the second may be applied the moment the first is removed. To retain the heat, a dry flannel, rubber, or oil-cloth should be placed over the fomentation. The application may be continued from ten minutes to half an hour, or longer in special cases. This appliance is very powerful, and should not be employed to excess. Alternate hot and cold applications are frequently more efficient than the continuous fomentation. Hot applications should always be followed by a cool or tepid compress for four or five minutes, at least.

The uses of the fomentation are very numerous. It is indicated whenever there is local pain without excessive heat, or evidences of acute inflammation. Local congestions, neuralgia, toothache, pleurisy, pleurodynia, and most local pains vanish, beneath its potent influence as if by magic. For indigestion, colic, constipation, torpid liver, dysmenorrhea, and rheumatic pains, it is a remedy of great power, and is used with almost uniform success. In relieving sick headache by application to the head, neck, and stomach, its efficiency is unrivaled.

When applied to the head for some time without intermission, it will often occasion faintness; hence, a cooler application should be made after the use of the hot cloths for fifteen or twenty minutes.

If the applications must be continued for a long time, it is well in most cases to apply them at a temperature slightly lower than when they are to be used for only a few minutes.

This remedy may well replace the blisters, plasters, cataplasms, scarifications, rubefacients, and other irritating measures so long used for relieving pain, local congestions, and inflammations.

The Scrofulous Scavenger.

SUS SCROFA was the significant name which the ancient Romans applied to the gluttonous beast which moderns call the hog. From *scrofa* comes scrofula, the name of a disease which the ancients observed to be common both in the hog and in those who ate of his diseased carcass.

The hog is well known to zoologists as a scavenger, a member of a family of scavengers. His near relatives, the peccary and the tapir, are scavengers like himself.

The Jews were forbidden by Jehovah, through their lawgiver, Moses, to use the flesh of the hog as food; and for years, down to the present time, in fact, they have as a nation rigidly abstained from the use of pork. It is a significant fact, as stated by a recent author on longevity, that the average length of life among the Jews is greater than among any other nation. When we consider the prejudicial influence of swine's flesh upon the health, the loathsome diseases which it engenders and predisposes to, it is but fair to suppose that a considerable share of this notable superiority in point of longevity is due to the non-use of pork.

In sections where pork is largely used as an article of food, that large class of diseases commonly known as scrofulous — enlarged glands, skin diseases, sore eyes, and even worse conditions—are very abundant.

But what shall we do with the hog if we don't eat him? Let him alone. Suffer him to pursue, unmolested, his natural vocation, that of a scavenger. Or, if he must be employed otherwise, turn him over to the oil-maker and the soap boiler. Make brushes of his bristles, gloves of his elastic hide, glue of his feet, manure of his bones, anything or everything of his carcass, but *don't eat him.*

Temperance Bitters.

THOUSANDS of people are annually imposed upon by villainous compounds which are advertised under the alluring title, "Temperance Bitters." One of the most extensively sold of these was well exposed in the *Pacific Medical and Surgical Journal*, two or three years ago, as follows:—

"This 'Bitters' is one of the nastiest nostrums, introduced and largely sold by the most extensive and brazen advertising under the false pretense of being free from alcohol. It originated with the cook of a party which traveled overland as a mining company to California in 1849; he settled in Calaveras County, and, having no success as a miner, he

turned his attention to the bitter qualities of the herbs growing around him, and came to San Francisco with the idea of making and vending a nostrum to be called 'Indian Vegetable Bitters.' He fell in with an enterprising druggist who saw money in the project, and joined him. At the suggestion of the latter, the 'Indian' was struck out; and as the concoction got sour by fermentation, it was concluded to call it 'Vinegar Bitters,' and to identify it with the temperance movement. The native herbs, which became rather troublesome to collect, were discarded; and aloes, being a cheap bitter, was substituted. 'Nine sick people out of ten,' said the druggist, 'will be cured by purging.' Wherefore aloes and Glauber's-salt. So the cook turned doctor, the decoction became sour, and of Californian instead of Indian paternity, and 'Doctor Walker's Vinegar Bitters' began their career in the newspapers and on the shelves of the drug stores."

According to the analyses of Nichols, Hoffman, and others, "Vinegar Bitters" consist of a mixture of aloes, gum guaiac, anise-seed, sassafras bark, acetic acid, sulphate of soda, Glauber's-salt, gum arabic, and alcohol.

Amount of Nutriment in Lager Beer.—After such repeated exposures of the falsity of the idea, it is very strange that people should still cling to the notion that lager beer is nourishing. If a man has lost his appetite and seemes to be failing in strength, or losing weight, his next-door neighbor advises him to drink daily a few glasses of lager beer. If a nursing mother has insufficient food for her infant, wise old ladies prescribe lager beer or ale.

Although it is being constantly reiterated in the ears of the people that alcohol is not food, and that beer and ale are only dirty mixtures of alcohol and water, still they refuse to believe that these pernicious beverages cannot, in some way, impart nourishment and strength. Perhaps the testimony of one of the greatest of European savants will correct the opinions of a few.

Said Prof. Baron Liebig, a German chemist of great renown, "We can prove with mathematical certainty that as much flour or meal as would lie on the point of a table-knife is more nutritious than five measures (ten quarts) of the best Bavarian beer." Powerful nutriment, indeed!

What's in a Name.—In one of the principal restaurants upon the Exhibition grounds, at Philadelphia, may be seen numerous placards, displaying the word "Avena," as the name of one of the articles which can be furnished. There is something really "taking" in the name, and the stranger is pretty sure to call for a dish of "avena" when the waiter-girl asks for his order. In due time a generous bowlful of oatmeal pudding and milk is set before him, which he eats with a hearty relish under the guise of "avena."

It is really gratifying to see so large a number partaking of this wholesome article of food with such evident enjoyment; yet the pleasure is somewhat marred by the recollection that the minds of the people are still so darkened by foolish prejudices that it is necessary to give to wholesome food some novel name to make it acceptable to perverted tastes.

Diseased Animals.—Evidence brought out before the House Committee on Agriculture shows that most of the cattle shipped to our large cities for consumption are kept, during the four or five days they are on the road, without either food or water, and are, in consequence, in a diseased condition when they reach the hands of the butchers. And yet the law-makers "doubt the constitutional authority to interfere"! Nevertheless, this fact is no apology for the stupidity of those who will *eat* these diseased carcasses. If people will refuse to accept such unwholesome food, the inhuman abuse will soon cease.

Radical for Reform.—At a recent State Sunday-school convention, a reverend gentleman improved the occasion to make a speech against tobacco-using. He boldly declared that "no man who smokes or chews tobacco can be a Christian, and therefore it is impossible for such a man to enter the kingdom of Heaven." He was particularly severe in censuring teachers and superintendents who indulge the practice.

Although we have no apology to offer for the practice of tobacco-using in any one, certainly in Christians, we might allow the possibility of a man's being so ignorant of the nature and effects of the tobacco habit as to be able to indulge it without totally destroying his Christian character. Nevertheless, the filthy habit is so completely at variance with that purity and refinement which characterize the genuine Christian that it is difficult to imagine how one professing to be a follower of Christ can indulge it, especially after he has been enlightened respecting its evils.

PEOPLE'S DEPARTMENT.

Devoted to Brief Discussions of Health Topics, Individual Experiences, and Answers to Correspondents.

A Query on Salt.

THE small-pox is prevailing or spreading in almost every direction in the Pacific Coast country, and this brings to notice a fact with which we are all acquainted, which I have known from my boyhood, viz., that salt is strictly prohibited to small-pox patients, and all who have been exposed to the disease are advised to discard salt in order to modify its virulence.

There is no disease which affects the whole system more than small-pox. It is a terror to all classes. Yet, by care in diet and strict attention to right habits, it may be greatly modified, and in general rendered comparatively harmless.

But the question will arise, If salt is so necessary to the health and to the proper condition of the human system as many physicians say it is, why do they so uniformly endeavor to free the system from its presence as a preparation to pass safely through the ordeal of small-pox sickness? Why not, rather, advise a free use of salt to bring the system up to a healthy condition and thus strengthen it to do its work of resistance, if the use of salt is conducive to health and strength? I am not able to see the consistency of such a course.

Ben Pitman related that his brother's children were vaccinated three times, but it would not work. The physician made inquiry into the habits of the family and learned that they lived strictly according to the laws of hygiene. He readily attributed the failure to this cause, and *advised* the parents to let their children eat freely of pork, and it would then be sure to work!

Vaccination is but a lesser kind of small-pox, resorted to in order to "head off" the greater kind. And that which will entirely prevent the lesser will modify the greater. I have had some experience with small-pox, and I am well satisfied that in most cases it is not greatly to be feared if our habits are correct, and our systems are therefore pure.

The health reformer has one thing to console him in this unreasoning world. When danger and death in the form of pestilence stare people in the face, they flee to hygiene as a refuge; at least as far as their fears are able to control them, for, unfortunately, the great majority are moved only by fear, and not at all by principle, or a sense of duty.

The slothful man, who will not commence to till his field till hunger drives him, will have poor fare, and will become a by-word among his thrifty neighbors. But he is no more foolish than he who disregards the laws of health throughout the year, and then thinks to avert impending danger by living as he should for a few days. It takes a long time to free the system from impurities gathered there by long indulgence in wrong habits, and to overcome the influence of the change; but he who keeps the system free from impurities and has no change to make or to suffer from, has little to fear while others may well tremble.

Salt is one of the most powerful irritants used by man. As it is never assimilated or appropriated by the system, it is only salt as long as it remains, and consequently can be regarded as only an intruder from the time it is received until it is expelled.

Is salt "good" for small-pox patients?

J. H. WAGGONER.

Salem, Oregon, Aug., 1876.

Bran Bread.

WALKING one day with a friend on one of the streets of Philadelphia, I saw, painted in large letters on a passing cart, "bran bread." I called the attention of my friend to it, and

he said that it was a common term here for graham bread. It struck me as being rather a ridiculous name to apply to the illustrious graham bread.

Having occasion some time afterward to eat some of this so-called "bran bread," I found the name was quite applicable, and I felt wholly reconciled to its keeping the name.

On inquiry, I found that it is quite common here, and also in other large cities, for bakers to mix white flour and bran together, and make bread of the mixture and sell it for graham bread. It is a very much poorer bread than the graham, though perhaps an improvement on the white-flour bread, if there is not too large a portion of the bran used.

By this process, we are deprived of the shorts, or middlings, a very nutritious part of wheat, which is always present in graham bread.

The bread made from the genuine graham flour is easily recognized from that made from the mixture of white flour and bran; for it shows an evenness of color throughout, which the latter does not, as the bran is seldom evenly mixed with the flour. And then, any one at all familiar with the eating of graham bread, cannot be fooled by this "bran bread."

W. J. F.

Crucifying the Health Reform.—"And one shall say unto him, What are these wounds in thy hands? Then he shall answer, Those with which I was wounded in the house of my friends." Zech. 13 : 6.

It appears that our Lord was crucified by his own people, on the very place where he had often displayed his goodness to them during their history of many long ages, from the days of Abraham to the time when the above text was verified.

It is also a matter of history that every great reform which has been undertaken in the world, has been to a great extent injured, or perhaps wholly destroyed, by its professed friends. Sometimes an extreme, or its opposite, has run a reform into the ground; or the manner of its management, the indiscretion, hypocrisy, or ignorance of the adherents of these reforms, one or other, or all, of these causes, has brought many a good work to naught.

If it is observed, by opposers of health reform, that the advocates of this movement are often sick with obstinate and severe maladies, and that those who live upon unhygienic food are more healthy than professed hygienists, they will certainly conclude that health reform is a cheat and a humbug.

Those who advocate this reform occupy an important position, and are responsible for the success or failure of this great and highly important and beneficial movement. Something is out of joint when hygienists are more frequently and more severely sick than their neighbors. It will not do. Let us be for or against. Let us study the principles of health reform thoroughly, and carry them out carefully, with humility and wisdom. Then will our health be firmly established.

JOSEPH CLARKE.

Health Deformers.—One of our agents writes from a Western city: "I was unable to take any orders here. This city has a number of health *de*formers who do the cause great injury. Some are represented as having starved to death, while others got so low as to be useless, then commenced eating a meat diet, and got fat and hearty again. One woman told me she followed health reform until she was hardly able to walk across the house. Then she applied to a homeopathic doctor who told her she was starving, and commenced feeding her on birds and wild game, and then on a regular meat diet. Now she is as hearty as ever she was."

The above is a fair example of the injury which a few inconsistent persons who call themselves reformers, may do. No person was ever starved to death by a rational adoption of health reform. No person ever grew so weak as to be scarcely able to walk across a room by a similar course. When the real truth appears in these cases of apparent injury from health reform, it is always found that there was some great oversight, some fundamental error, which fully explains the mystery. Health reform is not responsible for any of the ill effects often attributed to it. People who attempt to adopt a reform in health often fall into the error of supposing that the reform consists wholly in a change of diet, or perhaps in the rejection of a single article of diet. For instance, a great many discard meat, and substitute greatly increased quantities of milk and sugar. Others eschew pork and lard, and attempt to supply their place with butter and suet. Still others make a very consistent reform in the quality of their food, but utterly disregard all restriction with reference to quantity, except the limit placed by the capacity of their stomachs. We might mention a hundred other similar inconsistencies common enough among those who call themselves health reformers. Such "reforms" are no reforms at all. Beef is more wholesome food than much sugar and milk. Food not strictly hygienic in character, eaten in moderation, is greatly preferable to excessive quantities of the most wholesome food.

All health reformers, and the public, also, should clearly understand that the results of genuine reform are *always beneficial;* and that those so-called health reformers who appear to suffer in consequence of changing their mode of living, are, as our correspondent says, "health *de*formers," rather than health reformers.

Reform in Dakota Territory.—A lady who has adopted the reform in this distant portion of the country writes us that since receiving the new cook book, she has, with one of her boarders, been living "strictly hygienic." Her boarder, a clerk in a store, was suffering severely from catarrh and dyspepsia, and was so exhausted by his labor that at night he was very nervous. Since adopting the reform, he declares that he "never felt so well as now in his life." She is waking up the people, also, so that the miller says he "never saw so many people eating graham," and both graham and oatmeal are coming into quite general use.

This lady is evidently making thorough work of reform. She orders a dollar's worth of cook books for her friends, and adds: "We have splendid luck with everything. We have tried bread, pies, puddings—not the kinds either that have cream, eggs, and sugar in. Splendidly we live; we are better satisfied with it, too, and know it is a success." She adds in a postscript: "That article on tea in the last [May] number has cured six persons of drinking the beverage, to my certain knowledge. 'It tastes too sweaty,' they say."

There is no better way to test the merits of the principles of health reform than to make a thorough, practical trial of them. No half-hearted reform will do; the work must be done faithfully, and then a rich return of health is sure.

Benefits Acknowledged.—Mr. J. W. Gibson, of River Falls, writes as follows:—

"I feel that it is but just to the cause of reformation for me to acknowledge publicly my gratitude to an unknown friend. About a year and a half ago, a stranger came to my house with the HEALTH REFORMER, to get me to subscribe for it. I told him I did not care for his book. He finally asked me if I would read it if he would give it to me. I said, Yes; I would read it. He took my name, and the HEALTH REFORMER was sent to my address for one year. I read it. When the year was up, I received, with the last number, an invitation to renew my subscription, and receive, as a gift, a book called the 'Household Manual.' I complied with the request, and am now a subscriber and a daily reader of the HEALTH REFORMER and the 'Manual,' and would not be without them for ten times the cost of them. I will add here a little of my experience for the benefit of all who may read it. I was a tobacco-user. By reading the REFORMER I became satisfied that it was injurious to me (I had been ordered by doctors to use it for dyspepsia); that it was the very thing that was causing my disease; and that it was also causing a general debility. While I was using tobacco, my food was meat, meat, meat. I became satisfied, by trial, that the tobacco wanted the meat, and the meat wanted the tobacco; and so long as I ate meat, I must have tobacco; so I quit using both, and am now a firm believer that I was a dupe to an unnatural appetite in both cases."

Hundreds of individuals might truthfully make the same acknowledgement which this gentleman has made. The fruits of missionary labor are appearing in all parts of the country, and many of the seeds of truth sown by the distribution of tracts, almanacs, and other health publications, are still germinating, to bring forth fruit in the future. Such reports are cheering to all earnest workers. Let us have more of them.

Results of Reform.—A new subscriber writes from Minnesota as follows:—

"Last winter I was induced to subscribe for your journal with the assurance that much benefit would be derived from the articles found therein from time to time. This, and more, has been realized; and I believe my present improved health is due to following—though not as closely as I should—the teachings of your valuable magazine. I had been under treatment for over a year with no apparent benefit, and had lost all confidence in drugs and doctors. Since last fall I have used no drugs, and have made a great change in my diet; to the latter I attribute my improved health."

We do not doubt that hundreds of our new subscribers could tell an experience almost identical with the above; we would be pleased to hear from some of them.

Ministers and Quacks.—The Baltimore *Gazette* makes the following very just criticisms:—

"The Rev. Mr. Mather, of Ohio, wants

quack advertisements kept out of the Methodist church journals. That is right. But he ought to go a step further and make it a clerical misdemeanor for ministers to write quack advertisements. More men, women, and children are annually poisoned by pills and nostrums which are recommended by preachers than in any other way. We have often thought that there is some mysterious alliance between quack doctors, preachers, and undertakers. Wonder if there is."

More about Mineral Springs.—In Washington, recently, a mineral spring was discovered, and the water sold readily at one cent a glass. A local paper says that an iron pipe was driven into a mass of reeking filth, and that the water obtained therefrom was called mineral. It adds: "If it had been called animal water, it would have been correct." But it is said that it has iron in it. No doubt of it. Old hoops, greasy kettles, sooty stovepipes, and pieces of filthy stoves have been covered up in the various fillings which have gradually filled up the once wide Tiber Creek. What a delicious drink! How invigorating this mineral spring water must be to the poor invalid struggling to regain health!

It is the testimony of all writers on the subject that some of the foulest water on the earth is to be found in wells in cities. Although it may be clear and cold, it may be teeming with poison. It is also the testimony of all chemists that there are many properties in water that cannot be detected by the closest analysis. Such would doubtless be the result with this water if it were analyzed. But as we know the source from which it comes, we can give a better analysis than any chemist.

In one hundred parts, there would be about five per cent. of old iron, seven of old shoes, three of old harness, nine of old clothes, fourteen of dead cats, rats, and dogs, thirty-five of sinks, and seventeen of stables, with the remaining ten per cent. of the other foulness of the great city. Give me my drinking water, please, without so much flavoring.

M. Wood.

Medical Quacks.—It is amusing to see how the proprietors of quack medicines appeal to the love of the marvelous, and the stories of the origin and discovery of these various nostrums, if gathered in a volume, would make a series second only to the Arabian Nights in absurdity and impossibility. The majority owe their origin to the Indians. It seems to be a popular notion that the savages, the most degraded and ignorant of all things human, possess wonderful skill in treating disease, an impression that a slight acquaintance with Indian life would soon dispel. Yet more than half the quack medicines are accredited to them. Here is one Mrs. Leggett, who says: "I have gone from the Indian medicine man of the Nevada, to the very pink of science (!) in order to inform and avail myself of all the information to be had on this subject, and must say that the Indian is far in advance, so far as relates to botanic medicine." Here is also "Doctor White," who "traveled through Europe and America, and the various inhabited islands in the different parts of the world, and among the Red Men of the forest," all to get his wonderful stuff. This White pamphlet is really a curiosity. The most horrible botch of a wood engraving is given to illustrate "Dr. White and his wife together with their blooming, healthy, and interesting children." We are told on the next page that the Doctor is "an extremely rich man, with an income of about five hundred thousand dollars annually." We should think that so wealthy a man would, as a matter of family pride, put forth a better family portrait.—*Am. Agriculturist.*

Reckless Eating.—"Forty-one guests of a hotel in Omaha were poisoned, some of them almost fatally, by eating ice-cream, the flavoring substance of which contained arsenic."

So says the N. Y. *Commercial Advertiser.* Such occurrences, happening frequently, as they do, should lead frail humanity to be wary in their gustatory enjoyments. But then, ice-cream *tastes* good, and if hundreds and thousands of the human race should get poisoned "almost fatally" as often as the moon changes, reckless eating would continue, and public feasts and private junkets would still demand the usual supply of foods and drink, *unhygienic.* E. N. N.

Questions and Answers.

Best Food for a Weak Stomach.—A California correspondent asks: 1. What is the best food for a weak stomach? 2. Is it good to eat milk, bread, and fruit together?

Ans. 1. The term "weak stomach" includes such a variety of diseased conditions that it would really be impossible to describe any single dietary which would be equally well adapted to all. In general, persons who are suffering from impaired digestive organs will find food prepared according to the directions in "Healthful Cookery," admirably

adapted to their wants. There are exceptional cases which require a special dietary. Some dyspeptics find it impossible to eat fruits and vegetables at the same meal without suffering from indigestion in consequence. Persons with "weak stomachs" may note this fact with advantage. Other dyspeptics find it next to impossible to digest farinaceous food, but digest nitrogenous food without difficulty. Persons of the latter class may require some animal food—as beefsteak or eggs, prepared in the most healthful manner—for a few days, until the digestive organs accquire sufficient strength to allow a different diet. It is not necessary, in most cases of this kind, to exclude farinaceous food altogether, but only to limit it to a smaller quantity than usual, while substituting some kind of animal food. This substitution is not necessitated by any demand on the part of the system for *animal* food, but by such a condition of torpidity of the stomach as allows the easily fermentable farinaceous substances to ferment or sour before digestion is effected. Highly nitrogenized vegetable food would be much superior to animal food if it could be readily obtained.

2. A dyspeptic will usually find it much to the advantage of his stomach to avoid milk as much as possible. If eaten at all, it should be in great moderation. Fruits, and either sweet or sour substances of any kind, if eaten with milk, increase its liability to occasion indigestion.

Enlarged Spleen—Sore Eyes.—M. C., Mo., has had the ague for some time. Stopped taking medicine a few weeks since, when the chills also ceased. Now has what she is told is an ague cake, and sore eyes, concerning which she wishes advice.

Ans. For the difficulty in the spleen, apply alternate hot and cold applications to the side, just above the affected organ, and wear the wet abdominal bandage. The bandage should be applied at night in accordance with directions given in "Uses of Water," a work for sale at this Office There are so many varieties of sore eyes that we can give you no advice concerning your difficulty without more definite knowledge. We would advise you to consult your nearest oculist, and ascertain the nature of the disease affecting your eyes.

Hard Water, etc.—W. F. asks: 1. Can you give a method of rendering limestone water soft and wholesome so that it can be used for drinking and culinary purposes without producing deleterious effects upon the human system? 2. Are the Globe and Craig microscopes the same, and of equal power?

Ans. 1. A simple and efficient means of rendering hard water soft and pure is a desideratum which has been long sought; we know of none more reliable and practicable than boiling, and this is not wholly successful. There are several other methods, but those which are of value are too complicated for domestic use. The lime in the water is held in solution chiefly by the aid of carbonic acid. By boiling, this gas is expelled, and the lime is thrown down. This is the reason that lime accumulates in tea-kettles in limestone regions. To render water soft in this way, it should be boiled for an hour or two, at least. A few pieces of broken crockery placed in the vessel in which the water is boiled, will facilitate the process somewhat. After boiling, turn off the water into clean vessels and pour from one to another in a small stream, continuing the process for a few minutes to remove the insipid taste by the restoration of atmospheric air, which is expelled from the water by boiling, together with the carbonic acid gas. By this process, hard water may be very greatly improved, if not rendered wholly soft, if the operation is carefully performed. Distillation, or evaporating the water and allowing it to condense, is a rather tedious but entirely efficient way of getting soft water from hard. A good apparatus for condensing can be constructed by any ingenious tin-smith at an expense of a few shillings. Various compounds sold for the purpose of rendering hard water soft may improve it for washing purposes; but they render it still more unfit to drink, or to use in cooking.

2. The Globe and Craig microscopes are not the same, if we are correctly informed, though somewhat alike. The Globe is a much better instrument than was the Craig.

Mrs. A. L. T., N. Y.: A child fifteen months old may be weaned with safety, if proper care is used. A very good substitute for mother's milk at first would be equal parts of barley water and milk from a good cow. Prepare the barley water according to directions given in Household Department of September REFORMER.

M. M. A., Ill.: The best thing you can do for your eyesight is to improve your general health, and take such treatment as will relieve the local ailments which you mention. This you can do best at some good health institution. The best are advertised in this journal; and to one of these we would advise you to go at your earliest convenience.

FARM AND HOUSEHOLD.

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

Cistern Filters.—The best way to provide a filter for a brick cistern is to put a partition through it of brick, having the pump on one side and the receiving pipe on the other. No filter can be made of sufficient capacity to receive the water from the pipe and allow it to flow through into the cistern without, in a heavy shower, running over and wasting the water. The partition should be curved, swelling out toward the side into which the water runs, to prevent the water pressing it over in case the opposite side should be empty, and should be built of brick laid flatwise in cement, and plastered well on both sides with the same. In laying the partition, each alternate brick in the bottom course should be left out, and upon the floor of the cistern, and entirely across it on the receiving side, about a foot from the partition, should be built a brick wall eighteen inches high. The space between the partition wall and this low one should be filled as follows: First, coarse gravel, six inches; coarse sand, three inches; pounded charcoal, six inches; and fine sand, enough to nearly fill the space. The receiving pipe should be bent so as not to allow the water to pour upon the filter. A cistern thus built will furnish, as long as it lasts, purer, better, and more healthful drinking water than any spring or well in the world. Should the filter become foul, in time, the packing in the box may be easily removed and clean materials put in its place.—*Inter-Ocean.*

Thriftless Wives.—There are nearly as many bad wives as bad husbands. Many men who work hard and try to do well in life are neglected and abused by improvident women.

They are condemned to eat the poorest dinners, when they provide the best the market affords.

On heavy bread, soggy vegetables, muddy coffee, and tough pie-crust, how can a woman expect her husband to be pleasant and loving? Such men often drink whisky because their food distresses them—as it would any one who had not a cast-iron stomach—and the habit of intemperance is often in this way begun, through the fault of a wife.

It costs more to cook poorly than to make food good and palatable.

If a woman runs home from a neighbor's just in time to throw a pie together, bake it, bring it on the dinner-table hot, she commits a great offense against her family.

If a man has only an hour to go home, get his dinner, and return to business, it should be ready for him promptly on time, else he will eat very hot food in the greatest haste, and start off for a rapid walk, all of which are very bad, and will soon show their effects upon the strongest man.

When her husband gets peevish, low-spirited, and forgetful of the little acts of love and kindness he taught her to expect in days agone, a woman who is such a housekeeper need not sit in the twilight and wonder at sad changes.

Dyspepsia is not conducive to tender thoughts or happiness.

Had she acted her part with half the zeal and industry of her husband, all would have been well, and she could still sit in the sunshine of earlier days.—*Ex.*

Banking the House.—People who have cool houses usually throw up around the sides, on the approach of cold weather, an embankment of some kind. Sometimes earth is used; but very often, especially in the country, stable manure is employed. The latter practice is a very objectionable one. During the coldest months, when everything above ground, out-of-doors, is frozen up, no harm may result. But the first warm days of spring, or perhaps a "January thaw," restores the putrescent mass to its native condition, and then foul odors and poisonous effluvia are poured into the dwelling from all sides. The proper way to bank a house is to place about it a sufficient quantity of straw, hay, or leaves, and then cover with dry earth to the depth of a few inches. Even such a banking as this should be removed as early as possible in the spring, to give light and ventilation to the cellar.

Keeping Tomatoes.—By the exercise of a little care, tomatoes may be kept in excellent condition for use for a long time after frost comes, even until Christmas. The best way is to pull up the vines by the roots just before they are injured by a hard frost, and hang them up in a light cellar or basement. Even those which have not begun to ripen will mature very well when treated in this way. Another plan is to pick from the vines all fruit which has attained nearly its

full size, as soon as there is imminent danger from frost. Place the tomatoes in a sunny place, covering them well nights, and they will continue to ripen for six or eight weeks after the vines are killed out of doors. By taking a little care to cover the vines nights, as soon as there is danger from frost, they may be be kept growing upon the vines for a long time after they would otherwise have been destroyed by the frost.

To Remove Nitrate of Silver Stains.—The following method of removing indelible ink and other silver stains, without the use of cyanide of potassium, is given by Grimm in the *Polytechnisches Notizblatt:* Chloride of copper is first applied to the tissue; it is next washed with hyposulphite of soda solution, and afterward with water. It is said that this may be employed on colored woven cotton tissues. For white cottons and linens, dilute solutions of permanganate of potash and hydrochloric acid, followed by the hyposulphite of soda and clear water, are preferable. For cleaning the hands, we use iodine dissolved either in iodide of potassium or in alcohol, followed by aqua ammonia.—*Sc. Am.*

Homes of a Century Ago.—The Boston *Journal of Chemistry* thus describes the households of one hundred years ago:—

"Our fathers were groping in almost utter darkness, so far as science was concerned, and but little progress had been made in invention and the arts; scarcely one of the modern contrivances for cooking and for warming and lighting dwellings was known. Not a pound of coal or cubic foot of illuminating gas had been burned in the country. No iron stoves were used, and no contrivances for economizing heat were employed until Dr. Franklin invented the iron-frame fire-place, which still bears his name. All the cooking and warming, in town and country, were done by the aid of fire kindled upon the brick hearth or in the brick oven. Pine knots or tallow candles furnished the light for the long winter evenings, and sanded floors supplied the place of rugs and carpets.

"The water used for household purposes was drawn from deep wells, by the creaking 'sweep,' and it is a curious circumstance that both the well and the building meeting the necessities of a water closet were often at long distances from the house. In a cold night, to be called toward either of them was something dreadful to think of. No form of pump was used in this country, so far as we learn, until after the commencement of the present century. There were no friction matches in those early days, by the aid of which a fire could be speedily kindled; and if the fire went out on the hearth over night, and the tinder was damp, so the sparks would not 'catch,' the alternative remained of wading through the snow a mile or so, to borrow a brand of a neighbor. Only one room in any house was warmed (unless some one in the family were ill); in all the rest the temperature was at zero during many nights in winter. The men and women of a hundred years ago undressed and retired to their beds at night in an atmosphere colder than that of our modern barns and wood-sheds, and they never complained."

Dried Tomatoes.—We quote the following, with a few slight modifications, from the *American Agriculturist:*—

"Housekeepers in the country, who have many tomatoes and few cans, can easily preserve a large quantity of this very easily raised fruit, by drying it. This method requires little outlay, and comparatively little trouble. Scald and peel the tomatoes, as for canning. Boil them slowly in a porcelain kettle or stone jar, until the original quantity is reduced one-half. Add half a cupful of sugar to a gallon of stewed tomatoes. Spread on plates and dry quickly, *without scorching.* As the moisture dries away and the stewed fruit takes shape, scrape it up so that both sides may dry, and let the contents of several plates, heaped up lightly, stand in bright sunshine a little while before putting away. Store in bags and keep dry.

"When wanted for use, put a small quantity soaking in considerable water several hours, or over night. Stew in the same water long and slowly—three or four hours—keeping boiling water at hand to add if it grows thick, and so is in danger of burning. It should be quite thin when done, and may be thickened with bread crumbs."

Some will prefer to omit the sugar. Others will think it essential to add a little salt. Half a teaspoonful to the gallon will be an abundance for almost any taste; ours requires none. The tomato is a fruit; and we would as soon think of salting grapes as tomatoes.

—One pound of coke evaporates 9 lbs. water; 1 lb. of coal, the same; 1 lb. slack, 4 lbs. water; 1 lb. oak (dry), 4½ lbs. water; 1 lb. pine, 2½ lbs. water.

POPULAR SCIENCE.

In this Department Will Be Noted the Progress of Science, New Discoveries and Inventions.

Animal Electricity—The action of electric fishes may be likened to that of lightning, in being independent of our intention. The shocks of the gymnotus are particularly formidable. Alexander Humboldt relates that, having put both his feet on one of these fish, just taken from the water, he experienced so violent a shock that he felt pains in all his joints the rest of the day. These shocks throw the strongest animals down, and it is necessary to avoid rivers frequented by the gymnotus, because, in attempting to ford them, horses or mules might be killed by the discharges. To capture these fish, the Indians drive wild horses into the water, stirring the eels up out of the mud by their trampling. The yellowish livid creatures press against the horses under their bellies, throw down the greater part and kill some of them; but, exhausted in their turn, they are then easily taken with the aid of small harpoons. The savages employ them to cure paralysis. Faraday compares the shock of a gymnotus, which he had an opportunity to study, to that of a strong battery of fifteen jars. A live eel out of water, when touched by the hand, communicates a shock strong in proportion to the extent of surface in contact, and the stroke is felt up to the shoulder, and followed by a very unpleasant numbness. It may be transmitted through twenty persons in a chain, the first one touching the back, and the last the belly, of the eel. The fishermen discover the presence of an eel in their nets by experiencing a shock in throwing pailfuls of water on, to wash them. Water is a good conductor, and this fish kills or benumbs the animals it feeds on by delivering a discharge through the water.—*Pop. Sc. Month.*

The Planet Vulcan.—The astronomers of Europe are just now excited by the rediscovery of Leverrier's planet, Vulcan. Some twenty years ago, the great French astronomer announced that certain perturbations in the orbit of Mercury could only be accounted for by the existence of another planet still nearer the sun; even as the perturbation of Saturn had enabled him to discover the planet Neptune. Within three years after Leverrier's announcement, a French observer, Dr. Loscarbault, detected Vulcan in his transit across the sun's disk; but inasmuch as he had not been seen again since then, most savants have begun to doubt whether he was ever seen at all. But the latest Parisian journals inform us that two eminent astronomers at the observatory in that city—M. Porro and M. Wolf, of Zurich—have just found Vulcan during his transit as before. It is not stated whether their observations were sufficient for the precise calculation of the elements of the planet. Kepler's law, however, would reduce the time of Vulcan's revolution around the sun to about a month. This youngest of the planets must swim a sea of almost unimaginable light and heat, and must be uninhabitable by any form of life known to us.—*Sel.*

Discovery at Pompeii.—A discovery has been made at Pompeii, consisting of a number of objects of gold and silver, and close to them the carbonized skeletons of two men, who would seem to have been borne down in the storm of ashes while endeavoring to escape with their valuables or plunder. Among the articles found are eight rings, six pieces of money, two pairs of earrings, two large armlets, each ornamented with thirteen pairs of half globes, with little shells upon them, held together with chainwork, and a necklace of chainwork, all of gold; a silver ring, 332 pieces of silver money, a *casserole* of the same material broken in pieces, and three large bronze coins.

The city of Pompeii, it will be remembered, was completely buried up in the year 79, nearly 1,800 years ago, by ashes from the neighboring volcano of Vesuvius. The ruins of the city were rediscovered in 1748.

Specific Gravity.—When the king asked Archimedes if he could find out whether the jewelers had, in making the crown, kept back some of the gold, and supplied its weight with some other metal, the philosopher was put to thinking and experimenting; and one day he exclaimed, with excited energy, "*Eureka! Eureka!*" ("I have found it! I have found it!")

What had he found? He had discovered that any solid body, put into a vessel of water, displaces its own bulk of water; and therefore, if the sides of the vessel are high enough to prevent its running over, the water will

rise to a certain height. He now got one ball of gold and another of silver, each weighing exactly as much as the crown. Of course the balls were not the same size, because silver is lighter than gold and so it takes more of it to make the same weight. He first put the gold into a basin of water, and marked on the side of the vessel the height to which the water rose. Next, taking out the gold, he put in the silver ball, which, though it weighed the same, yet, being larger, made the water rise higher; and this height he also marked. Lastly, he took out the silver ball and put in the crown. Now, if the crown had been pure gold, the water would have risen only up to the mark of the gold ball; but it rose higher, and stood between the gold and the silver mark, showing that silver had been mixed with it, making it more bulky. This was the first attempt to measure the specific gravity of different substances.—*Miss Buckley.*

Cave-Dwellers of France.—In the southwest of France, at no great distance from the river Vézère, are situated the caves which were inhabited by a race of Troglodytes toward the close of the Quaternary geological period. The openings of these caves faced all points of the compass, except the north. They were inhabited throughout the entire year, as is shown by the remnants still found there of young reindeer, in every stage of development. From the teeth, bones, and budding horns of these animals, we can determine their age, and the season of the year when they were killed; and the evidence of this kind furnished us by the contents of the caves shows that the Troglodytes had a fixed abode—that they were not nomadic.

When the inhabitants of the caves went fishing or hunting, they closed up the doorways to exclude beasts of prey. Only one bone has been found, and that at La Madeline, which bears any tokens of having been gnawed by a wild beast. It shows the marks of a hyena's teeth, the animal having in some way gained admittance to the cave. Hyenas were scarce in the time of our Troglodytes, but wolves and foxes abounded; and we should find the marks of their teeth upon the bones strewed about in the caves, were it not that the inhabitants kept their dwellings carefully shut against such intruders. But what were the means employed to keep them out? In sepulchral caves we find the entrance closed by a stone slab; but a dwelling-place would require a door more easily opened and shut than that. Besides, we find no trace whatsoever of stone doors, and therefore it is supposed that the Troglodytes barricaded their door-ways with hurdles.—*Sel.*

Centenarian Birds.—It may not be generally known, says the Wexford *Independent*, that the eagle, raven, and parrot are each centenarians. An eagle kept in Vienna died after a confinement of 114 years; and in an ancient oak still known as the raven tree, the same pair of ravens are believed to have fixed their residence for a series of more than 90 years. Swans upon the river Thames, about whose age there can be no mistake—since they are annually marked by the Vintner's Company, under whose keeping they have been for five centuries—have been known to survive 150 years and more. The melody of the dying swan is mythological. Upon approach of death the bird quits the water, sits down upon the bank, lays its head upon the ground, expands its wings a trifle, and expires, uttering no sound.

Educating Fleas.—The editor of *La Nature* has been investigating fleas, with a view of discovering where, in those aggravating insects, resides the capability of being educated. His conclusion is radical; he says they cannot be educated, and that all the tricks so ingeniously exhibited by self-styled trainers are merely caused by the natural efforts of the insect to escape. Any one can make them draw minute wagons or go through similar performances, if care be taken to secure them to their work so that they cannot jump. It seems to us, however, that it must require considerable skill and ingenuity to hold the lively creatures while the securing operation is in progress.—*Sc. American.*

News and Miscellany.

—Ben Butler is again the republican candidate for representative to Congress from Mass.

—Prince Milan has been declared king by the Servians.

—Mr. Moody has begun his series of revival meetings in Chicago.

—Berlin proposes to hold an international exhibition in 1882.

—The Chinese have recently opened four new ports to foreign trade.

—The new Turkish sultan has been succeeded by his brother.

—The prospect is good for a speedy cessation of the war between the Turks and the Servians.

—The number of pay admissions at the Centennial Exhibition one day last week was 257,286.

—The sentence of the notorious Jesse Pom-

eroy has been commuted to imprisonment for life.

—Victoria Woodhull has obtained an absolute divorce from Col. Blood on the ground of adultery.

—Commodore Vanderbilt has been so seriously ill for some time that he is not expected to recover.

—John D. Lee has at last been convicted of murder in the first degree for the part he acted in the horrible Mountain Meadow massacre in 1857.

—A treaty has been effected with one of the Black Hills Indian tribes which requires them to leave the Hills and remove to Indian Territory.

—For some reason there has been a great efflux of Jews to Palestine for the last few years. The population of Jerusalem has doubled in ten years.

—The Indian campaign is pronounced a miserable failure by critics at a distance. The participants in the chase after redskins and wild ponies may view the matter differently.

—Horses, mules, cows, carriages, buggies, and wagons, belonging to Brigham Young, to the amount of $10,000, were seized and sold by the government to pay Ann Eliza's alimony fee and court expenses.

—An uprising of negroes in Georgia occurred about the middle of last month. Their object was to defeat the ends of justice. Several whites were killed, railroad tracks torn up, and other depredations committed.

—Farmers and merchants under Spanish rule in Cuba are having a hard time. Farmers are obliged to send their cattle to the forts for protection, while merchants are taxed so heavily that their taxes exceed their profits.

—Boss Tweed has been discovered in Spain, together with his son. He is now on his way to this country a prisoner, on board the United States frigate, Franklin. He denies that his name is Tweed, claiming to be one Secor.

—The yellow fever is raging in some of the Southern States. In a sea-port town in Georgia, one-fourth of the population are sick. At Brunswick, Ga., half the population are suffering with the disease.

—Dr. Brown-Séquard has been delivering a series of lectures in London, in which he claims to overturn all the arguments of phrenologists in favor of a specialization of function in the brain by clinical facts and careful experiments.

—Japanese journalists must be a favored race. A recent decree of the Mikado gives them complete freedom of postage. They are now allowed to send whatever communications they may think fit from any part of Japan to any other, free of expense.

—The wheat crop of England the last season is reported as unusually small. Nearly 700,000 less acres of land were devoted to its culture than in former years. In consequence of this deficiency, she will depend largely upon this country for her supply of breadstuffs, a fact which will rejoice our farmers as it augurs an increase in prices.

—Sept. 17, a very severe storm passed over the States bordering on the Atlantic Coast. Considerable damage was done in the destruction of railroads, and the demolition of buildings. A large number of houses were unroofed in Philadelphia, some damage being done the Exhibition buildings.

—It has at last been decided to cut the canal to connect the Atlantic and Pacific Oceans, though the Nicaragua Isthmus. The cost of construction is estimated at nearly $66,000,000, and many engineers consider it will really cost $100,000,000, and consume five years.

—Dr. Geo. B. Winship died in Boston on Tuesday. He was noted for his ardent belief in muscular exertion. He had the arms and shoulders of a Hercules, being otherwise somewhat diminutive. He once lifted a weight of 3,000 pounds, and then, proceeding to lecture on his hobby, fainted. It may be observed that after a great amount of training he has died at the age of 42.—*N. Y. Tribune.*

—Prof. Huxley, the noted champion of evolution, has returned to England after a sojourn of several weeks in this country. He recently delivered three lectures in New York on his favorite theme, in which he gave an admirable presentation of the arguments in favor of evolution without attacking orthodox views of creation.

—A fire recently occurred in Shantytown, the name applied to the collection of small wooden buildings adjacent to the Exhibition grounds at Philadelphia. About $80,000 worth of property was destroyed before the fire was extinguished. The proximity to the Exhibition grounds and buildings was so close that the heat was felt inside of the Main Building, and the paint upon the gates was scorched.

—The deepest perpendicular mining shaft in the world is in Prizibram, Bohemia, and measures 3,280 feet. It is in a lead mine, and is supposed to have been begun about 350 years ago. In other places greater depths have been reached, but not by straight lines. A rock-salt bore near Berlin is 4,175 feet deep, and a coal mine in Belgium 3,542. The deepest hole ever bored is an artesian well, of 5,500 feet, at Potsdam, Mo.

—The S. D. Adventists of Michigan recently closed, at Lansing, Mich., one of the most successful of their series of annual camp-meetings during the present season. This was the largest gathering of the denomination ever held, 120 family tents being pitched on the ground during the meeting. The encampment numbered about 2,000 people on the principal days of the meeting. It was estimated that 10,000 were in attendance on Sunday. Daily reports of the meeting were published in nearly all of the Chicago and Detroit dailies, as well as in the smaller dailies throughout the State.

Items for the Month.

☞ This number has been rendered late by a combination of circumstances beyond our control. We shall be on time, as usual, next month.

Family Health Almanac for 1877.

We are ready to fill orders for the Family Health Almanac in any quantities, from a single copy to 10,000. We determined to be ahead of the drug and quack medicine almanacs, and judge by the way orders are being received that our hygienic friends are equally anxious to forestall those emissaries of evil. Up to the present date, we have received and partly filled orders for more than 35,000 copies of the new Almanac. We expect to supply as many more within the next six weeks.

NOW IS THE TIME TO WORK.

One Hundred Thousand Health Almanacs ought to be placed in as many families before the patent medicine almanacs obtain a foothold. Here is a fine opportunity for every one to do something. How many are ready to engage in this grand missionary project? The publishers have done their part in preparing a neat and useful work, and affording it at a price so low as to make the cost an insignificant trifle. The co-operation of those who are interested in this reform, and who have received inestimable benefits from it, is now all that is needed to make the enterprise a complete success.

Of the first edition, that for 1875, more than 50,000 were sold. The edition for 1876 reached a circulation of nearly 60,000. The indications for the present year are that both the former editions will be far outrivaled in circulation by this for 1877.

In order to make the Almanac accessible to even the poorest, and especially to encourage missionary efforts by both organized societies and private individuals, the publishers make the following

LIBERAL OFFER!

Single copies, post-paid, 10 cts.

By mail, post-paid, 14 copies for $1.00.

Lots of 100 or more, by freight or express, at 50 per cent. discount.

Special rates to Missionary Societies.

ANOTHER OFFER.—Many who would otherwise order copies of the Almanac sent to quite a large number of friends, may be deterred from so doing by the expense of paying double postage, first from the Office to themselves, and thence to their friends. We propose to save this extra expense by the following plan :—

Make out a list of thirteen names of persons to whom you wish to send the Almanac. Write each name plainly, and accompany it by the proper address in full. Inclose the list in a strong envelope with $1.00 in cash, and address it to the HEALTH REFORMER, Battle Creek, Mich. As soon as the letter reaches this Office, a copy of the Almanac will be mailed to each one of the persons named in the list. By this plan, the individual sending the names is saved the expense of extra postage, and the additional trouble of wrapping singly and mailing each of the thirteen copies. This trouble we take upon ourselves without making any extra charge for the labor, as we have facilities for doing this kind of work which our patrons do not usually possess.

CONTENTS OF THE NEW ALMANAC.—We have spared no pains to make the Almanac for 1877 superior to both its predecessors both in mechanical execution, and in the character of its contents. It contains no long, prosy dissertations on subjects of mere theoretical interest, but is filled with short, terse, interesting bits of practical common sense. Here is a list of the principal articles :—

Hasty Meals—Connecticut Laws against Tobacco-Using—How to Cure a Cold—Medicine to the Dogs—Biliousness—Temperance Bitters—To Destroy Foul Odors—The Solar System—The Scrofulous Scavenger—The Sun—The Planets—Night Air—Eating Between Meals—Meteors—A Cold—Bathing—Vegetable vs. Animal Food—Effects of Tight-Lacing—The Hygienic System—Does the Bible Uphold Intemperance?—Cleanliness—Dialogue with a Smoker—Don't Smother the Innocents—Origin of Water-Cure—A Mineral Spring in the Well—Properties of Drugs—What Was Down his Throat—Condiments—Quick Relief for Acute Pain—Bread for Dyspeptics—Mineral Springs—How to Take a Pack—Drowning and Suffocation—Treatment of the Drowned—Dirt in the Eye—What to Do in Poisoning—Poisonous Gases—Poisonous Wall-Paper—Adulterated Sirup—To Test Drinking Water—Food and Drink—Time for Meals—How to Avoid Contagion—Farm Accounts—Population of States and Territories—Business Law—To Remove Grease from Silk—Dangerous Kerosene Oil—Postal Laws. On the last page of the cover is found a condensed calendar for the entire year, which will add greatly to the convenience of the work.

Who has not a dozen friends, each of whom might be greatly benefited by the receipt of an almanac free from any of the glaring evils which render so obnoxious to good sense, and often decency, the nostrum vendor's advertising medium? There are few who could not easily make out a list of fifty such. A mere trifle will place in their hands an amount of information worth to each ten times the cost of the whole. Here is a grand chance for philanthropy.