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

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DRESS REFORM.

NUMBER THREE.

“WHAT SHALL WE WEAR?”

“You have condemned nearly every article of dress we possess,” says one, “now what shall we wear?”

If ladies would forget fashion for a little time, and make their garments in accordance with sound common sense and the principles already set forth, they would encounter no difficulty in deciding what to wear, and would soon be delighted to find themselves emancipated from the numerous ills which afflict them in consequence of their present mode of dress, as has been already pointed out. It may be that circumstances will not always allow of the adoption of a dress which shall be wholly physiological in every respect, which is to be regretted. Custom has so long ruled that we are forced to yield a little to its mandates, though reluctantly. But it is quite possible for every woman to adopt a dress which shall be, in all essential particulars, free from serious defects, and that without sacrificing an iota of her native grace or modesty, or making a martyr of herself or her friends.

In the first place, the corset and all its substitutes and subterfuges, tight belts, and every other device for compressing the waist or any other part of the body, can be at once discarded without the attention of any one being drawn to the fact, unless it be by the more elastic and graceful step, the brighter color of the face, and the general improvement in health in all respects. Suppose the waist does expand a little—or a good deal, even—beyond the standard seventeen inches; is it any disgrace? No, indeed. A woman ought to be proud of a large waist. A large waist indicates large lungs and large vital organs, which, in turn, represent the probabilities of long life. A small waist indicates precisely

the opposite. Why should woman—the gentler sex—be compelled to wear a strait-jacket, like a madman or a criminal, while man is allowed to go untrammelled by any such impediment? A strong popular sentiment in favor of large waists would soon do away with the foolish emulation to look frail and slender. If required, a suitable garment may be made to support the bust, which will fit the form neatly without compressing any part. Able physicians declare that compression of this part of the body, and the wearing of an undue amount of clothing, thus producing a local increase of temperature, is the cause of many of the peculiar diseases of woman, acting through reflex influence upon internal organs.

HOW TO DRESS WARMLY.

The next important step should be to regulate the clothing properly. The whole body should be clad in soft flannel from neck to wrists and ankles nearly the year round. It is better to have the underclothing for the upper part of the body and that for the limbs combined in one garment. If arranged in two garments, they should only meet, and not overlap, as this gives too much additional heat over the abdominal organs. A woman's limbs require as many thicknesses as a man's; and a garment which fits the limb closely will afford four times the protection given by a loose skirt. Thick shoes or boots with high tops, and heavy woolen stockings which are drawn up outside the garments clothing the limbs, complete the provision for warmth. Leggings should be worn in cold weather.

All the undergarments should be suspended from the shoulders by means of waists or suspenders. Waists are doubtless the better for the purpose. If several garments are to be suspended from the same waist, the rows of buttons to which they are attached should be arranged one above another, to avoid bringing several bindings together.

The two *most important* particulars having

been secured—freedom from compression and uniform temperature—the outside dress may receive attention. It should be as simple as possible, and consistent with the mental comfort of the wearer. Gaudy colors and conspicuous ornaments betray poor taste and a vain, shallow mind. Many flounces, folds, and heavy overskirts are objectionable on account of their weight, to say nothing of the useless expenditure of time and money which they occasion.

The proper length of the skirt is a question of interest in this connection. How long shall it be? If physiology alone were asked the question, the answer would be that women do not need long skirts more than men, and that they are really an impediment to locomotion, and often very inconvenient. Custom says that woman *must* wear skirts. Fashion says she *must* wear *long* skirts. Custom and fashion have prevailed so long that they have created an artificial modesty which seems to demand that woman's dress must differ from man's by the addition of a skirt, at least, even if they are alike in all other particulars. This being the case, the best we can do is to modify the skirt so that it will be as free from objections as possible. The great evils of long skirts are, unnecessary weight, the accumulation of moisture which is transferred to the feet and ankles, and sundry inconveniences to the wearer in passing over rough places, up and down stairs, etc.

The obvious remedy for these defects is to curtail the length of the dress. The train must be discarded at once as too absurd and uncleanly, with its filthy load of gleanings from the gutter, to be tolerated. Any further improvement, to be of practical utility, must shorten the skirt to the top of the ankle, at least; and a thorough-going reformer will want to make it five or six inches shorter. A dress which is eight or nine inches from the floor has evident advantages over any of greater length. It needs no attention in going up and down stairs, and is in no danger from the many accidents to which long dresses are fated. A dress of this length may be worn with loose pants of the same material reaching to the ankle or instep. Some prefer to gather the bottom of the pants, and fasten by a band about the ankle at the top of the shoe. This style presents some advantages for winter wear, as it more thoroughly protects the ankle. This dress has been worn quite extensively in this country during the last ten years, and, when rightly represented, it has been universally pronounced by competent judges to be the most healthful, simple, modest, and sensible dress worn. Some object to it because of its oddity

—the only objection possible. Many good things are odd, but they are *good* nevertheless. Should people forego every good thing which does not happen to be just in style, a great share of the greatest good would be sacrificed. Every new thing is odd at first. What is odd to-day is familiar to-morrow. Oddity is merely a frivolous conceit of the brain, which soon vanishes, and is really no property of the thing itself.

But those who think that oddity is really so serious an objection as to prevent their adoption of the dress, need not conclude that they cannot reform at all in this direction.

They can secure the chief and most essential features of a healthful dress by shortening the skirt to the ankle, or shoe-top, and protecting the ankles with leggins. The under-clothing can be in full accord with the requirements of health.

A very serious mistake is made by those who adopt the reform in the length of the dress, even to the fullest extent, but make no reform in other respects. Such overlook the chief defects which need reformation, paying their whole attention to a point which, considered from a physiological stand-point, is of minor importance, although well deserving of all the attention it receives.

The curious reader may ask, "Do you advocate, then, the 'short dress'? or the 'bloomer dress'? or the 'American costume'?" We answer, No, to each question. We *advocate* no particular style of dress. We simply state the principles which should be regarded in clothing the body, from a medical stand-point, leaving each to decide upon the particular style of dress to be adopted. We strongly recommend, however, the fearless adoption of the dress which the most satisfactorily meets the wants of the body, as being the course the most worthy of being followed by refined, intelligent, independent, Christian women.

The following are a few paragraphs from the writings of eminent physicians and others who have made a special study of this subject; the first is from Abba Gould Woolson:—

"Looking over the world at large, it would appear that, just in proportion as a nation advances in general intelligence and Christian virtue, in just that proportion does the female half of its people delight in dressing so as to defy nature's laws. It is a curious anomaly, which I will not stop to explain. So long as women remain heathen, they may be servile, ignorant, and frivolous, but they do appear to have some respect for their bodies. The free-flowing outlines of the costumes worn by Greek and Roman maids

and matrons were not more beautiful to the eye of the artist, as he pictured them in the sacred processions that wind across their vases and bas-reliefs, than they were conducive to the full development of that body whose strength and beauty their people worshiped with such reverent homage. And could mothers, begirt with corsets, laced and panniered after the modes of our time, have given birth to the race of athletic young heroes who strove before their assembled countrymen for the crowns of honor at national games? All the women of the East, as well as those of Siam, drape themselves to-day with light folds of unsewed cloth, and know nothing of our elaborate fastenings and complicated layers of inconveniences. Of the women of the Sandwich Islands, a traveler tells us: "Their loose dress gives grace as well as dignity to their movements, and whoever invented it for them deserves more credit than he has received."

"But cross the boundaries of any civilized and Christian land, and you behold a race of gasping, nervous, and despairing women, who, with their compressed ribs, torpid lungs, hobbling feet, and bilious stomachs, evidently consider it their first duty to mortify the flesh, and to render themselves and all humanity belonging to them as frail and uncomfortable as possible. If it be true that the New Testament and the Parisian fashion-book do necessarily go hand in hand, we might well hesitate before sending more missionaries abroad to the happy heathen, endeavoring to save their souls while making sure of ruining their bodies."

"Of all nations of the earth, we suffer the most from the cruel tyrannies of dress. None need a serviceable costume so much as we, and none have one so bad. Indeed, American ladies are known abroad for two distinguishing traits (besides, possibly, their beauty and self-reliance), and these are their ill-health and their extravagant devotion to dress. The styles they affect, in their reckless disregard of hygienic rules, strike sturdy German and English matrons with dismay. The latter shiver to behold the gorgeous flimsiness in which such delicate travelers venture to clothe themselves; and the travelers, in their turn, arch sharp eyebrows and endure twinges of "aromatic pain" whenever these broad-waisted, burly dames cross their vision, in stuffs of coarse woolen and colors too horrible to be borne. At home, our country-woman suffers the more, because she is not content to be useless and indolent in all her fine array. Her energy, her intelligence in other matters, must exercise themselves within her house and without it. With strength impaired, she

attempts to live the life of the busy worker in a dress that the merest idler would find burdensome and oppressive. The result is a pain and a weariness that lead inevitably to discomfort and disease; but she has not yet learned that while discomfort is a sin against herself, disease is a sin against God."

The following is a brief extract from a lecture by Arvilla B. Haynes, M. D., a distinguished lady physician:—

"The externals of dress, though they involve a moral question, seem to me of far less consequence than the arrangement of the under-dress; for that involves health. As now generally worn, the under-dress is weakening the present generation of women; and, from the unvarying laws of nature, the effect must be transmitted to future generations. Mothers will confer upon their offspring a lower and lower vitality; and, when we consider the already fearful mortality in infancy and childhood, there is little hope for the future, unless we can have some reform in this direction. And when the offspring is not thus early cut off from mortal life, in many cases tendencies to disease are inherited, which become active sooner or later; and thus life is robbed of usefulness and enjoyment.

There is to-day a growing prejudice against medication; and, when disease invades the system, many seek through physical culture the means of restoration to health. The adoption of a hygienic dress would be one of the best preventives of disease; and often some such reform is absolutely necessary before strength can be regained."

Dr. Mary J. Safford Blake makes the following very pertinent response to the objection that any attempt to reform in dress would expose a person to ridicule, and necessitate immodest exposure:—

"The young miss who may tower, perhaps, head and shoulders above her seniors, does not shock the hyper-sensitive world by the shortness of her gown, and the exposure of her feet and ankles. But let her grow in years, though not in stature, and she becomes a monster in the eyes of the public, if she insists upon retaining the freedom of movement that her short dress formerly insured.

"There really seems no prescribed limit to the height to which skirts may be lifted in walking, if only the wearer is hung round about with clogging folds from which she can never free her hands without paying the penalty of wet and mud-bedraggled hems. Holding on to her draperies as if for dear life, she may raise them to the knees, and her style of clothing is tolerated with complacency. But let it be known and seen that the dress is hung so as never to come below the tops of

the boots, and that the limbs are properly and decently covered with leggins which fit closely, or with Turkish trowsers fastening at the ankle, and what fears are harbored for the appearance and the morals of women! Instead of such attire being ugly, it can be made most tasteful and becoming. All travelers, I think, express only admiration for the short costumes universally worn by the peasantry of Europe."

Lack of space has deterred us from dwelling, in this connection, upon the moral bearings of this question, which are well worth consideration.

Those who wish to obtain patterns for a full outfit of healthful clothing should send to the Office of the HEALTH REFORMER, Battle Creek, Mich., for a Circular.

Longevity of Brain Workers.

BY GEO. M. BEARD, A. M., M. D.

[DR. BEARD, of New York City, has recently published a remarkable essay on the above-named subjects, which has attracted much attention both at home and abroad. By permission of the author we give below an abridgement of the article.]

Thomas Hughes, in his life of "Alfred the Great," makes a statement that "the world's hardest workers and noblest benefactors have rarely been long-lived."

That any intelligent writer of the present day, and especially a writer who, like Mr. Hughes, is a thoughtful student of mental hygiene, should make a statement so absolutely untrue, shows how hard it is to kill an old superstition.

The remark is based on the mischievous theory, which—against the clearest evidence of general observation—has been held for centuries, that the mind can be used only at the injurious expense of the body. This theory has been something more than a mere popular prejudice; it has been a professional dogma, and has inspired nearly all the writers on hygiene since medicine has been a science. On the basis of this theory, intellectual and promising youth have been dissuaded from entering brain-working professions; and, thus, much of the choicest genius has been lost to the world; students in college have abandoned plans of life to which their tastes inclined, and gone to the farm or workshop; authors, scientists, and investigators in the several professions have thrown away the accumulated experience of the best half of life, and retired to pursuits as uncongenial as they were profitless. The superstition, for it hardly

deserves to be called a theory, has therefore wrought immense evil specifically by depriving the world of the services of some of its best endowed natures, and generally by fostering a habit of accepting statement for demonstration.

Between 1864 and 1866, while preparing a thesis for graduation, I obtained statistics on the general subject of the relation of occupation to health and longevity that convinced me of the error of the accepted teachings in regard to the effect of mental labor. The views I then advocated, and which I enforced by statistical evidence, were:—

1. That the brain-working classes—clergymen, lawyers, physicians, merchants, scientists and men of letters—lived very much longer than the muscle-working classes.

2. That those who followed occupations that called both muscle and brain into exercise, were longer-lived than those who lived in occupations that were purely manual.

3. That the greatest and hardest brain-workers of history have lived longer on the average than brain-workers of ordinary ability and industry.

4. That clergymen were longer-lived than any other great class of brain-workers.

5. That longevity increased very greatly with the advance of civilization; and that this increase was too marked to be explained merely by improved sanitary knowledge.

6. That although nervous diseases increased with the increase of culture, and although the unequal and excessive excitements and anxieties attendant on mental occupations of a high civilization, were so far both prejudicial to health and longevity, yet these incidental evils were more than counterbalanced by the fact that fatal inflammatory diseases have diminished in frequency and violence in proportion as nervous diseases have increased; and also that brain-work is, *per se*, healthful and conducive to longevity.

GREAT LONGEVITY OF GREAT MEN.

I have ascertained the longevity of five hundred of the greatest men in history. The list I prepared includes a large proportion of the most eminent names in all the departments of thought and activity.

It would be difficult to find more than two or three hundred illustrious poets, philosophers, authors, scientists, lawyers, statesmen, generals, physicians, inventors, musicians, actors, orators, or philanthropists, of worldwide and immortal fame, and whose lives are known in sufficient detail, that are not represented in the list. My list was prepared, not for the average longevity, but in order to determine at what time of life men do their

best work. It was, therefore, prepared with absolute impartiality ; and includes, of course, those who, like Byron, Raphael, Pascal, Mozart, Keats, etc., died comparatively young. Now the average age of those I have mentioned, I found to be 64.20.

The average age at death at the present time, of all classes of those who live over twenty years, is *about fifty*. Therefore, the greatest men of the world have lived longer, on the average, than men of ordinary ability in the different occupations by fourteen years ; six years longer than physicians and lawyers ; nineteen or twenty years longer than mechanics and day laborers ; from two to three years longer than farmers ; and a fraction of a year longer than clergymen, who are the longest-lived class in our modern society.

A few years since I arranged a select list of one hundred names, comprising the most eminent personages, and found that the average longevity was *over seventy years*. Such an investigation any one can pursue ; and I am sure that any chronology, comprising from one to five hundred of the most eminent personages in history, at any cycle, will furnish an average longevity of from sixty-four to seventy years. Madden, in his very interesting work, "The Infirmities of Genius," gives a list of two hundred and forty illustrious names, with their ages at death. The average I found to be sixty-six and a fraction.

In view of these facts, it may be regarded as established that "the world's hardest workers and noblest benefactors" have usually been very long-lived.

THE INHERENT HEALTHFULNESS OF BRAIN-WORK.

To work is to grow ; and growth, except it be forced, is always healthful. It is as much the function of the brain to cerebration, as of the stomach to digest ; and cerebration, like digestion, is normal, physiological, and healthful. In all organizations of force, the exercise of force develops more force ; work evolves strength for work. A plant that is suffered to bud and bloom is more sturdy and longer-lived than the plant that is kept from the light, or trimmed of all its blossoms. By thinking, we gain the power to think ; functional activity, within limits, tends to vigor and the self-preservation of an organ, and of the body to which the organ belongs. The world has been taught that the brain can be developed only at the expense of the other organs of the body ; granting that brain-work strengthens the brain itself, the rest of the body is impoverished thereby—hence disease and early death. But recent investigations in cerebro-physiology seem to indicate that

the centers of thought in the anterior region of the brain, are also the centers of muscular motion ; and hence it may perhaps be inferred that to develop the brain may be one method of developing the muscles.

BRAIN-WORK AND BRAIN-WORRY.

Worry is the converse of work ; the one develops force, the other checks its development, and wastes what already exists. Work is growth ; worry is interference with growth. Worry is to work what the chafing of a plant against the walls of a greenhouse is to limitless expansion in the free air. In the successful brain-worker, worry is transferred into work ; in the muscle-worker, work too often degrades into worry. Brain-work is the highest of all antidotes to worry ; and the brain-working classes are therefore less distressed about many things, less apprehensive of indefinite evil, and less disposed to magnify minute trials, than those who live by the labor of the hands. To the happy brain-worker, life is a long vacation ; while the muscle-worker often finds no joy in his daily toil, and very little in the intervals. Scientists, physicians, lawyers, clergymen, orators, statesmen, literati, and merchants, when successful, are happy in their work, without reference to the reward, and continue to work in their special callings long after the necessity has ceased. Where is the hod carrier, that finds joy in going up and down a ladder ? and, from the foundation of the globe until now, how many have been known to persist in ditch-digging, or sewer-laying, or in any mechanical or manual calling whatsoever, after the attainment of independence ?

COMPARATIVE LONGEVITY OF THE PROFESSIONS.

Inasmuch as professional men do not usually change their callings, but die in the special profession in which they lived, the vital statistics, at least of lawyers, physicians, and clergymen, become of value in determining their comparative longevity. I found in my researches made several years ago, that lawyers and physicians lived to be about fifty-seven or fifty-eight. The difference in the longevity of lawyers and physicians is but trifling. My observations in this respect have been variously confirmed by other statisticians.

LONGEVITY OF THE PRECOCIOUS.

That precocity predicts short life, and is therefore a symptom greatly to be feared by parents, has, I believe, never been questioned. In poetry and in science, the idea has been variously incorporated that early brilliancy is a sure indication of a feeble constitution and

an early death. This view is apparently sustained by analogy, and by facts of observation. Plants that are soon to bloom are soon to fade; those which grow slowly live long and decline slowly. Observing these facts, we naturally adhere to the opinion that the same principle should hold good as regards men; but in making the analogy, we forget that it loses its force, unless the objects implicated start in life with the same potential force and are surrounded by the same external conditions. It is probable that, of two individuals with precisely similar organizations and under similar circumstances, the one that develops earlier will be the first to die; but we are not born equally endowed and similarly circumstanced. Not only are men unlike in organization, but they are very widely unlike; between the brain of Shakespeare and the brain of an idiot is a measureless gulf, and we may believe that difference of degrees may be found between the greatest and simply great men. We may believe that some are born with far more potential nervous force than others. There are millionaires in intellect as well as in money, who can afford to expend enormous means without being impoverished. An outlay of one hundred dollars may ruin the mechanic, working for his daily wages, while the royal merchant may spend a thousand, and barely know it. There are those who can begin their life-work earlier, toil harder and longer, than the average, and yet attain a very great age. The average age of 500 illustrious men, including those who did not exhibit any special precocity, was about 64.20. Of these, about 500 individuals, among whom there were twenty-five women, 150 were decidedly precocious, and their average age was 66.50, or more than two years higher than that of the list of 500, that included the precocious and non-precocious. So far as I could ascertain, the instances of extraordinary longevity were as great among the precocious as among those who were not. My investigations in this department fully confirm the remark of Wieland, that "an almost irresistible impulse to the art in which they are destined to excel manifests itself in future virtuosi—in poets, painters, etc., from their earliest youth."

The more closely I study biography, the more strongly I become convinced that the number of really illustrious geniuses who did not give early manifestations of their genius is very limited. I do not forget that some of the currently reported exceptions are very striking. Thus, we are told that Chalmers at school was stupid and mischievous; that Adam Clarke, as a boy, could do nothing but roll huge stones about; that of Sir Walter

Scott, his teacher, Professor Dalzell, frankly said: "Dunce he was and dunce he would remain;" that Burns, though a good athlete, showed, in his boyhood, no unusual gifts; that Goldsmith was "a plant that flowered late;" that John Howard, and Napoleon, and Wellington were, to say the least, but little remarkable at school; and that the father of Isaac Barrow is reported to have said that "if it pleased God to take away any of his sons, he prayed that it might be his son Isaac, as being the least promising of them all."

The manifestation of genius in childhood is as normal and as healthful as its manifestation in maturity; but in childhood, as in extreme old age, the effects of overtaking the powers are more severely felt than in maturity. Petty smartness is oftentimes a morbid symptom; it comes from a diseased brain, or from a brain in which a grave predisposition to disease exists. Such children may die young, whether they do or do not early exhibit unusual quickness.

Those who have not given special thought to this theme will be surprised to learn how early and how strikingly the genius of some of the greatest and longest-lived heroes was displayed. Leibnitz, at twelve, understood Latin authors well, and wrote a remarkable production. Gassendi, "the little doctor," preached at four; and at ten wrote an important discourse. Goethe, before ten, wrote in several languages. Meyerbeer, at five, played remarkably well on the piano. Niebuhr, at seven, was a prodigy; and at twelve, had mastered eighteen languages. Michael Angelo, at nineteen, had attained a very high reputation. At twenty Calvin was a fully-fledged reformer, and at twenty-four published great works on theology that have changed the destiny of the world. Jonathan Edwards, at ten, wrote a paper refuting the materiality of the soul; and at twelve was so amazingly precocious that it was predicted of him that he would become another Aristotle. At twenty Melancthon was so learned that Erasmus exclaimed, "My God! What expectations does not Philip Melancthon create!"

"GRIT" AND LONGEVITY.

The one requisite for great success is "*grit*;" and, more uniformly than any other single quality or combination of qualities, it is found in those who attain high distinction. One does not need to practice medicine long to learn that men die that might just as well live if they resolved to live; and that myriads who are invalids could become strong if they had the native or acquired will to vow that they would do so. Those who

have no other quality favorable to life, whose bodily organs are nearly all diseased, to whom each day is a day of pain, who are beset by life-shortening influences, yet do live by grit alone. Races and the sexes illustrate this. The pluck of the Anglo-Saxon is shown as much on the sick-bed as in Wall Street or on the battle-field. During the late war I had chances enough to see how thoroughly the black man wilted under light sickness, and was slain by diseases over which his white brother would have easily triumphed. When the negro feels the hand of disease pressing upon him, however gently, all his spirit leaves him. The great men of history are as much superior in their will-power to the average of their fellows, as are the races to which they belong to the inferior and uncivilized races. They live, for the same reason that they become famous. They obtain fame because they will not be obscure; they live because they will not die.

GREAT MEN WORK MORE EASILY THAN
ORDINARY MEN.

Their expenditure of force to accomplish great things is less plenteous than the expenditure of ordinary men to accomplish such things. A Liverpool draft-horse draws with ease a load at which a delicate racer might tug and strain without moving it. Ruskin is quite right when he says that the greatest work is done easily. The best action is the unconscious. It is the essence of genius to be automatic and spontaneous. The common mind cannot attain this spontaneity, or at any rate, only to a slight degree. Many a huckster or corner tradesman expends each day more force on work or worry than a Stewart or a Vanderbilt. It is notorious that Beecher's great sermons cost him only an hour's musing or so, while many country pastors work for a week over "efforts" that suggest no thought, except pity for the composer. Great genius is usually industrious; for it is its nature to be active; but its movements are easy, spontaneous, joyous. There are probably many school-boys who have exhausted themselves more over a prize composition than Shakespeare over "Hamlet," or Milton over the choicest passages in "Paradise Lost."

—Things are not to be done by the effort of the moment, but by the preparation of past moments.—*Anon.*

—Twenty cigars a head is the number annually manufactured for every man, woman, and child in the United States.

Intoxicating Liquors as Medicine.

NUMBER TWO.

BY REV. P. B. RUSSELL.

It has been shown that the common notion that alcohol "keeps up the vitality" by stimulation is a dreadful delusion, as void of common sense as it is of truth. Vitality can never be sustained by the whip or spur. It must have nourishment, rest, and substantial support, and cannot be sustained by emotional or nervous excitement. The jaded horse may be kept on the road, when rest is needed, by the whip, but this process of "keeping up the vitality" by stimulation will soon exhaust what strength remains, and the noble animal drops in the harness. This nonsensical delusion, weighed in the balances of reason and experience, I am glad to notice, is found wanting, and is now passing away from the minds of intelligent men, and other theories in favor of alcoholic medication are taking its place among "lovers of reason."

Dr. Edward Curtiss, in an elaborate article in the *N. Y. Tribune*, abandoning the stimulation theory, professes to have discovered that alcohol is food. He says:—

"Contrary to what was lately believed, it has been proved beyond the possibility of a doubt that alcohol when drunk is *not* 'ejected from the system unchanged,' except in trifling amount when taken in grossly intoxicating quantity. On the contrary, in ordinary amounts it is wholly consumed, transformed in the system, and by the nature of its chemical composition is capable, like certain elements of ordinary food, of thus yielding *force* which can be used by the economy to do life-work, as the heat of the burning coal drives the engine."

Again he says:—

"It is capable, in proper dose, of being consumed and utilized as a force-producer; in which case there is no visible disturbance of normal function. Such action cannot be distinguished either by the drinker or the physiologist from that of a quickly digestible fluid food, and is no more an 'excitement' or 'stimulation,' followed by a 'recoil' or 'depression,' than is the action of a bowl of hot soup or of a glass of milk."

This discovery, if true, is very unfortunate for the case. It seems to harmonize with the discovery which Liebig made some years ago, that alcohol "*is food*"—not food that digests in the stomach, but "*respiratory food*," *i. e.*, food that *digests in the breath*. This is probably the reason why tipplers of all classes are so much troubled with fetid breath. No nonsense is too nonsensical to be employed to

bolster up a huge and hoary delusion, and justify the indulgence of a depraved and clamorous appetite.

What if it be demonstrated, at last, that alcohol *is* food; that it digests somewhere and somehow, and is assimilated? What then? Is this the *only* article of food? Are we obliged to eat or drink it? Rats, mice, serpents, cats, dogs, opium, fox-glove, and nightshade are food in a sense. The blood of poisonous reptiles is also food. But are we shut up to the necessity of eating or drinking every abomination which contains the elements of food? Many articles which contain more or less food are filthy, disgusting, or are compounded with poisonous elements, damaging to the stomach, and perilous to health and life. All such articles of food should be abjured.

But I deny that alcohol is food. Chemists and physiologists have demonstrated over and over again, that alcohol *passes through the system unchanged*. Let us hear a little of the testimony of these witnesses.

Dr. W. B. Carpenter says: "Alcohol can not supply anything which is essential to the due nutrition of the tissues."

Dr. E. Smith, F. R. S., says: "Alcohol is not a true food. It interferes with alimentation."

Prof. Lehman, in his "Physiological Chemistry," says, "We cannot believe that alcohol belongs to the class of substances capable of contributing toward the maintenance of the vital functions."

Prof. Moleschott, in his work on the "Chemistry of Diet," says: "Alcohol does not deserve the name of an alimentary principle."

Dr. T. K. Chambers says: "It is clear that we must cease to regard alcohol as in any sense an aliment."

Dr. Markham, F. R. S., says: "Alcohol is not a food in the eye of science."

Dr. Henry Monroe says:—

"If a person take an ounce of alcohol, it is immediately thrust out again as an intruder by every eliminating organ of the body in greater or less quantities. Is it reasonable to suppose that the body will treat one portion of alcohol as a rogue and vagabond or an inveterate foe, and retain the other portion as a welcome friend, when the action of alcohol must ever be the same? Can alcohol build up or repair nitrogenous tissue, when it does not contain a particle of nitrogen in its composition? It is an acknowledged fact that nitrogenous food nourishes the body in the sense of assimilating itself to tissues; alcohol does not. Plastic food feeds the blood-cells; microscopic investigations show that

alcohol destroys them. Food excites in health to normal action; alcohol tends always to feverishness, inflammation, and abnormal action. Food gives force to the body; alcohol excites reaction and wastes force in the first place, and in the second, as a true narcotic, represses vital action and corresponding nutrition."

Dr. F. R. Lees, who has devoted a lifetime to the study of the effects of alcohol upon the human system and upon human society, sums up the results of his investigations as follows:—

"Alcohol is utterly foreign to the human body and its normal wants; and it never gives power like food, nor aids in circulation like water, nor produces heat like oil, nor purifies like fresh air, nor helps elimination like exercise—an agent the sole perpetual and inevitable effects of which are to arrest blood development, to retain waste matter, to irritate mucous and other tissue, to thicken normal juices, to impede digestion, to lower animal heat, to deaden nervous filament, to kill molecular life, and to waste, through the excitement it creates in heart and head, the grand controlling forces of the nerves and brain."

If alcohol, after all, is found to contain food (and it is admitted that sweet wines and beers do contain some little aliment in the saccharine matter), it is poisonous, irritating, maddening food, that *bedevils* men and women, sinks them below the brutes, and converts them into maniacs and incarnate demons. Shall we eat it? Shall we drink it? Has not an all-wise and benevolent Creator supplied us with a rich variety of meats and drinks without resorting to the maddening cup? No one thing which ever enters the human mouth so maddens and ruins men. Liebig says it is *fuel* as well as "respiratory food." It is fuel on fire. So is a fever. So is the sting of the asp. So is a little member, the tongue, sometimes: it is "set on fire of hell." This kind of food and fuel is not a necessity of humanity, as hundreds of thousands who "touch not, taste not, handle not," can testify. Alcohol burns to the lowest hell, but it is not necessary to warm the Christian heart.

Dr. Hammond, in his inaugural, on assuming the presidency of the N. Y. Neurological Society, as reported in the *Tribune*, maintains a very different theory from that of Dr. Curtiss, and that is that alcohol is not food in itself, but is in a certain degree a substitute for food. He says that when taken in moderate quantities it checks the waste of the system, and so preserves the tissues. He tells us that if imbibed too freely, it is fear-

fully damaging, leading to a dreadful catalogue of diseases, and to a kind of frenzy and delirium which he calls "dipsomania," or "mithomania." Still he thinks many persons need, and should daily use, this disease-engendering and mania-making drink; that they may properly take it to their dinner-table, and imbibe as their judgments may dictate. He and some others would put our young men not on the safe ground of total abstinence, but would have them, each for himself, *learn how to drink moderately*. This is just what all the poor drunkards for ages have been trying to do; and in the school of moderate drinking they have plunged into ruin by millions. How many more millions shall pass over the cataract before these gentlemen will have done with their speculating and conjuring up pleas for this wholesale slaughter?

Are Nature's Laws Variable?

If you raise a stone from the earth and let it go, in the air, is it uncertain whether it will go up or down, or in a horizontal direction, or remain stationary? It goes directly down to the earth, unless some force is applied to prevent it. And it is the same if the stone be placed in water, though its velocity will not be so great, owing to the greater resistance of a denser medium. And is not poison in the stomach always poison? Some constitutions may have a greater power of resistance than others. Some stomachs may bear up against abuse longer than others; but is that old saying true that what is one's meat is another's poison? Are Alcohol, Nicotine & Co., really food to some persons?

Yet I hear it said that such things as tobacco, tea, and coffee injure some persons and benefit others. They are poison to one, and perfectly agree with another. And they refer to some old person who used these things for half a century, perhaps. It is true that some have borne these things for many years, have even been drunkards for the greater part of what we call a long life; but does that prove that they did not actually shorten their lives by the means? Does not reason say that these persons might have lived ten, fifteen, or twenty years longer, but for their abuse of their own nature?

Persons may say, as they frequently do, that tobacco, tea, or coffee does not hurt them, but perfectly agrees with them and does them good; but I must see some reason for this before I can believe it. I must still believe that poison is poison; and that alcohol, opium, tobacco, tea, and coffee can have no other than a hurtful effect on the human sys-

tem. They are evil and only evil, and that continually. Some can bear more poisoning than others before they succumb, but yield they must, sooner or later. Law is law; and natural law cannot be infringed with impunity. "The fear of the Lord prolongeth days; but the years of the wicked shall be shortened." R. F. COTTRELL.

Good for Tobacco-Users.—A missionary in the Micronesian Islands, Rev. Mr. Sturgis, has been much annoyed, and found his work much obstructed, by tobacco-smoke. Among the natives, father, mother, children, all smoke. He has hit upon a plan which proves to be a good corrective. "When it comes to the communion," he "*invites the tobacco-users to sit in a group by themselves*." Such moral suasion, we are assured, "quickly brought some of the 'chiefs' to an abandonment of the filthy and baleful habit." If this plan of grouping the tobacco-users together by themselves works well for their reformation from an evil habit, why not try it among tobacco-using Christians here? We commend the subject to the thoughtful consideration of pastors and church committees.

Leisure.—"If I had leisure I would repair that weak place in my fence," said a farmer. He had none, however, and while drinking cider with a neighbor, the cows broke in, and injured a prime piece of corn. "If I had leisure," said a wheelwright last winter, "I would alter my stove pipe, for I know it is not safe." But he did not find time, and when his shop caught fire and burned down he found time to build another. "If I had leisure," said a mechanic, "I would have my work done in season." The man thinks his time has been all occupied, but he was not at work till after dinner, and spent two hours on the street talking nonsense with an idler. "If I had leisure," said a merchant, "I would pay more attention to my accounts, and would try to collect my bills more promptly." The chance is, my friend, if you had leisure, you would probably pay less attention to the matter.

—"Benjamin," shouted Mrs. Toodles to her husband who was going out of the gate, "bring me up five cents' worth of snuff when you come." Snuff? Mrs. Toodles, snuff?" he ejaculated, as he paused with his hand on the latch; "no, no, Mrs. Toodles, the times are too hard to admit of such extravagance; you must tickle your nose with a straw when you want to sneeze."

LITERARY MISCELLANY

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

The Power of Trifles.

OF the various forms of exaggeration to which sensational writers and speakers are addicted, there is none more common than that of attributing great events to petty and insignificant causes. Accident, the sudden interposition of some trivial event, has been supposed in thousands of cases to have determined not only the destinies of individuals, but those of States. Matters of the highest moment are assumed to have been the product of others the most trivial, incidental, capricious, and foreign; and but for these minor events, it is asserted, the greater would have never happened. Not only epigrammatists, who must have their antithesis at whatever cost, but grave moralists and philosophers, are fond of showing "what great events from little causes spring," and, in their anxiety to point a moral, make deductions of which a moment's reflection would show the absurdity. As the fall of an apple led to the sublimest discoveries in science, so, we are told, the slightest moral act may lead to events which cannot be estimated.

History, as well as biography, is pointed to as confirming the same view. Was not Rome saved by a goose, and captured by a hare? Does not Pascal tell us, in his brilliant, epigrammatic way, that if the nose of Cleopatra had been shorter, Antony might have kept the world? What can be imagined, asks Hume in one of his essays, more trivial than the difference between one color of livery and another in horse-races? Yet this difference, he adds, "begat two most important factions in the Greek Empire—the Prasini and the Veneti—who never suspended their animosities till they ruined that unhappy government." Did not Cromwell come near being strangled in his cradle by a monkey—a wretched ape thus holding in his paws the destinies of Europe? A grain of sand in the sensorium of the same Cromwell re-established the Stuarts, and changed the fate of England. The absence of a comma decided the violent death of the predecessor of Edward III. A child plays with a pair of lenses, and lo! myriads of new suns and systems are discovered. Pascal hears a dinner-plate ring, and he writes his tract upon sound. Cuvier dis-

sects a cuttle-fish, and he is prompted to solve the mystery of the whole animal kingdom. Thorswalden sees a boy in a striking attitude, and models his *Mercury* drawing his sword after he has played Argus to sleep.

Who has not listened to such reasoning as this, and yet who, on a moment's reflection, does not see that it involves a logical *non-sequitur*? Can any event happen which is not the product of adequate causes? Admit that we cannot always trace the causes—does it follow that they do not exist, or that we must ascribe the inexplicable occurrence to a blind and capricious fate? "If Dante had been happy, or Shakspeare unhappy," their entire careers would have been different, no doubt; and "if my aunt had been a man, she would have been my uncle." But is human happiness the sport of accident—of blind chance? Does it not depend upon temperament, itself dependent upon a man's whole ancestry, and upon his education, which, again, is dependent upon his age, country, and a myriad of underlying conditions? Have men no wills by which they can react upon the circumstances that act upon them? If men become "stoics or sour fanatics" after marriage, it is because they were previously prepared to be such by their mental and moral constitutions. Whether a person is to be sweetened or soured by Hymen depends upon the constituents of his mind. Out of the same substances one stomach will extract nutriment, another poison; and so the same disappointments in life will chasten and refine one man's spirit, and embitter another's. If outward events are to give "their whole color" to our lives, we shall all become "rebels against society;" for where is the man who does not receive "a secret stab" or an open one in the course of his life?

Grant the truth of the story of Newton and the apple, is it not evident that, unless observed by a mind already so prepared to make the discovery that *any* falling body would have started the train of ideas, the falling of ten thousand apples would have led to no discovery of gravitation? When Oken picked up, in a chance walk, the skull of a deer, bleached and disintegrated by the weather, and exclaimed, after a glance, "It is part of a vertebral column!"—a reflection which led

to the system of anatomy which has immortalized his name—was not this flash of anticipation the result of the deepest previous study of the problems of the animal kingdom? Had the apple and the deer's skull been wanting, would not some other falling body, or some other skull, have touched the string so ready to vibrate? If these discoveries were accidental, it is certain that such accidents do not happen to common men. Again, would the first petty crime necessitate the one that leads to the gallows, did it not argue a lack of self-control which is the source alike of pigny and of giant vices? Would not Antony have been Antony still had he never seen Egypt's queen, and had there been no other Delilahs to ensnare and ruin him? "They are not skillful considerers of human things," says Milton, "who imagine to remove sin by removing the matter of sin. Though ye take from a covetous man all his treasure, he has yet one jewel left; ye cannot bereave him of his covetousness."

Pliny somewhere says that it was the sight of a fig which caused the destruction of Carthage; but does not every school-boy know better? It was the deep, undying hatred of the Romans, aggravated by weighty causes through a long series of years, that caused the famous decree, *Carthago delenda est*; else Cato might have dumped down a wagon-load of figs on the floor of the Senate-House, and the Senators would not have cared a fig for it. Again, Livy intimates that the admission of plebeians to the Consulate was owing to the accident of the Consul's lictor knocking at the door of his house to announce his return, whilst his wife's sister, who was married to a plebeian, was present. She was indignant that her own husband could not acquire such a distinction, and hence arose the contest which ended in breaking down the exclusion. But here the train had been laid twenty years before by Cameleius, and this was but the spark that lighted it. So the Reformation would have come, had there been no sale of indulgences, for there had been twenty incipient reformations before Luther; and without the stamp act and the three-penny tax on tea, the young American giant would still have ceased to bow to the British sceptre.

One might as well say that the match which fires a cannon blows up a fortification, or that a spark falling upon a mass of combustibles is the cause of a conflagration, without reference to the gunpowder in the one case or to the combustibles in the other, as affirm that men's destinies are shaped by chance, or that human civilization has been developed, thwarted, or controlled by petty and insufficient

causes—the accidents and incidental circumstances which dramatic and sensational writers are fond of assigning.—*Matthews.*

A Colony of Crazy Men.

AT Gheel, in Belgium, is located one of the most singular colonies on the face of the globe. For more than six hundred years this place has been the resort of lunatics from all parts of Europe. The native population of about 11,000 are scattered over an area of forty-three square miles, their dwellings being grouped together in small hamlets. Almost the whole attention of the inhabitants is given to the care of the 1300 lunatics who are domiciled with them. A correspondent of the *Pall Mall Gazette* describes the colony and the methods of treatment employed as follows:—

"The commune is divided into four sections. At the head of each is placed a medical man and an overseer. The patients are from all nations and ranks of society, and they receive accommodations according to their means. The wealthy are placed with the wealthier class of inhabitants, and the poor with the poorer. The pauper lunatics, for whose support their respective communes have to pay, belong, of course, to the last category. The more dangerous class of lunatics are placed in the outlying, isolated hamlets. They are divided into sections according to the nature of their diseases, and the Walloon patients are kept in two separate hamlets (Gheel is a purely Flemish place, but most of the people understand French) so as to be companions to one another. The 11,000 inhabitants are, so to speak, all engaged in the surveillance of the patients, which makes about nine overseers for every patient. The surveillance, not being perceived by the patients, of course does not irritate them. The commune earns directly more than 500,000 francs annually through the keeping of the lunatics, and indirectly also a great deal through the cheap work of all kinds which the patients perform for the inhabitants. It is the personal interest of the inhabitants to do their duty well by the patients, as they are intrusted only to people whose moral fitness and means of existence are approved. In fact, a family at Gheel is not considered respectable if lunatics are not intrusted to it, and the withdrawal of them from its care constitutes a heavy punishment.

"The children of the inhabitants, living from their earliest childhood with lunatics, become attached to them, do not find anything ridiculous in them, learn how they are

to be treated, exercise through their company a very soothing influence on them, and are, of course, not the least afraid of them. When young people get married, they ask from the authorities as a favor and a sort of dowry, the care of a patient. On their arrival at Gheel, the lunatics are kept at the central asylum for observation as long as the director deems necessary. In case of acute diseases, they are brought back there. It also serves as the house of correction, the deprivation of liberty being felt a severe punishment by the patients. In cases of great debility they are also brought there. Many lunatics, when feeling the approach of a paroxysm, demand themselves to be sent to the asylum. When a cure has been effected, the care-taker receives as a reward another patient, and if many cures occur at his house, he is rewarded with the care of a wealthy patient. The number of cures averages from 65 to 75 out of the hundred. Patients with radically immoral or highly dangerous tendencies cannot be kept at Gheel, the central asylum being only a depot. The number of lunatics under temporary coercion is generally 12 out of the 1,300.

"The very dirty patients who cannot be placed with the inhabitants, have their own rooms, with suitable arrangements. We found everywhere exquisite cleanliness and good air and light; the patients seemed to relish their dinner well; they enjoy, even in the asylum, a great deal of liberty, and if a lunatic asylum could be called a cheerful place, the one at Gheel is, perhaps, the only one to which that term could be applied. Good paved roads traverse the commune, and many houses are really fine villas, with large gardens in the rear. The first house which we visited was the house of poor people. We found the family, composed of a man, wife, and three young children and their two lunatic boarders, seated around the table at dinner. The children seemed to be quite unaware that they were sitting at the side of lunatics, nor would a stranger, entering unprepared, ever have thought of the presence of such persons.

"Some of the houses of the wealthier class offer all the comforts which can be desired for ladies and gentlemen. The apartments are large, well furnished, and the patient may install in them libraries and whatever is allowed by the director. We found there persons of very high social rank, and others of great accomplishments.

"The authorities watch carefully that the patients are not imposed upon, and that they receive its value for the money which they spend. Cases of misconduct of any kind to-

ward the the patients are, however, exceedingly rare, and the punishment of being declared unworthy to keep patients is considered a fearful disgrace."

Catarrh Snuffs.

ABOUT catarrhs. I've quit using all kinds of catarrh medicine. I am thankful that I found out where I stood before it was too late.

I will learn from another's experience how to shun the rock on which he split all to pieces. I was suffering one time with severe pain in my head, when Bro. and sister Hartman called here to stay all night on their way home from a communion season with the church over at the Willows. As soon as they came and found that I was sick, Bro. Hartman said: "I'll make you think I came along to-day like a ministering angel; for I have something in my pocket that'll cure your head in less than half an hour."

He gave me a big pinch of a fine powder and told me to lay it in the palm of my hand and snuff it up my nose suddenly. Oh! it seemed to turn my whole head into a flame that threatened to consume me. If it had been liquid fire it would n't have hurt any worse. I opened my mouth, and closed my eyes, and capered like a frantic sheep. When I was able to open my wet, red eyes, there sat Bro. Hartman convulsed with laughter. For a few moments I felt as though nothing would ever console me but to see the church withdraw the hand of fellowship from Bro. Hartman, that sinful man.

"Pooh! look at me!" said he, and he snuffed freely out of the Satanic little box. It never made his eyes water or his nose blink any more than if his head had been made of sheet-iron. "You see," said he, "I use this snuff daily for my catarrh. I could n't stand it any better, at first, than you. It is a wonderful medicine, though its properties cannot be appreciated fully, and yet I can't induce any poor sufferer to make use of this remedy. It will burn out the worst case of catarrh in a few months' time."

I said, "The inside of your head is as tender and susceptible, I presume, as the inside of your mouth, or your eyes, almost."

"Oh, no!" he said; "and then the preparation of kian pepper is only meant to act on the catarrh. I've got so I do n't mind how much I snuff of it; it do n't fire me up as it used to."

This happened years ago, but I had not forgotten it. A few weeks since the brother called here to eat a hearty Baptist dinner with

us as he was going home from the Huron Association.

He came into the kitchen first; we were cooking a boiled dinner that day, and I said: "Brother, go into the room with granny and the deacon, out of these kitchen-y smells; I'm afraid it'll give you the headache."

"Oh, sister Potts! since I saw you last, it has pleased the Lord, in his wisdom, to take away from me the sense of smell entirely," said he in a stuffy, nose-y voice, that sounded as though his head was in a poke, and that poke away down in the farthest corner of the cellar.

There was no need of sticking that daring, bold piece of effrontery upon the Lord, and calling it "his wisdom," and I right up and told him that the Lord was my friend, and I felt it obligatory upon me to take his part when I heard him assailed after that fashion, by a weak brother who had dared to meddle with, and ruthlessly handle, some of his finest machinery. I told him if a child played with fire he got burnt, if he played with a razor, he cut himself; he had tampered with something of more importance than either, and the result was with him.

He shook his head doggedly and set his square jaws together, saying, "If I doubted the goodness of my Father in Heaven as you do, sister Potts, I'd pray for the bowel of the earth to open and swallow me. I believe," and here he tipped back his hat until his yellow forehead shone like a brass knocker, "that the Lord knows just how many hairs is on all our heads, as well as I know how many buttons is on my breeches. I believe he watches us all the time, and when, through pride, our hearts swells big, he gives us a reminder in some way or another, just as I'd nudge my wife in meetin' to bring her to a sense of her duty in the house of the Lord. If we are too high-minded, He brings us down a peg; if we set too much store by our worldly possession, he shows us by his own redomitable will that all things come from him, and to him alone are we indebted. I was prospered—craps and stock smiled upon me—things was a-yieldin' and a-doublin' themselves abundantly, and I—I say it to my shame—I was like the Egyptians, I was a-worshippin' the goold calf-ah, when, lo, the Lord saw me a-spilen-eh in my prosperity, and he retch'd down his everlasting will-ah, and took from me the sense of smell-ah. Henceforth to me a rose is no more a rose-ah, a pink is no more a pink-ah, a dead sheep-ah is just as good in my pore smitten nostrils-ah."

And weary with much trumpeting the excited voice of the poor brother sounded as

though the symbolic poke in the corner of the cellar had been shaken up or kicked viciously.

Poor Bro. Hartman! all revenge had gone out of my sinful heart, and I did feel most profoundly sorry for him.

Last night the deacon and the girls and myself went down to Pottsville to prayer-meeting. I observed that Bro. Hartman was there, and all the evening he sat like a glum frog, never taking any part at all. I thought, perhaps, he had somewhat against some of the brethren, his face looked so injured and so sanctimonious.

On the way home I asked the deacon why the brother did n't take up his cross.

"Oh, didn't you know the reason? a sword hangs over his head, suspended by a single hair. The poor fellow lost the sense of smell some time ago and now he is threatened daily with the loss of his voice. We will never hear him pour out his rapturous joy any more in the swelling tunes of China, or Mear, or Coronation, never hear his voice in the covenant or the prayer-meeting. It's hard for Bro. Hartman, but we'll all have to submit to the ways of Providence, that are sometimes dark and past finding out."—*Arthur's Home Magazine*.

A Wonderful Invention.

ONE of the most marvelous devices which modern inventive genius has given to the world is that known as the sand-blast. This invention is remarkable for its beautiful simplicity as well as its great utility. A few years ago, Gen. Tilghman noticed a large number of curiously shaped columns in Monument Park, one of the most noted of Western wonders. These columns rise perpendicularly from their rocky bases to a height of ten to forty feet, and bear upon their summits huge caps of uncouth shape. In answer to the inquiries, Who reared these strange monuments? Who rounded their grotesque forms and polished their irregular surfaces? it was found that nature was the artist who wrought them, and that minute particles of sand, driven by the winds, were the chisels which cut away the softer portions of the massive rocks, and left intact the harder parts.

Taking his cue from nature, Gen. Tilghman set to work to imitate her by artificial means. The simple device required for this was a box of sand elevated to the ceiling of a room, the sand being allowed to escape through a tube communicating with the box through the bottom. This tube being conducted vertically

downward to the table of a workman, it is found that the jet of sand which issues from it will rapidly wear away the hardest substances. Glass, steel, marble, and even quartz, melt away with a rapidity quite startling to one familiar only with the slow results of hand labor.

By accelerating the jet thus simply produced by a blast of air, its efficiency is vastly increased. Even the sand itself is then reduced to a fine powder while it beats from the surface of glass or stone flinty particles of its substance.

One of the most curious properties of the sand-blast is its inability to affect soft substances, while it attacks hard surfaces so readily. Thus, flint, glass, metallic plates, and the hardest steel are rapidly worn away by the chipping off of little particles from their surfaces, while soft iron, rubber, leather, and even wax and paper are unaffected by the sand. This property is of great practical utility, as it enables the operator to sketch with ease, in a few seconds, the most intricate designs, which it would require many days of patient labor to accomplish by hand. If an ornamental plate is to be made for a door or window, the design is sketched upon a thin sheet of tin-foil which is first laid upon the glass. The portions which are to constitute the figure are then cut out. A thin layer of melted wax is then laid over the whole. When sufficiently cool, the tin-foil is removed, and with it the portions of wax which covered it, that portion which covered the design still remaining. When the sand-jet is applied to the surface of the glass thus prepared, the unprotected portions are ground and become opaque, while those parts which are covered by the wax remain transparent. By the application of gentle heat the wax is now melted and readily removed, when the picture is finished. Globular vessels are ground by being made to revolve while the jet is being applied.

The jet is employed not only for the purpose already mentioned, but for sawing blocks of granite, boring tunnels, drilling holes, sculpturing grave-stones, and all similar purposes. By means of a recent device it is also possible to utilize it in making electrotype plates from photographs.

For most of the above facts we are indebted to the *Popular Science Monthly*.

—Weltwitsch tells of a plant, an oxalis, growing in Angola, Africa, which is so sensitive that it closes its leaves on hearing (so to speak) a footfall in its neighborhood.

The History of Postage-Stamps.

THE introduction of the postal system, as it at present exists in all countries of the globe, has been credited to England, where, in 1830, covers and envelopes were devised to carry letters over the kingdom at one penny the single rate. This plan was adopted through the exertions of Sir Rowland Hill, who has been aptly termed the "father of postage-stamps." It now appears, however, that there is another aspirant for the introduction of the stamp system. In Italy, as far back as 1818, letter sheets were prepared, duly stamped in the left hand lower corner, where letters were delivered by specially appointed carriers, on the prepayment of the money which the stamp represented. The early stamp represented a courier on horseback, and was of three values. It was discontinued in 1836. Whether Italy or Great Britain first introduced postage-stamps, other countries afterward availed themselves of this method for the prepayment of letters, although they did not move very promptly in the matter.—*Sci.*

Wonders of the Microscope.

THE other day a Detroit father purchased a microscope for his son, a boy of ten, patted the lad on the shoulder and said to him:—

"My son, take this microscope and go out and study the beauties of nature."

The boy left all other amusements for that, and he took such great interest and improved so rapidly that at the tea-table, to which several visitors sat down with the family, he felt that he must make some remarks. Turning to one of the ladies he inquired:—

"Did you ever look at cheese through a microscope?"

"I do n't think I ever did," she pleasantly replied.

"Well, you just ought to see the things crawl——"

"John! John!" exclaimed the father, shaking his head at the boy across the table.

John subsided for a minute or two, and when his mother passed the cheese around everybody said: "Thank you, no." Pretty soon the young student, desiring to mollify his father, asked:—

"Father, did you ever look at a toad through a microscope?"

"I will talk with you after supper," replied the parent, scowling at the boy.

John was rather disappointed at his failure to arouse enthusiasm, and just as the strawberries were being passed around he remarked: "Well, you just ought to look at

a strawberry once through the microscope! They look just like warts, they do, and you think you see bugs running——”

“Jahn!” said his mother.

“Boy!” warned his father.

“Well, they look wors’n flies’ heads!” protested the boy, who imagined that they doubted his veracity, “for flies——”

“Boy!” said the father, making a motion for John to leave the table.

John left, and as soon as it was convenient for him to do so the father escorted the lad to the wash-room in the basement, bounced him around and said:—

“My son, gimme that microscope, and you take the ax and go out and study the beauties of that woodpile!”

If that boy continues to feel the way he does at present he will become a bank robber instead of a naturalist.—*Detroit Free Press.*

Our Own Fault.—It is the habit of erring humanity—and a very comforting one apparently—to blame Providence for the misfortunes which by imprudence we bring upon ourselves. If a man eats too much at dinner, drinks too much and smokes too many cigars, and dies of apoplexy at forty, when he ought, by the laws of nature, to have lived to eighty, God is arraigned, and the man’s friends and the clergyman who preaches his funeral sermon call his death a “mysterious dispensation of Providence.” If a mother dresses her tender little child so as to show its bare neck and arms and plump legs—beautiful, we admit, but none the less sensitive to cold on that account—if she fills the child’s stomach with *bon bons*, and its head with knowledge intended only for riper years, and the child dies, as of course it will, then everybody sympathizes with her and urges her to be resigned to the will of Providence. And the afflicted mother weeps, and wonders what she has ever done to deserve such an afflicting stroke. Men who are brought up to know right from wrong, cheat and lie and swindle and speculate and build up fortunes, and invest them in fancy stocks which rise into existence like soap bubbles, and by and by the bubbles burst, and the fine things are swept away, and these men will have the assurance to say that God has dealt harshly with them, and the punishment is greater than they can bear. In nine cases out of ten the world is what we make it; if we do our duty to God and man, regard the natural laws of health, and indulge in no habits that work death and ruin, we shall find plenty in life worth living for, and have little cause to complain of the cruelty of our Heavenly Father.—*Sel.*

“Vot you Lives On?”—So accustomed are our German fellow-citizens to beer and tobacco that some of them cannot conceive how a man can live without using those injurious articles. The *Toledo Blade* tells the following story:—

A citizen of Toledo, in the ordinary current of business, became possessor of the note of a German saloon-keeper. The note becoming due, he took it to the man and presented it for payment. The man was not prepared to liquidate the obligation, and asked for an extension of time. This being granted, and the conditions settled properly, he was turning to leave, when the German said, “Shoost wait you leedle whiles, unt I gifts you ein glass goot peers.”

“No, I thank you, I do n’t drink beer,” was the reply.

“Vell, den, I gifts you veeskies that is petter as so much.”

“No, thank you, I do n’t drink whisky.”

“Shoo! den I know how I fix you; I haf goot vines,”—jerking down a bottle with a flourish.

Again the quiet, “No, thank you, I do n’t drink wine.”

“Vot! you don’t trinks noddings; vell, I gifts you ein goot shegar.”

Once more, “No, I thank you, I do n’t smoke.”

“How strange!” exclaimed the Dutchman, throwing up both hands; “no peers, no veeskies, no vines, no dopacco, no noddings—vot you lives on, anyways—botatoes, eh?”

Rich without Money.—Many a man is rich without money. Thousands of men with nothing in their pockets, and thousands without even a pocket, are rich. A man born with a good sound constitution, a good stomach, a good heart, and good limbs, and a pretty good head-piece, is rich. Good bones are better than gold; tough muscles than silver; and nerves that flash and fire and carry energy to every function are better than houses and land. It is better than a landed estate to have the right kind of a father and mother. Good breeds and bad breeds exist among men as really as among herds and horses. Education may do much to check evil tendencies or to develop good ones; but it is a great thing to inherit the right proportion of faculties to start with. The man is rich who has a good disposition—who is naturally kind, patient, cheerful, and who has a flavor of wit and fun in his composition.—*Sel.*

DIETETICS.

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

Aerated Bread.

THAT our present state of bread-making is in an unsatisfactory state is a fact which we think few people will be disposed to deny. The unpleasant circumstances which occasionally come to light through the medium of the police courts, as our columns have shown on more than one occasion, leave an unfavorable impression on the public mind. The incidents of the dough being *mixed by manual labor in a close under-ground cell, by perspiring men in a state of semi-nudity*, are not comfortable to contemplate. From time to time the remains of insect life may be discovered in bread which has been purchased even in first-class localities.

These circumstances all point to the necessity which exists for abolishing *in toto* the primitive objectionable method of making bread by hand labor, whilst there is that inevitable danger of the "baker's plague," rosy bread, being caused by the constant use of the old-fashioned wooden troughs.

Besides these evils there is also another important reason why the present reason for manufacturing the "staff of life" should be changed, and that is the loss of nitrogenous and nutritious qualities through fermentation. It is by no means improbable that ten per cent. of the flesh-forming constituents of flour may be lost by being converted into carbonic acid.

When we look at an ordinary piece of bread, we see that the vesiculation varies from the minutest size to that of more than an inch in diameter, the very large vesicles being caused by a copious evolution of carbonic acid through sundry patches of flour. If this process were carried out long enough, there would be very little food value left in the bread. A worse result than this happens occasionally when lactous and other acids are caused by false fermentation from the use of putrescent or highly impure yeast the effect of using the ordinary baker's yeast, being to give rise to a species of fermentation of which at present very little is known. One thing, however, is very certain, that some of these ferment growths resemble in a marked manner the ferments found in certain diseases of the blood. Whether, however, the one has ever conduced to produce the other is more than can be positively affirmed; but there is

at least a probability that the one may be the result of the other.

Various methods of vesiculation have from time to time been attempted to obviate these dangers, such as the mixture of hydrochloric acid and carbonate of soda, and several other effervescing mixtures; but the best of these are liable to contain impurities to a considerable extent, which are not always free from danger, and must inevitably produce a larger proportion of salt than can be considered advisable in an article so largely consumed.

All endeavors to raise bread without importing fermentative matter propose to accomplish the object by the formation of carbonic acid within the dough. This can only be properly attempted by adopting all the necessary precautions.

In the first place, the gas must be produced in a separate generator, then it must be washed and purified, and finally introduced into the dough from a receiver at a perfectly controllable pressure.

It must be obvious to any one who examines a piece of properly aerated bread that a much greater certainty of thorough vesiculation can be obtained by this method, whilst the necessity of this impregnation being accomplished by machinery has led to the perfection of that system of bread-making by the Aerated Bread Company. If no other result has been accomplished by this company than the introduction of machinery into the manufacture of bread, and the superseding of the old dirty, foul, and laborious system of bread-making, that would have deserved our best appreciation.

The best food value in the flour being secured, no waste or destruction of any of its most important constituents can occur in any of the processes adopted in making aerated bread; and as the wheat is ground, dressed, mixed, aerated, and baked, without the possibility of pollution either in dangerous ferments or disgusting manipulation, bread so made can alone be considered really pure.

As we said before, the present primitive, dirty, and uncertain system of bread-making is a disgrace to our civilization, and we gladly welcome any method which will insure a cleanly and wholesome compound and effect a much needed sanitary reform.—*Sanitary Record.*

Significant Dietetic Facts.—The hardy Irishmen who build our great railways, excavate our mammoth tunnels, and dig our canals, were reared upon potatoes, beans, and oat-meal porridge, eating very little meat. According to Dr. Letheby, the average Englishman eats more meat in a day than the average Irishman in a week. England produces the finest horses, and Scotland the finest men, in the world. Englishmen feed their oats to their horses. Scotchmen make oats their own diet.

Irishmen, being at home accustomed to a vegetarian diet, are often attacked with a severe form of disease upon enlisting into the English army. The malady is commonly known by the name of "meat fever," it being well understood that its cause is the use of animal food.

Isaac Pitman, of Bath, England, has been a vegetarian for more than thirty years. At the age of sixty, he is one of the finest looking old gentlemen in England. He works almost incessantly, reads without spectacles, and writes as steady a hand as he did at thirty.

Graham Bread.—A few years ago this article was quite a rarity except in a few well-regulated households. Now it is to be found in every baker's shop in any large city. It is no longer laughed at and slandered by such terms as "bran bread," "horse feed," etc. It has received the unanimous indorsement of all scientific men. Every intelligent physician in the land acknowledges its superiority. The name of Dr. Graham is no longer a term of reproach, but has become so generally a household word that it has almost come to be a common noun.

The chief object of this paragraph is to call attention to the fact that everything which passes for graham bread is not a proper representative of this paragon food. Dishonest millers and bakers combine to make both graham flour and graham bread as widely different from what the genuine article should be as can well be imagined. The miller saves for graham the very poorest of his wheat, which will not make good fine flour. Anything will do for graham! Much of the graham flour (so-called) in large cities is simply a mixture of poor white flour and bran. The baker does the same thing, using for graham bread his second-class flour mixed with bran or shorts. It is no wonder that some people are disappointed in the results when they attempt to use graham flour for the first time. Graham flour and bread should always be purchased of honest millers and bakers.

Another Warning.—It is now no secret to most lovers of swine's flesh that their savory ham and toothsome sausage are liable to be swarming with the most loathsome worms, which are ready to prey upon them when taken into their stomachs. This is by no means the only danger, however, to which those who eat pork in any form are liable, as has often been proved by sorrowful experience, and has been recently demonstrated by a case cited by the *Medical and Surgical Reporter*.

A family in Philadelphia partook of sausage made in the ordinary manner, and several of the children soon became very sick, leading to the suspicion that the sausage had been poisoned. One of the children soon died, as did also a dog which had eaten of the same article. Chemical examination of the sausage, and also of the stomach and intestines of the child and of the dog, revealed the presence of no metallic poison of any kind. Portions of the meat which were found in the stomach and intestines, however, gave evidence of having undergone a kind of decomposition which had developed poisons of the most deadly character.

Other articles besides sausage may become fatally poisonous in this way. Blood-pudding, fish, and cheese, are especially liable to become poisonous. One of the most alarming features of the matter is that the poisons which are developed under these circumstances are of so subtle a nature that they elude even the most searching analysis of the chemist. The consumer has no certain means of knowing at any time that he may not be taking into his system the most fatal poisons.

According to Wharton and Stille, 400 persons have died from eating blood-puddings and sausages in the single city of Wurtemberg. Eleven persons in a boarding-house were recently poisoned by eating cream puff made from eggs which were not fresh.

Fruit Sirup.—Frequent and alarming cases of poisoning have recently been noticed in Brussels, and on investigation the causes were discovered to be the use of raspberry, currant, and other fruit sirups. The Belgian chemists have analyzed these sirups, and assert that none of them contained a trace of the fruit of which the sirup is named. Many consisted of a solution of glucose, covered with aniline red mixed with tartaric or citric acid and a few drops of fruit essences. Fuchsine, the form of aniline red used, it is stated, is frequently combined with arsenic.—*Ledger*.

THE HEALTH REFORMER

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

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What Is Disease?—No. 1.

READER, did you ever pause to inquire into the nature of that great scourge of mankind which gives employment and a generous revenue to 50,000 regular doctors beside an innumerable host of irregulars, druggists, apothecaries, quacks, and undertakers? Did you ever speculate upon the questions, how a man gets sick? what sickness is? and how it may be prevented? If not, then we would invite your attention to the subject as one of the deepest practical interest to every member of the human family. If your attention has already been called to the matter it will be of sufficient interest to insure its careful consideration.

WHAT THE ANCIENTS THOUGHT OF DISEASE.

The most ancient Grecian and Roman philosophers were interested in the same question we are considering. They observed that when a man was sick his temperament and disposition were wholly different from what they were in health. The hale, hearty, jovial man became not only emaciated and pale, but morose, fretful, and sad. They also observed the violent contortions which were sometimes manifested under the influence of severe pain. Men were far more superstitious then than now. They attributed the most trivial occurrences, which were mysterious to their untutored minds, to some supernatural agency, just as many people do in modern times. Their conclusion was that disease was the work of demons, who were allowed to harass and persecute men by possessing their bodies and subjecting them to all manner of tortures. Thus, if a person had an ague fit, he was believed to be possessed by a shaking devil, a poor shivering imp, who, wandering about in search of an abode, had, by chance or otherwise, gotten into the unfortunate in-

dividual. A mute had a dumb devil. A blind man was the victim of a blind fiend. Epilepsy was supposed to be one of the worst forms of demoniacal possession, being only equalled in severity by insanity.

Entirely consistent with their opinion of the nature of disease was the mode of treating disease in vogue with the ancients. If the cause of a man's sickness was an incarcerated demon—which they supposed was the case—the proper remedy would evidently be to get the Satanic lodger out in some manner, if possible. To effect this very desirable end various methods were used, all of which were more or less connected with certain mysterious religious rites, the secret of which was confided to a few individuals, usually the priests. In this way the priests became physicians—quacks, we would say now-a-days—and the professions of theology and medicine became mingled, the early superstitions of the former being permanently grafted upon the latter. One very approved method of getting rid of a demon was to draw him out through the nose of the patient after applying a certain root to the nostrils. A method much more severe for the patient was flagellation, which either ended in the departure of the devil or the death of the victim. Bathing in certain waters, inhaling the air of particular caves, and similar measures, were also regarded as efficient remedies.

THE DISCOVERY OF HIPPOCRATES.

To Hippocrates, more than to any other, belongs the merit of discovering that climate, food, and personal habits have far more to do with diseases than any Satanic or other supernatural agency. His notion of the exact nature of disease, was, however, quite too absurd for credence, although it involved a true principle. He believed that there were certain humors in the body. When they were

in just the right proportion, health was the result; if any one of the humors was in excess, disease followed. It will be noted that the primary idea in this theory is that disease results from some disarrangement of the body.

But although this noble old physician labored very zealously to uproot the old superstitious notions of disease, he was successful only with a few of his most intimate disciples. The unlearned masses still clung to their old fallacies; and notwithstanding the great advancement which civilization and enlightenment have made since then, we find the same erroneous dogmas in the world at the present day, though in a somewhat modified form. People no longer regard a sick man as one possessed with a devil, but the prevalent opinion would seem to be that it is an evil entity of some kind which settles down upon or into a man and works all manner of mischief. In descriptions of fever we are often told that the patient was "attacked," "carried through," "combated the disease," etc., until the "fever left him."

REVELATIONS OF THE MICROSCOPE.

The wonderful improvements in the construction and use of the microscope, during the last few centuries, and especially during the present century, have shed much light upon this question. To the naked eye the human body appears much like a homogeneous structure. When examined by the aid of the microscope, it is found to be made up of an infinite number of minute cells, many of which are so small that more than forty billions of them can occupy a cubic inch. Each one of these wonderful little bodies has a life of its own. It is generated, grows, develops, matures, lives and works for a time, then grows old, and finally dies. The revelations of the microscope, together with modern researches in human and animal physiology, have done much toward the solution of this great problem.

WHAT IS LIFE?

Although it would be presumptuous to assert that the whole mystery of life is yet revealed, it is now well known to all scientists that what is usually termed life, that is, the phenomena of animal existence, is merely the combined result of the individual lives of the microscopic cells of which all living bodies are composed. That these cells have an in-

dependent life is proven by the fact that they will retain their life and vitality for hours after the death of the individual. It is by means of these minute structures that every act of life is performed. Thinking, working, breathing, are all the results of cell action.

Tea, Coffee, and Civilization.

THE New York *Sun* quotes M. Block as having ascertained that tea and coffee are consumed by the inhabitants of some of the principal countries of Europe in the following proportions, the figures representing the average number of pounds of both articles annually consumed by each person:—

| | | | |
|----------------|-----------------------|----------|----------------------|
| Belgium, | 16 $\frac{7}{8}$ lbs. | France, | 4 $\frac{1}{2}$ lbs. |
| Netherlands, | 15 $\frac{1}{2}$ lbs. | Austria, | 2 $\frac{3}{4}$ lbs. |
| Switzerland, | 10 lbs. | Italy, | 1 $\frac{3}{4}$ lbs. |
| Great Britain, | 8 lbs. | Spain, | 1 $\frac{1}{2}$ lbs. |
| Germany, | 7 $\frac{1}{2}$ lbs. | Russia, | 1 $\frac{1}{8}$ lbs. |

The *Sun* deduces from the above statistics the sage conclusion that the degree of a nation's civilization may be judged by the quantity of tea and coffee which it consumes, since Spain and Russia consume far less of those narcotics than any other European nations of note, and are at the same time less advanced in civilization. These statistics are, the *Sun* says, "uncommonly eloquent." They are "eloquent," indeed. To us they indicate, millions of hard-earned dollars uselessly expended; yes, worse than wasted, for they also imply billions more of vital energy hopelessly squandered, to say nothing of shattered nerves, impaired digestion, and numerous other resultant ills.

But suppose the *Sun's* reasoning to be correct, what sort of "eloquence" do we have? Belgium, the home of the plodding Dutchman, uses the most tea and coffee, and is, consequently, the most civilized nation in the world. Great Britain, the home of Proctor and Tyndall, and the birthplace of Newton, drinks only half as much of the poisonous beverages, and so must be only half as civilized, or in other words, semi-barbarous. France, with all its learned philosophers and scientists, drinks but half as much tea and coffee as Great Britain, and thus must be a long ways nearer barbarism. Spain and

Russia drink so little of these harmful narcotics that they could hardly come within the pale of civilization at all, and must be classed with savages.

The absurdity of such reasoning is self-evident. We have no faith in tea-and-coffee civilization. There is no logical reason why rum, tobacco, licentiousness, or almost any other vice or crime, might not be made the criterion of a nation's advancement, as well as the use of tea and coffee. We are sorry to see that so many estimable journals are copying the article from the *Sun* without exposing its sophistry, and thus giving wide circulation to so ridiculous a fallacy.

Household Medicine.—No. 2.

MEASLES.

A FEW hints respecting the treatment of this very common disease may be timely, as it is now prevailing quite extensively in many localities.

The cause of this disease is doubtless a specific animal poison. It has been thought by some that it is sometimes produced by fungi of wheat or rye, but the evidence of such an origin is not conclusive.

The first symptoms of the disease usually appear about one week after exposure, but may not be manifested for ten days or two weeks, or in rare cases, several weeks. During the first three or four days of the disease the symptoms are those of a common cold or influenza. There is frequent sneezing, discharge from the nose, usually a dry, harsh, and painful cough, slight soreness of the eyes, more or less fever, and chilly sensations. The appetite is commonly impaired, and there are, sometimes, nausea and vomiting. Nosebleed is a not uncommon symptom, and spasmodic croup and convulsions sometimes occur in children.

In rare cases, the disease never manifests other symptoms than the above; but in the great majority of cases, a peculiar eruption appears about the third or fourth day, though it may be delayed several days longer. This consists, at first, of minute red dots, which quickly enlarge, becoming somewhat elevated, and often arrange themselves in crescentic or

circular forms. They have been compared to flea-bites. When pressed with the finger, the redness disappears for a moment. As the smaller patches unite, large irregular blotches are formed. Sometimes the eruption is so profuse that the whole body is covered uniformly, no distinct patches being visible. The eruption usually appears first upon the forehead and temples, and spreads thence to other parts of the body. The color is dull or deep red, being thus easily distinguished from the crimson eruption of scarlet fever. During the eruptive stage there is often severe itching of the skin.

In favorable cases the eruption commences to disappear in four to eight days after its first appearance, the skin acquiring a rough appearance from the shedding of the epidermis in branny scales. The patient usually becomes convalescent at this period, if no complication occurs. The complications to which patients suffering from this disease are liable are diphtheria, true croup, pleurisy, capillary bronchitis, and pneumonia. Several of these diseases, together with consumption, disease of the eyes and ears, and enlargement of the lymphatic glands, not infrequently follow as results of measles.

Treatment. With good nursing and no medication, nearly every case of measles would terminate favorably. Most physicians of all schools have learned this, and very few, even of those who have faith in drug medication, administer anything but some harmless mixture.

When the disease pursues its natural course, attention to the following points will secure a good recovery:—

1. Keep the patient quiet, and in a room of uniform temperature, which should not be above 70° except when administering a bath.
2. Secure thorough ventilation, but carefully avoid exposing the patient to cold drafts. There should be at least two free openings for the entrance and exit of air.
3. Keep the patient's bowels regular, by enemata if necessary.
4. Keep the skin active and free from impurities by frequent sponge baths.
5. Allow a light diet of fruits and farinaceous foods. Oatmeal gruel is an excellent food in this as in all febrile diseases.

If the eruption does not appear readily, a

sitz-bath at 100° continued for twenty minutes, and followed by vigorous dry-hand rubbing, or a wet-sheet pack, continued for the same length of time, will bring it out as fully as could be desired. Stimulating teas and other drinks should be avoided as being either useless or harmful. Two or three sponge baths a day are none too many. If the irritation of the skin is so great as to cause itching, the sponge-bath should be often repeated. Anointing the body with a mixture of equal parts of olive oil and lime water after the sponging will frequently afford the patient very great comfort, especially in the latter stage of the disease when desquamation of the skin is taking place. The latter application should be well rubbed in.

Keep the feet warm, and the head cool. If there is headache, the cool compress should be constantly applied, being changed every few minutes. In case the eyes are inflamed, apply to them very thin and small compresses wet in cool water and changed every five minutes. If the throat and lungs are unpleasantly troublesome, apply the chest compress.

Physicians of many years' experience testify that they have never seen a case of measles lost under hygienic treatment. During the late war there were thousands of cases among the troops, of which one-fifth were fatal.

Another Humbug.

It is patent to every observing individual that this is emphatically an age of humbugs. Their number is innumerable. All humbugs are a reproach to humanity, and a burning disgrace to the author; but of all swindles the most contemptibly mean are those which involve human health, and which appeal to the easy credulity of invalids for support. Of all varieties of land sharks the most despicable are those who prey upon suffering humanity.

A few months ago we had occasion to make a few strictures on "Bogus Health Institutes," which called down upon our devoted head the harmless imprecations of interested parties who did not relish that kind of a "notice." There has recently come to our

table another circular of somewhat similar import to the one previously referred to, though less bombastic, and somewhat less pretentious in appearance. This document hails from a flourishing western city, and claims to bring "Good News for the Sick." It being our business to glean for suffering humanity every good thing coming within our reach, we eagerly seized upon this opportunity to secure something new.

But what was the wonderful news of such value to the sick? It was something to the effect that a certain doctor in —, having learned all about all the different systems of medicine, had finally abandoned them all for a certain system of electro-therapeutics, by means of which he was able to cure ovarian tumors, cancers, heart disease, and nearly all other diseases. For the small sum of \$2.00, also, said individual agrees to explain any person's diseases by simply placing his finger on the head of the latter while passing an electric current through the same. This procedure is called "cranial diagnosis." It is not nearly so brilliant an achievement as that of the ordinary traveling quack who makes his diagnosis by simply looking at the patient.

We have had ample opportunity for testing the accuracy of "cranial diagnosis" in numerous cases, and have proved its worthlessness to our ample satisfaction. We are sorry for those honest people who may have been imposed upon by its alluring claims, and hope that the public will not long be exposed to such imposition.

Hygienic Remedies.

WATER.

It is now pretty generally admitted by physicians of all schools that water is one of the most valuable remedies in the treatment of disease. Its great efficiency in the treatment of fevers is acknowledged on all hands. The only reason why it is not more generally employed is that its application requires too much time and attention to suit the convenience and ease-loving disposition of the average practitioner. But there are a few eminent

physicians who openly announce their faith in this much-neglected remedy, and show by their practice the sincerity of their convictions.

The universal abundance of the limpid element, its adaptability to so vast a variety of diseases and conditions, and the almost infinite variety of modes in which it may be applied, all combine to make it the most valuable of all remedies for disease.

Water is a powerful agent. If properly applied, it does good. If the application is injudicious, harm will be the result. Hence, its application must be made the object of careful study. It is quite too prevalent a notion that "anybody can doctor with water." It is the improper and unscientific use of the remedy by those who were totally ignorant of the first principles of hydropathy that has done more than anything else to bring the system into disrepute.

In the series of articles of which this is the first, we shall attempt to describe such of the various water appliances as can be made serviceable in private families. The following are a few general rules which should always be observed in administering baths:—

1. Never bathe when exhausted, or within three hours after eating, unless the bath be confined to a very small portion of the body.

2. Never bathe when cooling off after profuse sweating, as reaction will then often be deficient.

3. Always wet the head before taking any form of bath, to prevent determination of blood to the head.

4. If the bath be a warm one, always conclude it with an application of water which is a few degrees cooler than the bodily temperature.

5. Be careful to thoroughly dry the patient after his bath, rubbing vigorously to prevent chilling.

6. The most favorable time for taking a bath is between the hours of ten and twelve in the forenoon.

7. The temperature of the room should be at about 80° or 85°.

8. Baths should usually be of a temperature which will be the most agreeable to the patient. Cold baths are seldom required. Too much hot bathing is debilitating.

That Nasty Indian Weed.

YOUNG man, you're poisoned! You are completely saturated with *nicotine* and *narcotia*, two most deadly drugs. Your eyes show it, your skin shows it, your breath is full of it, and your present occupation is the proof of it. That cigar in your mouth contains poison enough to kill two men. Every whiff you draw from it is laden with gaseous poison with which it fills your lungs and impregnates your blood, which carries it to every part of your body.

"Do you mean to say that tobacco is poisonous?"

Indeed it is. At this very moment your whole body is full of the poison of this filthy drug. See how your hand trembles. That indicates that your nerves are being slowly but surely destroyed. Some day paralysis will supervene. Then, perhaps, you will be willing to deny yourself the ineffable luxury of inhaling poison, offending every well-bred lady or gentleman, and making a general nuisance of yourself.

"How do you know that tobacco is such a dreadful poison?"

Do you recollect how you felt after smoking your first cigar? and do you suppose that an article the mere vapor of which will make a boy feel as though he is going to turn inside out, will blanch his cheeks, double and twist him out of all recognizable shape, and roll him about on the grass like a big pumpkin, can be of a very wholesome nature? If your landlady should give you for supper an article which would serve you thus you would send at once for a doctor and a policeman. Besides the effects of tobacco upon yourself, you may see its effects upon animals. A little tobacco tea will kill the most venomous snake. One drop of the oil will kill a cat in two minutes.

"But tobacco don't hurt me now, if it was rather unpleasant at first. I've got used to it."

So says the toper, the opium-eater, the hashish taker, the absinthe devotee, and the consumer of arsenic. "Used to it!" What does that mean? It means, simply, that your nerves have become so dead, obtuse, and insensible that they no longer do their duty. They are sleepy sentinels, and let the enemy in without warning, so that you are poisoned without knowing it; and though your nerves are being destroyed, your vitality exhausted, your senses depraved, and your whole system devastated, you are in total ignorance of it. Young man, reform at once or you are fated to premature death as surely as there is a God of nature. Escape for your life.

PEOPLE'S DEPARTMENT?

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

Hygiene Ahead.—Said a well-known professor of the regular school of physicians to his class, as he was giving the first of a series of lectures not long since: "We are not Allopaths. We do not admit the term. We have no exclusive system. We are at liberty to employ any means that will be for the benefit of our patients." And of those in the resources of nature, he made quite prominent pure air, water, etc.

It was pleasing to observe that, in some of his after lectures, he gave hygiene as of great importance in the treatment of diseases, in fact, in some diseases the first importance, almost to the exclusion of drug medicine. But he said, "Though in many cases hygienic treatment is all that is needed, yet it will not do to exclude the medicine, for the patient would feel slighted if no medicine were given, and would doubt your skill in treating the disease; therefore, prescribe some mild preparation, and have it given to the patient at stated intervals. Give a medicine that, while it will do no particular good to the patient, will do no particular harm."

Thus we see how it is that medicine gets the credit, many times, of curing, when the cure is wholly due to the good nursing and the hygienic measures taken. I am sure that if the people could draw back the curtain and see in what light drug medicine is viewed by some of the best of the profession, they would not be so tenacious for its use.

W. J. F.

A Live Hygienist.—The following from an enthusiastic friend is full of lively encouragement and good cheer; we warmly appreciate its hearty sympathy:—

"If you are any way familiar with that Teutonic beverage, lager beer, please write an article treating it as you did tea and coffee in your magazine last spring. 'Lager' is fast becoming emperor, hereabouts, of the Dutch, and, indeed, all nationalities are submitting to its sway and being deceived thereby. May I look for a chapter on this early in 1876? [Yes.]

"I have come to regard you hygienic reformers as the leading radical and effective force in the field to-day, coping with that gigantic evil, intemperance. The crusaders and

temperance organizations now existing, with their prayers, their speeches and literature, so far as I have seen, heard, or can understand them, seem to be only pelting the fortress with snow balls; and the game they gather hardly pays for the powder, while most of it flies away again. I would not undervalue their efforts, their motives, or their prayers. Many of these last do surely avail on high; for the moment they reach the Infinite Ear, back comes the answer to the hygienic centers, and thence radiates the blessing—as God works through those agencies which are always the truest interpreters of his ways, and exponents of his laws, and which point out most faithfully the narrow and neglected paths that would lead an unclean world to light, and health, and purity.

"God speed you, my friends. Your mission is a lofty one; nor deem your labor lost. Drive on your chariots, and sow good seeds of truth among blighted gardens and barren fields. Outspread your sails on every sea. Energize your co-workers and disciples with quickened zeal and larger faith, until self-denial shall sit supreme over vanquished vices, appetites, and lusts—until earth's millions shall see their besetting sins (which you condemn) forsaken, forgiven, and lying conquered beneath their feet; and instead of the effeminate and palsied pigmies of the present, bankrupt in business, health, and morals, we shall have princes indeed, and statesmen, and *Christians* of a nobler type."

A Good Recommendation.—Mr. M. E. Israel, of Mass., writes:—

"I can heartily recommend the *HEALTH REFORMER* and the manner of living that it advocates, from experience, having tried it during the last eighteen months in my family. My wife's health had been, for the last seven years, so poor she hardly expected to live from one year to another, being troubled with dyspepsia, difficulty of breathing, liver, and other complaints. She took medicine from some of the best doctors in the State of Oregon. We came to New York not quite two years ago, and went to see Dr. ———; she took his medicines about two months, without any perceptible benefit.

"After spending money enough in traveling and for doctor's bills to have built a comfort-

able home, we had our attention called to the health reform as advocated by your valuable journal. We adopted it, and the result is my wife's health is improving very fast, so she is able to do all her housework and walk a mile or two every day, and has strong hope of getting well altogether. We are not only in favor of 'throwing physic to the dogs,' but they can have the pork and grease of all kinds, with pickles, and pepper, and all unhealthful trash. Thanks for the health reform."

One Day's Work.—One of our subscribers in Vermont was so much pleased with the improvements in the REFORMER that she at once sent for an outfit for canvassing. She went to work at once, even before obtaining an outfit, and at the close of the first day's labor found that she had sold thirty-seven almanacs, and obtained six subscribers for the HEALTH REFORMER.

If every one who has enjoyed the benefits of reform would go to work with energy to enlighten his fellow-men and circulate these wholesome truths, what a mighty work would be accomplished!

Fish and Phosphorus.—A popular professor of physiology thus explodes the theory of certain modern scientists, that fish is good brain food because it contains much phosphorus, which is a necessary element of brain tissue. He says that the phosphorus found in fish tissue is so highly oxidized as to form an acid, while that in the brain is very nearly free, and shows that the body has no power to liberate the phosphorus so that it may be appropriated by the brain. He also states that vegetable food is the only source from which the brain can obtain the phosphorus in the free state necessary for its nourishment. Thus we have theory to sustain the well-attested fact that vegetable food is the best of brain food.

JUNIOR MEDIC.

A Working Reformer.—W. T. Biggs writes from Ontario as follows:—

"Happening to see some odd numbers of your excellent work lying in a friend's house, I borrowed them; and on reading them, the unity of the views contained therein and my own as regards reforms in health was such that I send you my subscription, and shall do my utmost to get my friends to do so also, as I think every household that reads the HEALTH REFORMER must be benefited thereby.

"It is now about six years since I left off using pork, tobacco, and alcohol. Since

then, I have also quit using tea and coffee. On every occasion possible I endeavor to show the evils arising from their use, and as a public school teacher make it part of my duty to show my pupils the evil effects of tobacco and alcohol, physically, mentally, and morally. I think that were these evils and their effects shown and taught in all our public schools as they should be, the next generation would not be such a tobacco-using and alcohol-soaking one as the present generation.

A Successful Worker.—Mr. Samuel Dana, who is now in his seventy-seventh year, sends a report of his success in circulating hygienic literature, for the encouragement of others. In five or six hours he sold thirty copies of the Health Almanac. He made a sale at every house where he called with the exception of two, the occupants of which were not at home. He soon disposed of his whole stock, and could have sold more than as many again if he had had them. Such a report ought certainly to be encouraging to younger workers. Who will give us another report? We are anxious to publish many such.

Health Reformers vs. Extremists.—The most common objection that is urged against our claims is that they are extreme. If we present our views in regard to diet and the treatment of the sick to people, they will agree that the majority of folks use *too much* of that which is injurious, but still they think we go too far in the other direction. As to the treatment of the sick, a comparison of the mild yet effective hygienic remedies with the nauseous doses usually administered, will convince any one who has had actual experience in both ways, that, in this respect at least, we are far from being the extremists.

Indeed, I think the people generally, and our medical friends in particular, might very properly apply the epithet to themselves.

A few weeks ago I heard a "regular" physician recommend water treatment in fevers. He thought, however, that there was danger of using water to excess. Eight general baths a day, each continued for thirty minutes at a temperature of 65°, would, he said, be sufficient for any ordinary case. Let some healthy person try this and he will conclude that it is enough for him.

If this is a specimen of their use of water, imagine the effects of a similar zeal in the use of drugs.

Health reform, instead of teaching that which is ultra or extreme, tends to lead people away from their extremely injurious hab-

its; and teaches them to use only those things that are necessary and useful. Its real object is understood by only a few; but when true reformers shall succeed in representing it fairly, candid persons cannot fail to adopt it.

NOVICE.

Admirable Pluck.—A Minnesota subscriber in requesting that his subscription be continued, writes as follows:—

"I see a special offer in the REFORMER to those who cannot pay at this time. This I am obliged to accept on account of storms during the past summer. In May a whirlwind tore down our dwelling-house, and destroyed nearly all its contents. Then again, on the 3d of August last, a hailstorm destroyed all the growing crops of four by five miles in this vicinity. All is desolate here.

"I am a farmer in a frontier county, with a large family that need healthful reading, and if I am favored by Providence another season, I can and will send you the price of subscription after another harvest. The subject of hygiene was a new one to me on the receipt of the first number of the REFORMER, which was kindly sent to me through one of your agents. I consider it an invaluable work."

We have the most profound respect for the "grit" of a man who will still persevere under such discouraging circumstances. We shall not harass such a man about his subscription. The object of our rule—terms in advance—is not to oppress the poor, or deprive them of the journal, but to protect ourselves against the carelessness of those who are able to pay promptly.

Likes our Creed.—A subscriber living in Kansas City, in renewing his subscription to the HEALTH REFORMER, says: "It is a splendid journal, and at the price is the cheapest and best I have yet seen. I like your creed. Nature's laws are the only true ones to follow in the treatment of disease. All medicine is but a substitute for pure air, light, diet, and exercise. May you all live long and prosper."

Profitable Lessons.—Another subscriber writes: "For the past year I have been perusing the HEALTH REFORMER, and can truly say that the lessons I have learned from it have been worth more than twenty dollars to me. I would cheerfully recommend this good work to one and all."

We are willing to venture the assertion

that no candid person has ever yet perused a volume of the REFORMER attentively without learning some profitable lesson from it. We aim to make each number brimful and running over with good instruction.

Three Eminent Physicians.—As the celebrated French physician, Desmoulins, lay on his death-bed, he was visited and constantly surrounded by the most distinguished medical men of Paris, as well as other prominent citizens of the metropolis. Great were the lamentations of all at the loss about to be sustained by the profession, in the death of one they regarded as its greatest ornament; but Desmoulins spoke cheerfully to his practitioners, assuring them that he had left behind three physicians much greater than himself. Each of the doctors, hoping that his own name would be called, inquired anxiously who was sufficiently illustrious to surpass the immortal Desmoulins. With great distinctness the dying man answered, "They are Water, Exercise, and Diet. Call in the service of the first freely, of the second regularly, and the third moderately. Follow this advice and you may well dispense with my aid. Living, I could do nothing without them, and dying, I shall not be missed if you make friends of these, my faithful coadjutors."

Health Reform for Small-Pox.—A lady writes from East Richford, Vt., giving her recent experience with small-pox. Her children took the disease from an emigrant who begged a night's lodging and was taken with the disease during the night. She treated her two little boys hygienically, and they made such rapid improvement, and suffered so little from the disease, that a physician who saw them expressed great astonishment, saying that although he had had ninety-nine cases before, he had seen none so remarkable. Upon learning the cause, he at once began to advocate health reform for small-pox.

How to Make a Nice Pickle.—Take your youngest male child when about three years old. Let him have everything he wants; let him make as much noise as ever he likes; let him eat and drink as much and whatever he has a fancy for; give strict instructions to his papa, his big brothers, sisters, visitors, and servants that he is never to be punished in any way for any thing he may do, and never even contradicted in any thing he may say. By the time he arrives at the sweet age of seven your youngest male child will be a very nice pickle.

Questions and Answers.

Home Prescriptions.—There are many whose ailments are of so complicated a nature that a proper prescription cannot be given in the limited space devoted to this department. Such should send for a printed list of questions and terms for home prescriptions. Many can cure themselves of unpleasant difficulties by a few weeks of careful treatment at home.

Deafness.—N. J. S., Mich., writes: I have been troubled with deafness about five months. I cannot hear common conversation. Once I was relieved by a sudden explosion in my ears; but I immediately took cold, and am now as bad as ever. Have always been troubled with gatherings in my ears after taking cold. My general health is quite good, and my diet is plain. Am sixteen years of age. Please inform me what course to pursue to restore my hearing.

Ans. You give no information concerning the origin of your difficulty. If we are correct in the supposition that the deafness first appeared as the result of a cold in the head, or catarrh, it is probably due to inflammation of the Eustachian canal or the lining membrane of the ear. You should have the organs examined at once by a competent aural surgeon, in order that permanent deafness may be prevented, if possible. You may find some relief by the use of alternate hot and cold applications in connection with hot foot-baths.

Bread and Milk.—M. W. H., N. H., asks: Will you please state your opinion of the healthfulness of bread and milk, eaten together, as an article of food? Is the milk itself injurious to health? If not, does the partaking of it with solid food render it injurious?

Ans. Bread and milk is nutritious food; and if the milk were always good and the bread wholesome, little objection could be raised against its use as a general and regular diet. But the milk is seldom wholly free from diseased products of some kind, and the bread is often poisoned by yeast, baking powder, soda, saleratus, and other chemicals, and thus bread and milk is very commonly found to be lacking in some of the most essential qualities which a standard food should possess. In former numbers of the journal, we have called attention to some of the principal objections to the use of milk. Milk with bread is better than milk alone.

Healthful Diet.—A dyspeptic asks: 1. Would you consider it healthful diet for a hygienist, who takes only two meals a day, to make one meal on unleavened wheat-meal crackers, and a small quantity of dates and figs alternately?

2. Could you name two or three articles on which man could subsist always and maintain good health?

Ans. 1. Yes.

2. A person would probably thrive an indefinite length of time on a diet of wheat-meal bread, apples, and almonds or chestnuts, provided all his other habits were as good as his dietary. Man needs a certain amount of the oleaginous element, which is found neither in graham bread, figs, nor dates, in sufficient quantity. The taste usually tires of a sameness of food, so that a moderate variety is usually better than a continuous use of the same articles.

Dyspepsia.—J. B. L., Ind., complains of indigestion and nearly all of the usual accompanying symptoms. Is taking quinine. Wants advice.

Ans. Stop taking quinine at once. Live healthfully, eat sparingly, exercise in the open air as much as possible, take a sponge-bath at ninety degrees twice a week, and eat but two meals a day.

Boils.—W. D., Cal., is suffering with boils upon his neck which follow each other in rapid succession, and, as he says, are very quarrelsome. He wishes to know the cause and cure.

Ans. The cause of the boils is obstruction of the circulation, probably by effete particles which should have been eliminated from the system by the liver or other excretory organs. Two or three thorough packs, with daily fomentations applied over the liver, together with a spare diet and plenty of out-of-door exercise, will probably soon relieve you of these unpleasant "comforters." Bathe the neck in cold water daily, rubbing well afterward. Apply hot fomentations to the boils themselves.

Tender Breast.—Mrs. J. H. M., Pa., apply hot fomentations for ten minutes daily, following the application by cool bathing of the part. Avoid all pressure upon the organ and too much heat from improper clothing.

Catarrh.—J. O'C., Rochester, N. Y., wishes to know what he can do to relieve himself from an unpleasant discharge from his throat every morning after eating.

Ans. You have chronic catarrh. Mucus and other discharges accumulate in the back part of the nasal cavity during sleep. In the morning, this becomes loosened and is thrown out. A long course of careful living and thorough treatment will be necessary to cure the disease.

Dyspepsia.—P. P. A. has had dyspepsia for several years. The disease continues although he has made some reforms in diet. He asks, What shall I do to cure myself?

Ans. Get the small tract on "Dyspepsia," for sale at this Office, price 5 cts., follow its teachings to the letter, and if you do not recover, let us hear from you again.

Prolapsus Uteri.—Mrs. M. J. M., Iowa: This disease can be cured by a proper combination of hygienic appliances, even though of several years' standing. The Movement Cure and electricity are among the most efficient curative agents.

Mrs. A. D. P., Ill., wishes to know what to do with a small child which has a very loose cough but cannot be taught to raise anything.

Ans. If there is evidence that the child swallows a good deal of phlegm, a warm water emetic may be given occasionally to relieve the stomach.

Sundries.—A subscriber, signing himself "Kansas," asks a variety of questions. The following are a few of the more important ones:—

1. What is the cause and cure of drowsiness? I can't keep awake during church service, and fall asleep as soon as I attempt to read, even though I have plenty of sleep nights. *Ans.* Drowsiness very frequently is caused by overloading the stomach with food. This may be the cause in your case. The cure is evident. Perhaps you are dyspeptic.

2. Which is the more healthful; milk, or butter? *Ans.* Milk.

3. Are eggs healthful food? *Ans.* Eggs are nutritious, but are not the best food.

4. Which is the more healthful bread; cold biscuit made with baking powder without shortening, or fermented bread? *Ans.* The latter.

5. Can you give us a bill of fare for summer and one for winter. *Ans.* You will find a bill of fare for each month in the year in the Family Health Almanac, and also in "Healthful Cookery." Each invalid needs a bill of fare adapted to his particular case.

6. Are there any health reform settlements in the United States? *Ans.* We are not aware of any. The largest collection of hygienists with which we are acquainted is in this city.

7. Why are most health reformers free lovers or infidels? This has been a great drawback to health reform. *Ans.* We are glad to know that you are in error in supposing that the majority of health reformers are either free lovers or infidels. We have the means of knowing positively that the great majority of believers in this reform are also firm believers in Christianity. It is a sad fact that the infidel and immoral tendencies of some prominent health reformers have brought a great amount of unjust reproach upon the cause of reform. The public ought to be made to understand that this class of hygienists are a very small minority. Of course we do not object to any man's being a hygienist, no matter what his other tenets or practices may be—we may even admire the little good there may be in him, and give him full credit for it—but we do protest that such persons should not be taken as representatives of the whole class of hygienists, whom we believe to be, on the whole, the purest, most upright, honorable, and Christian people on the face of the globe.

8. Why are nearly all health reformers such large eaters? *Ans.* We are of the opinion that this question is founded upon an incorrect supposition. According to our observation, health reformers, as a class, do not eat more than other people. When a person first makes the change of diet necessary in becoming a hygienist, his appetite becomes so keen that he is apt to eat more than nature requires; but he may soon learn to control his appetite satisfactorily if he will.

9. According to my experience, those who do not use stimulants eat a great deal more than those who use tea, coffee, tobacco, and liquors. Now, which is the more injurious; to overeat and suffer from indigestion every day, or to eat less and take some stimulus? *Ans.* The best way is to do neither. It makes very little difference whether a man kills himself by gluttony or drunkenness. The result is the same whether an individual commits suicide by jumping into a mill-pond or a lime-kiln.

You are right in thinking that health reformers cannot make much progress without overcoming the habit of overeating. A good deal of self-control is essential in the composition of a health reformer. Slow eating and thorough mastication are two of the best remedies for overeating.

FARM AND HOUSEHOLD

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

To Soften Leather.—Melt a quarter of a pound of tallow. Add an equal weight of olive oil. Apply to the leather and rub in thoroughly. Is excellent for shoes.

Cleansing Foul Cisterns.—If the water of a cistern is very foul, let down into it a bushel of pounded charcoal inclosed in a coarse sack. Repeat the process, if necessary, with fresh coal.

To Clean Old Bottles.—Fill the bottles with strong soap and water, and add a small quantity of charcoal broken into small bits. After soaking an hour or two, thorough shaking will complete the cleansing process.

Mucilage.—Ordinary mucilage made from gum arabic will not fix paper to wood or metallic surfaces. It acquires this property, however, by the addition of 1-25 its weight of sulphate of aluminum previously dissolved in ten times its bulk of water.

Restoration of Faded Writings.—Wet the paper and then pass over it a brush dipped in sulpho-hydrate of ammonia. The characters will reappear at once, of a very deep, black color, which is permanent on parchment but soon fades if the writing is on paper.

Furs and Skins in Winter.—Dönhoff has found that an ox-hide which weighs fifty-five lbs. in summer, weighs seventy lbs. in the winter. The hair alone weighs two pounds in winter and one in summer. Calves, sheep, and goats born in the winter have thicker and longer fur than those born in the summer.

Charcoal as a Medicine.—The *Rural New Yorker* recommends charcoal as a good remedy in case of indigestion in animals. Half a teacupful given with water, from a bottle, is said to have speedily cured a bad case of bloat. The remedy would certainly be quite harmless, which cannot be said of the drugs usually given sick animals.

Removal of Grease Spots.—Benzole magnesia, a simple paste made of calcined magne-

sia and benzole, will take grease spots out of almost anything however delicate. A paste of soda and quicklime is good to take oil stains from wood floors.

To Restore Frozen Plants.—A correspondent of the *Inter-Ocean* states that plants which have been frozen may be restored without material damage by placing them in a cool atmosphere and gradually increasing the temperature. They should be handled as little as possible. Showering with cool water is also recommended.

To Restore Gilt Frames.—Take one ounce of cooking soda and beat it thoroughly with the whites of three eggs. Blow off the dust with a pair of bellows, or brush it out with a feather duster. Then dip a small paint brush into the mixture and rub it all over the gilding, into every tiny crevice, and it will render it fresh and bright.

To Make Carriages Last.—Keep them clean. Dirt spoils the paint, and rain enters; the wood cracks, warps, and decays. Dirt on the hubs enters them, and grinds and wears out the axles. When they are greased or oiled, scrape and wipe off the axles perfectly clean, so as not to mix grit with the oil. Keep the nuts well screwed up, for which purpose examine them often.

Chapped Hands.—If the hands are kept clean, and are carefully dried before exposure to cold air, they will not often chap. Rubbing them with powdered starch after washing is a good preventive of chapping. The following is very strongly recommended for chapped hands. Melt together two ounces oil of sweet almonds, half an ounce of sperm-aceti, and a little wax. After removing from the fire, add rose water in small quantities at a time, stirring constantly. Add lastly an ounce of glycerine. This is also a good application for burns.

What Is in the Bedroom.—The importance of ventilating bedrooms is a fact in which everybody is vitally interested, and which few properly appreciate. If two men are to occupy a bedroom during the night, let them

step upon the weighing scales as they retire, and then again the next morning, and they will find that their actual weight is a pound less in the morning. Frequently there will be a loss of one or two pounds, and the average loss throughout the year will be more than one pound; that is, during the night there is a loss of one pound of matter, which has gone off from their bodies, from their lungs partly, and partly through the pores of the skin. The escaped material is carbonic acid and decayed animal matter, or poisonous exhalations.—*Sel.*

Whitewash.—The Treasury Department recommends the following to lighthouse keepers; it is equally good for application to wood, brick, or stone:—

“Slake about $\frac{1}{2}$ bushel unslaked lime with boiling water, keeping it covered during the process. Strain it, and add a peck of salt, dissolved in warm water, 3 lbs. of ground rice put in boiling water and boiled to a thin paste, $\frac{1}{2}$ lb. powdered Spanish whiting, and 1 lb. clear glue, dissolved in warm water; mix these well together, and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace, and when used put it on as hot as possible, with either painters' or whitewash brushes.”

Hints about Using Kerosene Oil.—Coal oil lamps will be much safer to use, if the bowl is loosely filled with raw cotton or tow before putting in any oil. In case of explosion or falling on the floor, the burning fluid cannot fly all over everything.

Always fill a coal oil lamp every day before using. The bowl should never be allowed to get empty and be lighted in that condition, for the vacant space is always full of explosive gas.

Never, under any circumstances whatever, try to kindle a fire by pouring coal oil into a stove from a can. Thousands of persons have been burned to death in this way, and still the papers chronicle other victims to the practice.

Uses of Carbolic Acid.—This powerful disinfectant should be in every household. A few ounces cost but a trifle and will last a long time. The many uses for the acid make it almost indispensable. For convenient use, a little alcohol may be added to the crystals to dissolve them. Here are a few of the many uses to which it may be put:—

A few drops added to a pot of glue or paste will prevent mold and souring. Always add a little to the water used in wash-

ing walls. A few drams added to the white-wash greatly increases its disinfecting and preservative value. A drop or two will preserve ink or mucilage from becoming offensive. Paste for wall paper should always be liberally supplied with the acid, which will prevent the decomposition of the paste under the influence of warmth and moisture.

Washing Flannels and Linen.—The *Scientific American* recommends the following:—

“To whiten flannel, made yellow by age, dissolve $1\frac{1}{2}$ lbs. of white soap in 50 lbs. soft water, and also $\frac{2}{3}$ oz. spirits of ammonia. Immerse the flannel, stir well around for a short time, and wash in pure water. When black or navy blue linens are washed, soap should not be used. Take instead, two potatoes grated into tepid soft water (after having them washed and peeled), into which a teaspoonful of ammonia has been put. Wash the linens with this, and rinse them with cold blue water. They will need no starch, and should be dried and ironed on the wrong side. An infusion of hay will keep the natural color in buff linens, and an infusion of bran will do the same for prints.”

Take Care of the Health.—According to the almanac, spring has come, and with it will come piercing March winds, and changeable weather. This is the season of the year for colds and influenzas, and special care must be taken to avoid the causes of diseases. It should not be forgotten that pure air is just as essential in the winter as at any other time, and good ventilation should be secured at all times as one of the most efficient means of fortifying the system against disease.

The premises should be thoroughly examined to see that there is nothing about which can become a cause of disease. Heaps of garbage are often allowed to accumulate in the fence corner, or in close proximity to the house, which may become most prolific sources of disease germs when the warm weather appears. The slops from the house should not be emptied at the back door, even in winter; for although the cold weather of January may keep the causes of disease inactive, as soon as warm weather approaches the winter's accumulations will become a seething mass of the most poisonous filth.

Barnyards, vaults, cisterns, wells, cess-pools, drains, and sewers should be thoroughly cleansed. Refuse and decaying vegetables should be removed from the cellar. Work of this kind attended to now will save much spring sickness.

POPULAR SCIENCE?

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

Brilliant Red Light.—Mix thoroughly 10 parts of chlorate of potash, 3 parts carbonate of strontia, and 20 parts of powdered shellac. Ignite. A still more brilliant light can be made by mixing chlorate of potash 9 parts, nitrate of strontia 14 parts, nitre 4 parts, sulphide of copper 1 part, shellac 4 parts.

A Walking Engine.—Experiments continue to be made in France to test the efficiency of an engine of peculiar construction. This engine is described as having no wheels, but is provided instead with what may be called legs. It does not roll; it walks, runs, or gallops. It is like an ordinary engine, with straight rods terminating in broad circular skates. There are three legs in front, and three behind. The moving cylinders, instead of turning wheels, raise the feet. The invention, it is claimed, is particularly adapted for carrying great weights up an incline, as a convenient substitute for the means now employed. One of these, which is at present at work on a French railway, weighs ten tons, and goes from four to five miles every hour, but can accomplish, if desired, eleven or twelve miles.—*Sun.*

Spontaneous Generation an Impossibility.—Professor Tyndall has lately read before the Royal Society a very important paper "On the Optical Department of the Atmosphere, with Reference to the Phenomena of Putrefaction and Infection." It has been known for some time that air might be rendered free from floating particles by passing it through fire, acids, or cotton wool; and the Professor showed, not very long ago, that air thus purified will not transmit light, and a glass chamber filled with it remains dark, when placed in a beam of concentrated light, simply because there is nothing to reflect or scatter, or in other words to render visible the light. Since then Professor Tyndall has discovered that air inclosed in a glass chamber and left undisturbed for three or four days deposits all the floating particles and becomes optically clear and dark to the beam of light. In this paper, Dr. Tyndall has apparently put the finishing stroke to the hypothesis of spontaneous generation, for he shows that solu-

tions confined in chambers of optically pure air remain unaltered for months, while portions of the same or similar solutions, when exposed to the atmosphere, swarm with bacteria in a few days. From his experiments, Professor Tyndall concludes that spontaneous generation is an impossibility, and that putrefaction and infection would be unknown in an optically pure atmosphere.—*Sc. American.*

Contraction of the Earth.—An eminent French geologist has been attempting to calculate, on the basis of certain allowable suppositions, the amount in volume of the solid shell of our earth which must be crushed annually in order to allow the shell to follow down after the more rapidly contracting nucleus. He shows that the amount of crushed and extruded rock necessary for the supply of heat for the support of existing volcanic action can be supplied by that extruded from a shell between 600 and 800 miles thick, and that the volume of material, heated or molten, annually blown out from all existing volcanic cones could be supplied by the extruded matter from a shell of between 200 and 400 miles in thickness. On data which seem tolerably reliable, this investigator has further been able to calculate, as he believes for the first time, the amount of annual contraction of our globe, and to show that if that be assumed constant for the last 5,000 years, it would amount to a little more than a reduction of about three and one-half inches on the earth's mean radius.

Now this quantity, mighty as are the effects it produces, is thus shown to be so small as to elude all direct astronomical observation; and when viewed in reference to the increase in density due to refrigeration of the shell, to be incapable of producing, during the last 2,000 years, any sensible effect upon the length of the day, contrary to the general impression.

At the rate of contraction of three and one-half inches in 5,000 years, as above noted, it would require 90,000,000 of years to diminish the earth's radius by one mile; and, therefore, if there be any correctness in these data, the resulting figure expressing the age of the earth will be large enough to satisfy all the demands of the most extreme geological theories.—*St. Louis Republican.*

NEWS AND MISCELLANY

In this Department Will Be Summarized the Most Important of the Events of the Day.

—Snow is nine feet deep in Austria.
—An insurrection has broken out in Mexico.
—The insurrection in Turkey still continues.
—Twenty milkmen have been tried and convicted in New York for "watering" their milk.
—William Cullen Bryant, at the age of eighty-one, is writing a history of the United States.
—The Carlist party in Spain is daily becoming weaker through desertion and defeat.

—Cases of trichinosis have recently appeared in Kingston, New York.

—The female population of Germany is 755,000 in excess of the males.

—More than forty persons aged 100 years or over are said to have died in the United States during the last year.

—A Northampton bank was robbed of more than \$700,000 the night of Jan. 25. One of the burglars has been captured.

—The Prince of Wales is on a pleasure excursion in India, amusing himself with elephant and buffalo fights.

—Moody and Sankey are well established in New York at the Hippodrome. Their audiences often number more than 10,000.

—An Oregon saw-mill owner is to furnish for exhibition at the Centennial a fir plank one hundred feet long and twelve feet wide.

—A Frenchman has invented a novel device for voting by electricity. It is especially designed for legislative assemblies.

—All the gold coin in the world if made into a single mass would equal a cube twenty-three feet square, the value of which would be about \$3,000,000,000.

—C. K. Landis, the murderer of Carruth, was acquitted by jury a few days since on the ground of insanity. He is now pronounced sane and has been released from custody.

—According to the report of the Bureau of Education for 1875, the number of medical schools in the United States is ninety-nine. The aggregate number of students in attendance during the year was 9,095.

—During the four weeks ending Dec. 25, 1875, there were 2052 deaths in New York City. Of these, nearly one-half were under five years of age. There were 233 deaths from diphtheria, and 314 from consumption.

—According to the *Journal of Telegraphy* there have been laid during the last ten years thirty-four ocean cables more than 500 miles in length, and about 120 shorter cables. The longest cable is 3,333 miles in length.

—England employs more than 500,000 men in coal mining. An average of 1000 men are killed and 4,000 wounded every year. In the Pennsylvania mines one man is killed for every 35,000 tons of coal mined.

—The pound master of San Francisco sells the dead carcasses of the dogs which he kills to a certain manufactory which tans the skins and makes gloves of them, sells the bones to sugar refiners and the fat for cod-liver oil.

—The advisory council called by Plymouth church is now in session. Mr. Bowen has openly pronounced Mr. Beecher a perjurer, and has agreed to present before the council evidences of his guilt. Mr. Beecher declares that Bowen is a slanderer and a liar.

—Mr. G. T. Angell, of Mass., estimates that the annual cost of crime in this country is \$200,000,000. He finds that it has more than doubled during the last ten years, and that there is one-third more crime in Massachusetts than in Ireland.


—The *London Times* describes the Sultan of Turkey as the most extravagant monarch living. His annual expenditures during his entire reign have been \$2,000,000. He supports 5,500 servants and 1,200 wives; 7,000 persons dine daily in his palace. No wonder he is bankrupt.

—According to the various newspaper reports, it would appear that the hog race bids fair to be exterminated by a fatal contagion which is now making havoc among the scavengers in the West. In one county in Illinois more than 25,000 have already died. This epidemic is bad for the hogs, but, we doubt not, is a blessing to humanity.

—According to Dr. Caspar, of Berlin, the average age of clergymen is 65; of merchants, 62; clerks and farmers, 61; military men, 59; lawyers, 58; artists, 57; and medical men, 56. The average duration of life in different countries is as follows: In Russia, 21; Prussia, 29; Switzerland, 34; France, 35; Belgium, 36; and England, 38.

—Materialization in England has received a hard blow by an exposure in Liverpool. Mr. Herne, a well-known medium, had been giving very satisfactory seances, in which the figures of supposed dead folks appeared in a dim light, as they do on similar occasions in this country. One night the performance had gone on smoothly for a while, when the famous "John King" walked out of the cabinet. He began a speech about "Katie King," his daughter, but had not said much when he was grabbed by two of the nearest spectators. There was a lively struggle, but the medium—for "John King" was none other than Herne, slightly disguised—was held fast and exposed.—*N. Y. Sun.*


Items for the Month.

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

FEET-WARMERS.—Mr. Wm. C. Leibrandt, 1115 Fatnall St., Wilmington, Del., has sent us for examination a new device for keeping the feet warm. We find the article to be all that he claims for it. He sends it by mail, post-paid, for 50 cents.

NEW SUBSCRIBERS.—Although the times are hard, and nearly all families of moderate means find it necessary to curtail expenses as much as possible, most of our old patrons find that they cannot do without the HEALTH REFORMER. The thousands of new names which are being added to our lists also assure us that there are those who place a right estimate upon the value of health and healthful instruction, and are willing to make some sacrifice in order to obtain these essentials.

BACK NUMBERS.—Several subscribers misapprehended our request in the January number that those who were willing to do so would send us volume one of the HEALTH REFORMER. We have received several sets of the numbers for last year. These are, of course, of no use to us as we have a supply of unsoiled ones, and we cannot give the senders credit for one year's subscription as we offered to do for copies of volume one. We will make such disposition of the wrong numbers sent as the senders may designate.

 We would again remind those whose subscriptions are just expiring that our terms are strictly "in advance" unless we have good reasons for believing that the subscriber intends to pay, but is prevented from doing so by pecuniary embarrassment. We do not wish to remove from our lists the name of a single individual who desires to continue reading the journal. If those who are in too close circumstances to pay at present on account of the hard times will send us a card signifying their intention to pay as soon as they can do so, and stating their circumstances, we will gladly continue to send them the journal. We wish to benefit the poor as well as the rich. All who can do so are expected to renew promptly. By thus doing, they will enable us to be more lenient with those who are embarrassed by poverty.

REFORMER TO FRIENDS.—Any person who wishes to send the REFORMER to his friends will

be furnished with the journal at half price, or fifty cents a year. We are acquainted with numerous instances in which whole families have become thorough reformers through the means of the REFORMER sent to them by some friend. The experiment is worth trying, friends, since it is not a very costly one. \$10.00 will supply twenty families with wholesome reading for a year. Who can tell how many sick ones may be made well, and how many useful lives may be prolonged by the paltry sum thus expended? First obtain the consent of your friends to receive the journal and a promise to read it. Then send us their addresses, plainly written, and accompanied by the requisite amount in a draft, postal order, or registered letter.

MATRIMONIAL.—On the evening of Feb. 9, were married, in Oakland, Cal., Willie C. White, youngest son of Eld. James White, and Mary E. Kelsey, both of whom have resided until recently in this place. Both parties are persons of marked ability and numerous amiable qualities, which have won for them hosts of friends. The news of their marriage will not be received with any less pleasure on account of its having been long anticipated. We are happy to state that our friends are thorough hygienists. The REFORMER extends to them its warmest congratulations and best wishes. We have unbounded faith in their future happiness and prosperity, and predict for them a career of wide usefulness.

Mr. and Mrs. W. C. White are spending a short vacation in Petaluma, preparatory to another year's work in connection with the *Signs of the Times*.

REACTIONARY LIFT-MACHINE.—The Health Institute has recently purchased one of these admirable machines of the Health Lift Co., whose advertisement appears on another page. The machine itself is a very ingenious combination of levers, which are capable of adjustment in such a way as to adapt the machine to the lifting capacity of the feeblest invalid or the strongest man. It is an elegant piece of apparatus, in appearance, and its beauties as a means of improving the health daily become more apparent to those who are so fortunate as to have the opportunity of using one.

The "lift cure" is by no means a specific, but it is just the thing for a large class of patients when used in connection with other remedies. Consumptives, when not too far advanced in disease, dyspeptics, gouty people, and hundreds of other classes of invalids, can lift themselves into health if they will. A great many would do well to avail themselves of this valuable means of regaining health.