THE

HEALTH REFORMER.

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

VOL. 11. BATTLE CREEK, MICH., JULY, 1876. NO. 7.

WINE AND THE BIBLE.—No. 3.

EXAMINATION OF TEXTS.

TEXTS WHICH DISCOUNTENANCE THE USE OF WINE AND FERMENTED LIQUORS.

As remarked in last number, having shown that two kinds of wine are recognized in the Bible, one of which was wholesome, the other harmful—though often referred to by the same terms—it is most reasonable to suppose that when wine is spoken of in terms of commendation, that which was wholesome is referred to; and when the opposite terms are employed, the contrary kind of wine is meant. This principle should be borne in mind in considering the following scriptures, which are a few of those which condemn the use of wine and strong drink:—

"Wine is a mocker, strong drink is raging: and whosoever is deceived thereby is not wise." Prov. 20:1.

No language could better describe the real character of wine and strong drink than the words of the wise man. "Wine is a mocker;" or in other words, a deceiver. It deludes the drinker with the fancy that it does him good, while it is all the time sapping his life and leading him to certain ruin.

"Woe unto them that rise up early in the morning that they may follow strong drink; that continue until night, till wine inflame them." Isa. 5:11.

There is no solace here for the drunkard. In addition to the immediate ills which he brings upon himself by his revelings, the Almighty has pronounced a woe upon him.

"For the drunkard and the glutton shall come to poverty." Prov. 23:21.

Every one has seen the truth of this scripture repeatedly exemplified in the downward career of the drinker, who sinks from bad to worse, squanders his property, and not infrequently dies at last in the poor-house or on the public highway.

"Who hath woe? who hath sorrow? who hath contentions? who hath babbling? who hath wounds without cause? who hath redness of eyes? They that tarry long at the wine; they that go to seek mixed wine." Prov. 23:29, 30.

The truthful picture which inspiration has here drawn of the real experience of the drunkard is in strong contrast with the glowing descriptions of delightful exhilaration and pleasurable sensations which the tempter gives as the effects of alcohol. No one will dispute the accuracy of the inspired word who has carefully observed the effects of wine.

"Look not thou upon the wine when it is red, when it giveth his color in the cup, when it moveth itself aright. At the last it biteth like a serpent, and stingeth like an adder." Prov. 23:31, 32.

The wise man here gives a very precise description of fermented wine, and then admonishes us that we should not even look upon it, much less taste it. Surely, this is countenancing the most rigid total abstinence. How can moderate drinkers who believe in the divine origin of the Bible continue to indulge in even the mildest fermented liquor, in the face of this admonition?

"But judge this rather, that no man put a stumbling-block or an occasion to fall in his brother's way." Rom. 14:13.

This text does not mention wine, but it is a very powerful rebuke to those moderate drinkers who maintain that it is only the excess of wine that is harmful, and that so long as they indulge moderately, no one has the right to question the propriety of their course. Some persons may possess sufficient will power to enable them to continue a course of moderate tippling for many years; but their example in using wine will lead to perdition many less resolute persons who have likewise begun as moderate drinkers, but, lacking power to control the appetite for drink, end their career in drunkards' graves. The Bible makes the moderate drinker in great degree responsible for the sins and excesses of his weaker brother who fell through attempting to follow an example which he lacked the power to fully imitate.

Here are the qualities of good and bad wine contrasted :—

BAD WINE.	GOOD WINE.
Fermented.	Unfermented.
Contains alcohol.	Contains no alcohol.
Poisonous.	Wholesome.
Intoxicating.	Unintoxicating.
Produced by decay.	Produced by natural growth.
A symbol of wrath.	A symbol of blessing.
"Wine is a mocker."	"Cheereth God and man."
"Look not thou upon the wine when it is red."	"Use a little wine for thy stomach's sake."
"Strong drink is raging."	
"Poison of dragons."	
"Cruel venom of asps."	"Maketh the heart glad."
"Biteth like a serpent and stingeth like an adder."	
"Woe unto him that giveth his neighbor drink, that puttest thy bottle to him."	"And he took the cup, and gave thanks, and gave it to them saying, Drink ye all of it."

USE OF WINE BY BIBLE CHARACTERS.

If it is still persisted that wine of an intoxicating nature was used by some of the most eminent characters of the Bible, we have only to glance at the effects to see the absurdity of making such a course an example to be followed. It will be found that the effects were notably evil whenever any effects whatever are recorded.

Noah's Drunkenness.— "And Noah began to be an husbandman, and he planted a vineyard: and he drank of the wine and was drunken; and he was uncovered within his tent." Gen. 9 : 20, 21. This is the very first mention of wine in the Bible. Its effects upon Noah show that it was intoxicating. It so muddled the brain of this great and good man that he lost all sense of propriety, and fell into a state of insensibility in his tent, in a condition of indecent exposure. This unfortunate occurrence also became the occasion of national misfortune to one line of Noah's descendants, through the disrespect of one of his sons. No doubt the first effect of the wine was exhilarating. Doubtless it dispelled from Noah's mind all anxiety about the future prosperity of his extensive plantation, which was to be repeopled, resubdued, and tilled by himself and his descendants. But that it also blunted those other finer sensibilities of his nature, which should always be acute and active, is quite apparent. Surely, then, there can be nothing here to recommend the use of wine.

Lot's Shame.—The next undisputed mention of wine is in Gen. 19 : 34–36. In this instance, the wine employed was doubtless of the kind called "mixed wine," which possessed most powerful intoxicating properties. The effects in this case were anything but such as would recommend the use of wine; for they led the righteous Lot—who had dwelt in Sodom so many years, surrounded with wickedness, yet preserving his integrity —to commit a crime even worse than that for purposing which the lecherous Sodomites were smitten with blindness.

Nadab and Abihu.—These two sons of Aaron, while under the influence of drink, were so presumptuous as to directly disobey the express command of the Almighty by offering strange fire upon the sacred altar. In consequence of this daring act of disobedience, they were suddenly smitten with death by the hand of the Lord, who evidently designed by this summary act of justice to render them an example to succeeding generations. This is a most striking illustration of the influence of alcohol to render the mind incapable of distinguishing between sacred and common things. It has an unmistakable influence to blunt the moral sensibilities of men.

It certainly will not be argued that in any of these instances the use of fermented, or intoxicating, wine was beneficial.

BIBLE TEETOTALERS.

While there is no evidence in the Bible that the use of intoxicating wine ever did, or ever could, do any one the slightest possible good, we have the illustrious example of some of the most eminent Bible characters as teetotalers.

The Israelites.—During the sojourn of the children of Israel in Egypt, they were, undoubtedly, total abstainers, since their masters, the Egyptians, at that time made no use of any fermented liquor. During their journey in the wilderness, the Israelites were of necessity abstainers, their only drink being the purest water from the rock. To this long discipline of temperance might be largely attributed that hardihood, fortitude, and bravery, which enabled them to sweep out with astonishing rapidity the enervated nations of Palestine, who had wasted their energies by intemperate and riotous living, and were thus easily vanquished, though protected by strong walls and fortresses.

The Nazarites.—At the time of the establishment of the ceremonial law, there was also instituted an order of teetotalers. They were called Nazarites. They dedicated themselves wholly to the service of God; and one of the conditions of the dedication was total abstinence from the use of wine. To insure a perfect observance of the pledge, all wine was prohibited, whether fermented or unfer-

mented. Many of the finest personages of the Bible were members of this class. It is quite probable that Daniel and his three Hebrew brethren were Nazarites, since they refused to drink the king's wine, preferring pulse and water.

Samson.—This Hebrew Hercules was a teetotaler from his birth. None of his muscles were weakened by alcoholic degeneration. None of his nerves were paralyzed by stimulants. He was a Nazarite, and is a fair illustration of the incompatibility of alcohol with strength. Milo, the famous Greek who rivaled Samson in his prodigious strength, was likewise a total abstainer, as well as a vegetarian.

The Rechabites.—These were a sort of family temperance society. They abstained from the use of wine because commanded to do so by their father; and the Lord commended them for their constancy. If the sons of the present age were as careful to follow the commands of their fathers as were those of ancient times, there would certainly be fewer drunkards. But drink deprives a youth of natural affection. It leads him to trample upon the authority of his father, and to treat with contempt the prayers and tears of a loving mother. What a terrible monster is drink!

The Essenes.—The class of Jews known by this name were very temperate in all their habits. They were strict teetotalers, carefully avoiding the slightest indulgence in fermented drinks. They were noted for their rigorous piety. It is thought by many that John the Baptist was a member of this class. He was a Nazarite, at least.

Timothy must have been a total abstainer, since it was necessary for Paul to advise him to take a little wine (sweet wine) for his "stomach's sake." There would have been no propriety in such advice had he been in the habit of using wine. History, as well as the Bible, furnishes numerous examples of temperance. Pythagoras, one of the most renowned philosophers of ancient times, was an advocate of total abstinence. Neither himself nor his followers made use of wine. Wine was prohibited to those who were training for competition at the national games. It appears evident, indeed, that there have always been societies analagous to temperance societies, or organizations opposed to the use of intoxicating drinks. There are, even at the present day, barbarous tribes the individuals of which are strict abstainers, the use of wine being prohibited by their religion.

The relation of the Bible to temperance may be summed up in the following brief conclusions, to which the evidence presented must lead us:—

1. The use of intoxicating drinks is not commanded in the Bible.
2. The use of fermented wine is not recommended.
3. Its use is not countenanced either as a harmless practice or a necessary evil.
4. Total abstinence is nowhere condemned.
5. Many texts commend abstinence, and some command it.
6. There is nothing in the Scriptures which disagrees with the principles of total abstinence, and nothing which sustains moderate drinking.
7. Hence, the Bible agrees with science and common sense in denouncing the use of intoxicating liquors, and commending temperance.

In the face of these facts, can any person who has a particle of faith in the inspiration of the Scriptures, and in man's accountability to his Creator, continue to indulge in the use of wine *in any degree whatever?*

We cannot see how it would be possible for an individual to do so and still preserve "a conscience void of offense."

Hygienic Progress.

LET me draw a picture of a hygienist. Do you see that man returning from the store? Yes; he is carrying something under his arm. What is it? Surely it must be something strange; for his countenance looks disturbed, and he appears like a man who has been stealing sheep. Who is this man? Mr. H., the hygienist. A hygienist! Indeed! Are those fanatics found in this town? Let us follow him to his house. How he hurries! I wonder what he has. Now he opens the door to his kitchen, enters, lays down his bundle, opens it, takes one look at the contents, gives an order to the cook, and then retires to the sitting-room. His bundle! Something to eat! Yes. A — a — ; yes; well, what? *A ham!!* The word almost choked me. A hygienist eating ham? "Oh! what a fall was that, my countrymen."

This picture I have drawn from what people report in a neighboring town about a man who has been known as a leader of the reform movement, a strict hygienist. I knew him several years ago, a skeptic, a tobacco-chewer, a pork-eater, steeped in defilement, boils, sores, indigestion, a broken-down constitution. I lent him some papers, gave him books to read, offered friendly counsel, got him started for a cure. He came back a reformed man, sores cured, digestion restored, mind cleared, spirit subdued, a converted man, a Christian.

His influence became great, others followed his example, and hygiene seemed likely to triumph in the town. How changed now! This influence for the elevation of humanity is all thrown away for a price cheaper than that for which Esau sold his birthright. It is not a mess of pottage, but a piece of hog! Verily, how are the mighty fallen!

But my friend says, "You cannot keep people up to this system of living." Can they be kept up to anything higher than the service of "the world, the flesh, and the devil?" The history of all reforms is a history of backsliding and defection. If all who have been converted to Christianity had remained Christians, truly the world would be a paradise. Back, back, back, one after another; thus they go. The ministers of the gospel understand well this phase of human nature, and have to learn to endure the trial. It is the same with all reform, all progress, all advancement. We must not be discouraged when we see it, but prepare to meet it manfully. To help the friends of our cause in these sore trials and desertion, I will offer a few suggestions, which, I trust, may not be in vain.

In the first place, although from the number we see who have abandoned this cause it may appear that all who espouse it do the same thing, yet this is not the case. A prophet of Israel once thought that the whole Jewish nation had apostatized, and become idolators; but when God opened his eyes, he saw seven thousand who had not bowed the knee to Baal.

Thus it is with the cause we advocate. Many go back to swine's flesh and Satan's pottage; but there is a numerous company scattered throughout the land who keep conscientiously up to the strict letter of hygienic living, as they understand it. They may be few in proportion to the whole number who espouse this cause, but still they are enough to give us every hope that the cause will triumph.

Again: the influence of reformers is not to be estimated by the number of professed converts to this glorious system which we call hygienic living. In talking with a missionary from China, I spoke of the small number of converts which was reported by the record of their missions. To this he replied: "For every open conversion which we effect, we influence a hundred others whose names are never identified with the cause." So it is with us. From my own experience I have wondered at the mighty influence exerted by reformers in the community where they reside. And this influence often reaches those who are open enemies of the cause. I have noticed in towns, family after family buying graham flour, oat-meal, and such articles of diet, changing their dress, reforming their living in various ways, and becoming semi-reformers, even while denouncing the hygienic movement as the grossest fanaticism. Indeed, they are much more consistent than our pork-eating hygienist.

There is only one way by which people can be kept up to this system of living. They must become propagandists. The whole history of the Christian church shows that Christianity has remained a living power only among those who have become missionaries of the cause they espoused. The true Christian is a soldier. He is not content with a defensive war, either. He acts on the aggressive, and carries the war into the camp of the enemy. A Christianity which stands still, soon dies out. Of an unaggressive church we may write, Its doom is sealed. In proof of this, had we time, we could cite facts and figures from the whole history of the church. The same is true in every reform the world has seen. Those only remain true to the cause who become engaged in an earnest aggressive movement. Now I can tell you who have deserted the hygienic movement. It is those who have taken up this system of living for selfish interests. They used it as most people do drugs, to cure disease, and restore health. Or, they thought they might gain in various ways, and have more enjoyment of the world around them. Those who have remained faithful are quite another class. They have engaged in this cause as God's work. They believe it is right. They acknowledge that God asks them to make known to others the light they have themselves received, and they go forth to fight, to suffer, to triumph, to conquer.

Those who make their reform diet a mere matter of personal concern are the ones who, finding it very inconvenient to be singular and different from other people, soon go back again to gluttony and worldly excess. Those who strive to bring others to the same faith and practice with themselves, are the only ones who remain firm and steadfast. These, too, backslide, if they ever rest in the warfare they have begun.

Now we may see clearly what must be done to save our cause from defeat. We must do just what Christians do to save *their* converts. *They* organize them into churches, employ them in aggressive work, send elders to warn them, admonish, teach, guide, and instruct them. If any Christian congregations are all hygienists we need have no fear of them. Their organization will protect them. Their reform principles will become identical with, or rather incorporated into, their religion.

But most hygienists are living an isolated life, shut out from communion with those holding similar principles with themselves. If they are Christian, their very Christian brethren deride their manner of life, and class them among fanatics. This isolation will never do. We must organize. We must do what the temperance reformers did forty years ago. We must form societies, have essays, lectures, friendly talk and advice; a grand union for aggressive war. In every town where there are half a dozen hygienists, they should form a society, have regular meetings and occasional lectures. They should take papers, purchase tracts, keep books to lend, and maintain a united effort to bring others to see the great light which has already shone with so much of beauty, and hope, and promise on the path they are traveling through this world of wickedness and woe. God will take care of his people when they work for him. The harvest is ripe; let the sickle be thrust in, and the kind Father in Heaven will take care of the reapers. Deserters always come from idle soldiers. Keep the battle raging, and we need have no fear of desertion.

One more point, and then I will leave the subject for another time. We must educate our children in hygienic schools, or keep them at home and educate them ourselves. I know a town where the school board refused to allow physiology to be taught to the children. I know why; you can easily guess; but we will pass that over now. At all events, if you send your children to be educated where every possible influence is used against our system, you may be certain that, in ninety-nine cases out of a hundred, they will turn their backs on your instruction, and consider your whole system of living the greatest humbug the world has ever witnessed. We must not do it. We cannot afford to lose the children. We must send them where they will be taught, both by precept and example, the great laws of true and holy living which the Almighty Creator has indelibly written down for us in the great book of Nature for the government of mankind. How many such schools are there in this country? My friends, it will not take you long to count them. May God help us to establish more.

One word, and I am done. Education must begin when life commences; yes, with those influences which, before any form of life exists, go to make up the impressions which form the capabilities of the child, to mold and shape the natural disposition. In short, the children of hygienists should be born hygienists. Read the history of John the Baptist, and of Samuel the prophet.

HYGIENIST.

Intoxicating Liquors as Medicine.

NUMBER FOUR.

BY REV. P. R. RUSSELL.

THE temperance reformation is completely barred by the wide-spread delusion that while alcohol is a bewitching, maddening poison if taken as a *beverage*, it is nevertheless a soothing, healing balm if taken as a *medicine*. How the poor stomach and the nervous system are able to discriminate and decide whether the liquor was taken as a *dram*, or as a *nostrum*, does not appear; but it has been demonstrated thousands of times over that nature does not and will not discriminate, and the "worm of the still" will "bite like a serpent, and sting like an adder," whether it is called medicine or beverage. The effects are the same in both cases. Alcoholic medication, in all its forms, barricades the way. Just so long as trusted physicians teach and practice on the hypothesis that alcohol is a necessity, and the good people accept the doctrine, and stand ready to swallow rum, gin, brandy, whisky, wine, or ale, when they are sick, so long every man, woman, and child, will cleave to the "deadly poison" as a necessity; keep it in the family, and resort to the intoxicating cup when it is thought it may be needed. This belief will keep the rattlesnake in the family as a pet and a friend; and such reptiles, however poisonous and malignant, will be cherished and reserved for use in the "time of need." Crusaders may sing, pray, march, and entreat; Washingtonians may sign the pledge, and tell their experiences; philanthropists may mourn and sigh over the desolations of intemperance; the ministers of the gospel may "reason of righteousness, temperance and judgment to come;" and prohibitory laws may be enacted and enforced; and after all, the wheels of reformation will only, *can only*, oscillate back and forth, and make no triumphant progress; all our efforts are like that of Sisyphus in rolling his stone up the mountain side. As soon as the toiling hand is lifted, the stone goes thundering down again. People can never, *never* be saved from a depraved, clamorous appetite for the accursed thing, so long as they believe that *its use is, at times, a necessity.* This delusion keeps the cup passing around, and leads millions to a drunkard's grave. I ask attention to the direct, ruinous consequences of using alcohol as a medicine. I will name a few of the many cases which have come within my own knowledge.

No. 1 was a lady friend of mine. She was intelligent, smart, and unusually capable. She was an active member of a church of which

I was pastor. She had property. She married a gentleman in Lynn, Mass., bought the family a good house, horse and carriage, and things moved on for years very happily. The husband, a Mr. R——, was a little unwell. He applied to a doctor, and was told to take medicated brandy two or three times a day. The "serpent" was procured and brought into the house. Mr. R. began to take it. His wife concluded that if it was good for her husband, it might be good for her. She took a little, and it tasted good. She took a little more, and she was soon drunk on her bed. From that hour she plunged into the slough of drunkenness, and in spite of all efforts and entreaties she soon drank herself into *delirium tremens*, and died. Her heirs came and claimed the property, and Mr. R. lost his wife and his home in consequence of taking into that happy home one bottle of brandy.

No. 2. This case was that of an intelligent, smart, business man; the leader of one of the political parties in the city of Lynn, twenty years ago. He was a temperance man, so called, and the first mayor of the city. He was induced to believe that he needed alcoholic drinks as a medicine, and he began to sip the bewitching cup. The love of it was soon established; and when too late, the sad effects began to appear in the bloated countenance and staggering gait. He drank on increasingly till he became an infatuated, delirious tippler. When at last he was prostrated and crazed with the appalling curse and scourge, he would cry out in his frenzied agony, "Can it be possible—oh! *can it be possible that I have become a drunkard?*" Unmanageable at home, he was borne away to an insane asylum, and there died in the prime of his manhood, a miserable victim of alcoholic medication.

No. 3 was a young married man in the city of Lynn, who had once been too fond of the cup, but had been reclaimed and professedly converted among the Methodists, and was esteemed an active Christian. Ten or a dozen years ago this young man had a touch of bowel complaint. His wife said, "Husband, take a little whisky; I think it will do you good." He did so. It tasted good. It kindled to a blaze the old latent appetite, and he kept on taking a little. In the evening he sallied forth into the street, and drifted from saloon to saloon, drunk and disorderly. He was arrested by the police, and put in the lock-up, under the City Hall. In the night he set his straw bed on fire and burned up the hall and himself. That one glass of whisky, recommended by a loving wife, killed her husband and destroyed the City Hall of Lynn.

No. 4. Seven years ago there was a smart, efficient temperance lecturer, a Mr. Unice, employed by the Temperance Alliance in Mass. He was a reformed inebriate, but stood firmly for years, and did much good service for the cause, and was very popular. One evening he had a faint turn in his lecture. He was taken out to the fresh air and some simpleton administered *brandy*. It was fatal. He was well cared for by sympathizing friends, but from that moment he continued to drink, and opium and alcohol in a few months assigned him to a drunkard's grave.

No. 5. This was the case of a lady friend, a brother's wife, in Newburyport, Mass. She was in excellent general health and in middle life, and had everything in her surroundings to render life desirable and happy. Eight or ten years ago a bowel complaint was brought on by a too free use of green fruit and vegetables. A hearty breakfast of baked beans and sweet, hot brown bread on Sabbath morning aggravated the disturbance. Raw rum was taken, and alternated, during the day and evening, with strong, hot ginger tea. The result was such an inflammation of the mucous membrane of the stomach as closed up the outlet, and produced a stoppage. In spite of all that could be done, death ensued in two days.

Thousands of such cases are occurring continually, in which the poor, deluded victims of alcoholic medication are made inebriates, or are hurried into a premature grave. A fearful and appalling deceit is practiced on society in all civilized lands, in the form of quack and patent medicines. These are made up often of opium, aloes, and quinine, mixed in whisky or rum. They shatter the nerves, pick the pocket, benumb the senses, generate a depraved appetite, weaken the will-power, enslave the poor invalid, and delude him into the grave with the hope that he is getting better.

Alcoholic medicines have a surprising, almost enchanting, effect in deluding the minds of the patients. As they take the medicine, perhaps at first reluctantly, they are soon thrown into an abnormal state of body and mind. The more they take, the more they are exhilarated, bewitched, and deceived. They think they feel better exactly in the proportion that they become intoxicated. The more they are medicated, the more they love the doctor, and the more they are delighted with the enchanting catholicon. Thus they go on deceived and befooled, perhaps, till they become drunkards, or drop into their graves.

Dr. Hall says in his health journal, "Brandy kills multitudes every year who enjoyed per-

fect health before they began to use it; hence it seems fair to infer that it will kill the sick more speedily."

"Dr. Lees said that he was living near Buckingham Palace, in London, when Prince Albert was taken sick. His case was doing well for a few days, when they began to give him brandy to strengthen him to enable him to recover more rapidly; the more he was stimulated, the worse he grew, until he died. It is true that they believed that it was the best thing for him, but their thinking so did not make it so.

"Some years ago, when it was the custom to attempt curing *delirium tremens* by giving brandy, one out of every four died at Edinburgh Hospital. Since then, the professor of the medical department has treated three hundred cases of *delirium tremens* without alcohol without losing a single patient.

"Professor Gardener, of the Glasgow University, gave a hundred men thirty ounces of alcohol; seventeen died out of the hundred. Another hundred were allowed only three ounces, and eleven died out of the hundred. Of two hundred and nine cases of young persons who were not allowed either wine or whisky, not one died.

"In a teetotal hospital at Leeds, of three hundred patients who took not a drop, all recovered. Let facts decide."

Fever and Ague.—No. 1.

INTERMITTENT fever, "chills," "the shakes," "swamp fever," and "chill fever" are other common names for this disease. The most remarkable feature of the malady is its periodicity. The morbid symptoms occur in paroxysms, between which there is an intermission of the disease in which the patient often feels nearly as well as usual. When a paroxysm occurs every day at a regular hour, the disease is said to be of the *quotidian* type. When there is an intermission of forty-eight hours, the paroxysm recurring every third day, it is called *tertian*. In the *quartan* variety the paroxysm occurs upon every fourth day. In rare cases, the same patient may have two sets of paroxysms, making a double variety. In double *quotidian*, two paroxysms would occur each day. In double *tertian*, a single paroxysm occurs each day, the two sets being distinguished by recurrence of the paroxysm at the same hour on each alternate day. Cases of double and even triple *quartan* have occurred, as well as cases in which four, five, six, and even seven days intervened between the paroxysms of the disease. Prof. Watson relates a case in which a certain gentleman suffered from an ague chill regularly upon his birthday for many years, being entirely free from the disease during the intervals between his birthday anniversaries.

Symptoms. This disease is so very common in the West and South that a description is quite unnecessary for residents of those portions of the country; but it is much more seldom seen in the East, and especially in large cities. Perhaps no disease is so aggravating to the sufferer. In the large majority of cases it does not endanger life, and makes the patient just sufficiently ill to disqualify him for any useful employment, and to make him supremely miserable, though much of the time wholly free from pain. The pertinacity and stubborn regularity with which the paroxysms recur, in spite of the constant hope that each one was the last, is usually sufficient to bring the proudest spirit into a very humble condition. A more doleful picture can hardly be imagined than that of an ague patient half smothered under a huge pile of comfortables and feather beds, and surrounded with hot stones, bricks, bottles and jugs filled with hot water, and sundry other heating appliances, waiting for a "chill." He lies meditating upon his wretchedness, and furtively watching the clock as the minute hand slowly approaches the moment at which he has learned to expect his "shake" to begin. Pretty soon he yawns, not once, but repeatedly. Now his head begins to ache. He feels sick at the stomach, perhaps vomits. With these premonitions, he abandons all hope of escape and resigns himself to his fate. Many a strong man has shed tears just at this juncture, whose organs of lachrymation had not been previously so active for many years. Very soon the finger nails assume a purple hue; the hands become mottled; the lips livid; and the face pale; every now and then a chilly sensation creeps along the spine; the skin acquires the appearance of "goose flesh"; the limbs and back ache—the patient says his "bones ache"; the tongue is dry and frosted; now the teeth begin to chatter; the pulse is feeble and quick, the breathing hurried and interrupted by sighs, and the first stage of the paroxysm, the chill or *cold stage*, is well-pronounced.

The chill may continue only a few minutes, or may be prolonged to two or three hours. Sometimes it is nothing more than a sensation of coolness, or a slight shivering; in other cases, the shaking is so violent as to move the couch upon which the patient lies, and, some have declared, even to cause the windows and the stove covers to rattle. The chattering of the teeth has been so violent as to cause old teeth to loosen and fall from the mouth, and, it is said, even to break sound ones. The

surface, especially the skin of the extremities, feels cold to the touch; but the thermometer, placed in the armpit, indicates an increase in the temperature of the body.

The chattering of the teeth gradually becomes less violent; the shivering ceases; the pale cheeks are flushed; the whole surface becomes hot and dry; the headache is more severe; the thirst—sometimes considerable before—increases; the pulse is bounding; the temples throb, and now the patient is fully in the *hot stage*, which continues from three to eight hours.

The *sweating stage* succeeds the fever, and brings to the patient great relief, and often sleep. The parched skin becomes moist; the tongue becomes clean; the headache ceases, or nearly so; the pulse becomes more nearly normal. In most cases the surface is bathed with a very copious perspiration. This stage continues, on an average, three or four hours. Then the patient is commonly quite free from suffering until the regular time for the recurrence of the next paroxysm, which is but a repetition of the same. The first paroxysm is quite like the one described, only the patient will not be likely to be prepared for it as in the case supposed.

Instead of continuing to return at a regular hour, each successive paroxysm sometimes anticipates the preceding; sometimes the opposite is true; and in some cases there is no regularity whatever in the hour of recurrence. Any irregularity generally indicates that the disease is about to terminate.

Cause. The primary cause of intermittent fever is well known to be certain poisonous germs known as *malaria*, or marsh miasm, which are produced in certain well-known localities. The conditions favorable to their production seem to be a low, boggy, soil exposed to alternations of submersion and dryness. The disease is the most common in newly settled timbered districts. As a section becomes thickly populated, and as marshes and bogs disappear by drainage, fever and ague becomes less frequent, the disease sometimes disappearing altogether where it had previously been exceedingly prevalent. It is not common in large cities, but has been known to appear in the vicinity of excavations, as where water or gas mains were being laid down, large cellars dug, or in proximity to dredging operations. In the heart of New York City, numerous cases of the disease have occurred during the last few years from this cause.

Prof. Salisbury, of Cleveland, Ohio, claimed to have discovered, a few years ago, that the disease is produced by the spores of certain species of fungi which flourish in localities known to be malarious. He claimed to find these organisms in the saliva and urine of ague patients by microscopic examination. His observations have not been confirmed.

The question is often asked, Will a person have ague if he lives strictly in accordance with hygienic laws? Certainly not; but it should be observed that the most important of all the laws of hygiene is that which requires the breathing of pure air. If one is compelled to breathe malaria, he must be exposed to the liability to suffer from the result of malarial poisoning, which is the disease under consideration. No system of diet, however strict, will insure a person against ague. Careful living, in eating, drinking, frequent bathing, and attention to health in general, will undoubtedly lessen the liability to the disease, and enable the individual to rally more quickly from the effects of the poison, but it cannot do more. The same is true of all other diseases which are caused by the reception into the system of a morbific agent, as small-pox, measles, scarlet fever, and kindred diseases.

How to Determine the Temperature of a Bath without a Thermometer.

IT is often necessary to administer a bath when a thermometer cannot be obtained. In such cases it is customary to test the temperature by placing the hand in the water. This is an unreliable method, however; for the hand becomes, by usage, so obtuse to heat that water which would seem only warm to it would be painfully hot to the body of the patient. To avoid this source of error, it is only necessary to plunge the arm to the elbow into the water, by which means its real temperature will be determined. Water which causes redness of the skin is hot; when it feels simply comfortable, with no special sensation of either heat or cold, it is warm. Slightly cooler than this is tepid. When it causes the appearance of goose flesh, it may, for practical purposes, be called cool, a still lower degree being cold.

Another Method.—The method about to be described is somewhat more accurate than the preceding, and may be found convenient for facilitating the preparation of a bath of proper quantity as well as temperature, a matter which though simple enough is often quite annoying to inexperienced persons. It is a fact of common knowledge that water boils at 212° F. Boiling water, then, is always of this temperature. Well and spring water, and the water of cisterns in winter, does not vary greatly from 53°. The temperature of well and spring water changes very

slightly with the seasons. By combining in proper quantities water of these known temperatures, any required temperature may be produced. Not having seen this method suggested before, we have prepared the following table, which may perhaps be used to advantage in the absence of a thermometer; we advise all to obtain and use a thermometer, however, when it is possible to do so :—

Tem. 53°.		Tem. 212°.				
2 qts.	added to	1 qt.	equals	3 qts.	at	106°
2½ "	"	1 "	"	3½ "	"	98°
3 "	"	1 "	"	4 "	"	93°
4 "	"	1 "	"	5 "	"	85°
5 "	"	1 "	"	6 "	"	80°
6 "	"	1 "	"	7 "	"	76°
8 "	"	1 "	"	9 "	"	71°

When larger quantities are needed, it is only necessary to multiply each of the combining quantities by the same number. For instance, if a gallon and a half of water is needed for a foot-bath at 106°, pour into a pail or bath tub four quarts of fresh well water and then add two quarts of boiling water. If four gallons of water are wanted for a sitz-bath at 93° (a very common temperature), pour into the bath tub three gallons of fresh well or spring water, and add one gallon of boiling water. Thus any required quantity can be obtained at the temperatures given. The cold water should be placed in the vessel first, and there should be no delay in adding the hot water, as it would rapidly lose its heat, and thus make a larger quantity necessary. Determinate measurement is not essential. The cold and hot water may be added alternately in proper proportions, being measured by the same vessel until the requisite quantity is prepared.

"Try It."

So say the venders of the various nostrums. They have their pills or powders, and compositions of various poisons—animal, vegetable, and mineral—their tonic and strengthening bitters, the most potent ingredient of which is alcohol, for which they claim wonderful healing properties, so very important that they ought to be kept in every family, and that no household can safely do without them; and all they ask is that the diseased of every sort should give them a fair trial. "Try them," say they, "try them."

Gentlemen, I claim to be excused. God has given me a body composed of vital machinery of the most exquisite character. I am fearfully and wonderfully made. To me is committed the care of the exquisitely delicate machinery of life; and I cannot afford to tamper with this costly workmanship by blind experimentation with your various poisons. Were it a mechanical tool, a farming implement, or a labor-saving machine, that I was solicited to try, perhaps I might afford to give it a trial. But I must say to all that I cannot afford to prove the potency of your various nostrums by introducing them into this vital organism of so delicate structure and transcendent value. Such blind experiments I cannot try. I have no right thus to trifle with the life that the great Architect has given me in care. I cannot run the risk of destroying or damaging this living organism, so costly, so easily damaged, and so difficult, if not impossible, to repair. No, gentlemen; and what I say to one, I say to you all: I *must* be excused. No exceptions; I treat you all alike. R. F. COTTRELL.

House-Keepers' Lack of Knowledge.

ONE of the most prolific sources of matrimonial difficulties is the lack of knowledge on the part of wives of the duties of housekeeping. In these days there are a hundred young ladies who can drum on the piano, to one who can bake a loaf of good bread. Yet a hungry husband cares more for a good dinner than he does—so long as his appetite is unappeased—to listen to the music of the spheres. Heavy bread has made many heavy hearts, given rise to dyspepsia—horrid dyspepsia—and its herd of accompanying torments. Girls who desire that their husbands should be amiable and kind, should learn how to make light bread. When a young man is courting, he can well live at home; or, if he has to go a distance to pay his addresses, he usually obtains good meals at a hotel or eating-house; but when he is married and gets to house-keeping, his wife assumes the functions of his mother or his landlady, and it is fortunate for her if she has been educated so as to know what a good table is. Those who are dependent upon hired cooks, make a sorry show at house-keeping. The stomach performs a very important part of the economy of humanity, and wives who are forgetful of this commit a serious mistake. Even the lion may be tamed by keeping him well fed. —*Sel.*

EXCITEMENT produces rapid exhaustion and prevents ready apprehension. Ideas enter the mind in the form of slight suggestions. These a calm mind seizes upon, but an agitated mind overlooks.

KIRWAN used to say that a pious Scotchman was accustomed to pray, "O Lord, keep me right; for thou knowest if I go wrong *it is very hard to turn me.*"

LITERARY MISCELLANY.

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

WHAT MAKES A MAN?

A TRUTHFUL soul, a loving mind,
Full of affection for its kind;
A spirit firm, erect, and free,
That never basely bends a knee;
That will not bear a feather's weight
Of slavery's chains for small or great;
That truly speaks from God within;
That never makes a league with sin;
That snaps the fetters despots make,
And loves the truth for its own sake;
That worships God and him alone,
And bows no more than at his throne;
And trembles at no tyrant's nod;
A soul that fears no one but God,
And thus can smile at curse or ban—
This is the soul that makes a man.

WHAT MAKES A WOMAN?

Not courtly dress nor queenly air;
Not jeweled hand, complexion fair;
Not graceful form nor lofty tread;
Not paint, nor curls, nor splendid head,
Nor pearly teeth, nor sparkling eyes;
Not voice that nightingale outvies;
Not breath as sweet as eglantine;
Not gaudy gems, nor fabrics fine;
Not all the stores of fashion's mart,
Nor yet the blandishments of art;
Not one, nor all of these combined,
Can make one woman true, refined.
'Tis not the casket that we prize,
But that which in the casket lies!
These outward charms which please the sight
Are naught, unless the heart be right.

Centennial Exhibition Sketches.

THOUGH six weeks have elapsed since the opening day of the great show, a vast amount of work is still only in progress, and much remains to be done which should have been accomplished before the opening. On the whole, Philadelphians have been feeling rather sad during the few weeks since the opening. The whole American nation, reinforced by great multitudes from other countries, have not come rushing to the exhibition in such tumultuous throngs as the staid denizens of the Quaker City had anticipated. Hotels and lodging-houses, instead of being filled to overflowing, as anxious proprietors fondly dreamed, present "room for millions more," and it is rumored, at somewhat more reasonable prices.

The stench in the city is unabated, indeed, we should say is augmented. Every degree of increase in the daily temperature brings out new evidences of superficial and subterranean filth. Were it not for the purifying influence of the long lines of shade trees on some of the streets, together with the thriving vegetation in its magnificent parks, the inhabitants of this great dirty city, with their centennial guests, would be doomed to a visitation by some terrible epidemic of filth disease. Such a catastrophe is not impossible as it is.

Upon a cursory walk about the grounds, after entering the exhibition enclosure, the first thing that arrests the attention of a hygienist is the astonishing abundance of tobacco stands, and wine and lager beer saloons. At nearly every turn one encounters a gorgeous display of pipes of every variety, pyramids of cigars, and the filthy weed presented in every imaginable form. Here and there are beautiful groves provided with seats. At a little distance they present a very inviting appearance, and one is allured to seek a few moments' respite from continual walking and sight-seeing, and protection from the scorching beams of "Old Sol." No sooner does he gain a seat in a shady nook, remove his hat and wipe the streaming perspiration from his face, than upon a glance about he finds himself surrounded with smokers and beer guzzlers of all nationalities. On the next seat sit two portly German dames sipping a mug of "lager" between them. One takes dainty sips, the other indulges in big swilling gulps. Just in front is a male Teuton rinsing down his capacious gullet, with stock ale, two huge chunks of bread and butter with a slice of raw pork sandwiched between. At the left is a Frenchman just draining the last drops from a bottle of champagne. Hygienic eyes and nose cannot long endure such close proximity to rum and tobacco, and we hasten out of this rustic groggery only to encounter another in the next grove or convenient resting spot.

This ever-present rum is the foulest blot upon our great national fair. Why it should be allowed is a profound mystery until one learns that the commissioners sold the right of traffic in this cursed poison for an immense sum. Money was the anesthetic which put to sleep conscience, philanthropy, regard for national honor, and every other good impulse which would interdict the nefarious trade. Money overruled the petitions of hundreds of

eminent temperance workers, and now we are presented to the world as nationally sanctioning the sale and use of alcohol. Perhaps the representation is just, for any other would be an untruth. Alcohol and filthy lucre are the leaders in all the rings from the White House down to the cock-pit.

But we are digressing too far from the main subject, which for this month was to describe the contents of the Main Building. To attempt this in a brief sketch is rather presumptuous, for it would take a full week to merely see the wonderful objects displayed in this mammoth structure, which we have already described as more than a third of a mile in length, and one-fourth as broad, and covering nearly twenty-two acres. Upon passing through the great central doorway at the front entrance, one is for some time in a haze of astonishment at the gorgeous, novel, and stupendous scenes which meet his gaze. Such an extensive collection from all parts of the globe was never seen by human eyes before. More than forty different countries are here represented by the natural products of their soils, or the productions of the varied industries of their inhabitants. We can only take a hasty glance at some of the more attractive features.

The United States makes, of course, by far the largest exhibit, but we need not give in detail the various classes of products presented, for all our readers are in some degree familiar with them; but even to those the most conversant with our country's varied wealth, the extent and diversity of the display is amazing. Each State has vied with every other in illustrating its various resources and industries. Unfortunately, however, the arrangement of exhibits is so wanting in systematic arrangement that it is impossible, without great labor, to form any just estimate of the comparative merits of the several States and Territories. Wandering around in this bewildering labyrinth of wonders, one encounters on one hand a huge pyramid of iron rails, on the other a young mountain of coal made up of enormous blocks just from the mines. In a neighboring section are found great heaps of chemicals of various sorts, and hillocks of sugar-coated pills, flanked by gallons of patent medicine. Over one such exhibit is placed a revolving bronze figure of Hygeia, the goddess of health, making the most incongruous display in the whole exhibition. As though health could be obtained by patronizing pills and bitters! Better surmount such a baleful collection with the cadaverous figure of Old Time, with his sickle and hour-glass.

Glittering jewels, gorgeous fabrics, novel devices, and rare curiosities meet the visitor's eye at every glance as he traverses the long avenues. Here is a century clock. If wound up on July 4, 1876, its maker warrants it to run until July 4, 1976, without rewinding. A very modern looking mechanism it is, to-day; but what an antique affair would it be in 1976! Not one who views it now would be likely to see it then, even if the clock itself still ticked upon that second hundredth anniversary, or if the present spectators should survive the ravages of time and the epidemic horrors of "planetary pestilence" which Dr. Knapp so confidently predicts.

Attracted by a beautiful collection of towering granite monuments, we thread our way along amid the gazing multitudes, until we reach it. We can pause but a moment, to view the stately piles whose glittering surfaces reflect the admiring faces of the thousand passers-by, and, hastening on a few steps, our eyes meet, displayed in gilt letters, in a conspicuous place, the familiar words, "Health Reform." Here we find, arranged in a glass case, all the publications issued from the Office of the HEALTH REFORMER. Health books, pamphlets, tracts, almanacs, and periodicals are here displayed in a modest and unassuming manner, but in one of the most desirable locations in the building. As this is the only exhibit of the kind to be found in this great show, where tobacco, rum, patent medicines, and nearly all other health-destroying agencies are so gaudily displayed, the publishers of the HEALTH REFORMER have liberally supplied thousands of small tracts and circulars for gratuitous distribution. These are placed in small boxes arranged about the sides of the case, with the invitation, "Take one;" and we notice that a good share of the most intelligent people who pass accept the invitation and help themselves.

Two or three steps farther on we see a fine display of the productions of the oldest publishing house in America, which has been in the hands of a single family for five generations. Among other old works is the first Bible printed in America. At a short distance is an exhibition of the numerous masonic works which contain the mythology of the fraternity, and describe the ostentatious mummeries which compose the awful secrets of the society. Just opposite is a case filled with anti-masonic literature, in front of which is constantly displayed a profusion of printed leaflets which are devoted to scathing onslaughts against the institution represented on the other side. Thus do antagonistic principles jostle in this mammoth fair.

But our own country must not receive too

much attention; for, to Americans, foreign objects are commonly most interesting. Our nearest neighbor, Canada, presents nothing especially new. Mexico exhibits, among other objects, a variety of Indian manufactures, brilliant gold and silver fabrics, most curious marbles, and a cake of silver weighing more than two tons, and worth $72,000. One of the most interesting exhibits is a lot of candles manufactured from wax obtained from the seeds of a plant. Large blocks of the wax are also shown. One is reminded of the uncertain foundations of mundane things, by huge yellow masses of sulphur from the Mexican volcano, Popocatapetl.

Jamaica sends a collection of tropical products, among which are bread fruit and plantain meal.

Brazil makes a fine exhibit of her productions and manufactures. Among the latter is a variety of jewelry made of beetles and various other bugs.

The Argentine Republic makes quite an extensive exhibit of salt, soap, and patent medicines—for the ubiquitous quack seeks victims at the remotest bounds of civilization. Indian fabrics and hunting implements, bows and arrows, lassos, etc., make up quite a considerable part of the exhibit. Among the curious things are rope and gloves made of bristles, and boots of lizard skin.

Great Britain makes a large display, but it is not very different from that made by the United States; though if we had space sufficient, we could mention numerous objects of interest.

The exhibits in the French section comprise a great collection of novelties, ingenious but useless mechanisms, calculating machines, artificial flowers, toys, etc.

Sweden sends numerous specimens of her superior iron, and groups of lifelike plaster figures. Italy makes a great display of sulphur, and mineral water. The Bey of Tunis sends a collection of odd national costumes. From Egypt come petrified wood, fabrics made from the rushes of the Nile, and numerous evidences that this long-benighted country is making efforts to regain the culture and enlightenment which it possessed when all other nations sent their philosophers to sit at the feet of her sages, and glean wisdom in her groves of learning. Bricks from Lower Egypt recall the hard usage which captive Israel suffered in those ancient times. Quaint costumes and rude musical instruments from Soudan are conspicuous features of the exhibit.

From the other extremity of the continent of Africa, Cape Colony and Orange Free State, are shown diamonds, rough and cut, South African woods, ivory, native ornaments, dress, and implements. The witch doctor's costume and the Kaffer doctor's materia medica, which are exhibited, are doubtless of equal efficacy in curing the sable natives of those southern wilds. A bushman's ax is among the novelties.

China and Japan have prepared very extensive exhibits, which are fitted up in their own peculiar style. Old porcelain, bronzes, lacquer ware, carving, paintings, fans, and national costumes constitute the bulk of the two exhibits. The odd names attached to the various articles, Tack Loong, Hu Kwang-Lung, and Sung Sing Kung, are not the least curious things to be seen. A polite young native in his national dress, with his shaven pate and braided pig-tail, gives visitors to the Japanese department all desired information.

Australia presents models of bush huts, photographs of aborigines, with some of their rude implements, and kangaroo leather. New Zealand sends skeletons of that wonderful bird—supposed to be extinct until recently—the moa. Hawaii contributes corals, shells, curiosities, and lava from the crater of Kilauea, the largest active volcano in the world.

Having walked and gazed until nearly exhausted, we turn our steps toward the nearest point of egress. Suddenly we find ourselves in the borders of a small crowd, the different individuals of which are peering with open eyes and mouth at some central object. Learning that the center of interest is a boy, we wedge ourself in a little way to catch a glimpse of the little fellow. There he sits on a bench, a bouncing lad of fourteen; weight, 450 pounds; a great, sweltering mass of blubber, so thick and wide that the carriage entrance was the only place at which he could get into the grounds. It is not pleasant to think of what a mass of debris and disease is stored up in this unrivaled specimen of obesity. But we hasten on, and leave for another month this great epitome of a century's growth, though having scarcely glanced at its almost innumerable objects of interest.

Epidemic Delusion.

IGNORANCE, and that want of self-control that very commonly accompanies it, predisposes very greatly indeed to the violent excitement of the feelings, and to the possession of the mind by ideas which we regard as essentially absurd; and under these states of infatuation, and the tendency of these fallacious notions to predominate over the intellect, the strangest hallucinations occur, both in

individuals and communities. Observation teaches us that these conditions tend to produce insanity, unless checked and resisted by the victim.

We learn from history that in every age great masses of the people have, under the excitement of some strong passion or impulse, been seized by these dominant ideas and led to perform most foolish actions; and it is of these epidemic delusions I have now to speak.

The word *epidemic*, from two Greek words meaning *among the people*, simply means *universally spread*. I believe that I can best introduce the subject to you by showing that in certain diseased conditions of the body the nervous system is very strangely acted upon by what we call imitation. We have an example of this in *hysterics*, to which young women are especially subject, but which affects the male sex also. One reason why young women are particularly liable to it is that in the female the nervous system is easily disturbed, while the male, having the stronger will, is more influenced by the intellect. These hysteric fits generally result from something that strongly affects the feelings.

It often happens that a case of this sort presents itself in a school, nunnery, factory, or other place where many young women are associated; one being seized by a fit, others will go off in a fit of a very similar kind. In a factory in Lancashire, England, a good many years ago, a young girl who had a special antipathy to mice was suddenly thrown into a convulsive fit by a companion putting a mouse down inside her dress. Some of the other girls who were near soon passed off into a similar fit, and the notion soon obtained that the cause emanated from a bale of cotton near by. The result was that scores of young women were attacked, day after day, with these violent fits. The medical man who was called in saw at once what the state of things was, and brought a remedy, very appropriate under the circumstances, in the shape of an electrical machine. He gave them some good violent shocks, which could do them no harm, assuring them that it would cure them. And it did cure them. There was not another attack afterwards.

There was a ward in a hospital at Bristol, where it was customary to send young servant girls that they might be separated from a lower class of women who were also brought to the hospital, as they were mostly respectable, well-conducted girls. The result was that if one went into hysterics, the rest did likewise, and it became necessary to threaten them with a severe infliction, such as a shower-bath. In this case, the cure was effected by a stronger emotion, which called the will into action and overcame the tendency of the mind to imitation. In these cases there must have been some unhealthy condition of the nervous system to favor the exciting cause, which, being beyond the control of the will, brought out such very unpleasant results.

There are many other examples of this in history. For instance, it is not at all uncommon in nunneries, that some particular odd propensity has developed itself. In one nunnery abroad, many years ago, one of the youngest nuns began to mew like a cat, and all the others, after a time, did the same. In another, one began to bite, and the others were all affected with the propensity to bite. In one of these instances the mania spread like wild fire through Germany, extending from one nunnery to another; and they were obliged to resort to some such severe measures as I have mentioned, to drive it out. It was set down, in some instances, to demoniacal possession; but the devil was very easily exorcised by a pretty strong threat on the part of the medical man.

The celebrated physician Boerhaave was called into an orphan asylum in Holland, to check a case of the kind, which he did effectually by threatening that the next girl who fell into one of these fits should be burned on the arm by a red-hot iron. A clergyman in Scotland, being disturbed by certain of his congregation giving way to the delusion, told his congregation that it could not be endured, and that the next person who yielded to it should be taken out and ducked in a pond near by. There was no necessity to put his threat into execution. In each of the cases all that was necessary was to call forth that power of self-control which had been previously abandoned by inducing some stronger motive.

Thus far this tendency has only been shown to produce convulsions of the body; but it is also manifested in what may be called convulsive actions of the mind. In the middle of the thirteenth century whole communities gave themselves up to self-mortification by whipping themselves, thinking thereby to please God. These Flagellants went about in bands with banners, and even music, carrying scourges; and at a given signal every one would strip off his or her upper garment, and proceed to flog themselves very severely indeed, or to flog the others.

About a century later, in the time of the "black death," in Europe, which is said to have carried off one-fourth of the population, this mania broke out afresh. One of the worst features of that terrible affliction was the suspension of all natural feelings which it seemed to induce. The people deserted

their sick and dying relatives to join these bands of Flagellants for the purpose of saving their own souls, and expiating, as they said, the great sins which had brought down this terrible affliction.

The "Dancing Mania," or St. Vitus's dance, is another way in which this condition was manifested. This differed from the modern St. Vitus's dance, or chorea, in that it took possession of whole communities. People would allow themselves to be controlled by the idea that they "must dance," and would dance for twenty-four or thirty-six hours, until they dropped down exhausted, and some of them dead.

These are only a few of the many manifestations resulting from allowing the mind to run rampant with the body, unchecked by the governing influence of the will.—*Condensed from Popular Science Monthly.*

The Chinese and Death.

THE Chinese are almost indifferent to the phenomenon of dissolution, and frequently compass their own end when life becomes wearisome. A wife sometimes elects to follow her husband on the starlight road of death; and parents will destroy their offspring in times of famine and great distress, rather than allow them to suffer. Still more remarkable is the custom of selling the lives in order that they may purchase the superior advantages of obsequies, which are considered to insure the body in safety for future resurrection.

A wealthy man condemned to death will arrange with his jailer to buy him a substitute for a certain sum of money to be spent upon the poor wretch's interment and the preservation of his body. Should he have parents, so much is usually paid to them in compensation for their son's life. Chinamen invariably help to support their parents. Filial respect and devotion is the great Chinese virtue and religious precept, in which they rarely fail.

Regarding death as inevitable, he makes the best of a bad bargain, and cunningly and comically gets paid for dying. The wholesale destruction of life in that country is greatly the result of indifference. Hence the massacre of Europeans, so terrible to us, seems to them a matter of little moment, and they cannot comprehend why we should make a fuss about it. They regard our indignant protestation very much as we regard our irate neighbor whose dog we have shot.

"Well, well; be pacified; if it was such a favorite, I am sorry; but it is only a dog, and there are plenty more of them. How much do you want to be paid for it?"

"You English think so much of life," argues the Chinese; "have you not plenty of people at home?"

Death in China is awarded as the punishment of the most trivial offenses, and frequently for none at all, being in somebody's way.

A story was told the writer as a fact, that, during the visit of one of the royal princes, a theft was committed of a chain or watch, belonging to the royal guest. The unfortunate attendant was caught with the property upon him, and without further ceremony his head was chopped off. The mandarin in attendance immediately announced the tidings to the prince as a delicate attention, showing how devoted he was in his service. To his astonishment, the prince expressed great regret that the man's head had been taken off.

"Your highness," cried the obsequious mandarin, bowing to the ground, "it shall immediately be put on again!" so little he understood that the regret was for the life taken, and not the severed head.

The Moon.

THE moon was perhaps the first of the heavenly bodies that was regularly observed. The ancient observations of eclipses form the basis of many determinations in the chronology of the earth's history. To the mariner at sea, its regular passage across the heavens has always been a means of knowing the time. The modern astronomer is able, without leaving the observatory, to determine the earth's size more accurately by studying the moon than he could by traveling all over the surface. Even the density of the earth could be determined by a careful observation of the moon's influence upon the tides.

The most convenient way of determining the distance of the moon from the earth is from two distant stations whose positions on the earth's surface have been accurately ascertained. One of these stations is usually at the Cape of Good Hope, and the other either at Greenwich, Paris, or Berlin, etc. The distance between the two stations, measured on the same meridian, forms the base line, and the observed direction of the moon, when it crosses the meridian, will give us the angles at the base, from which the distance can be calculated. This distance is, in round numbers, 238,000 miles, or about ten times the circumference of the earth. A good pedestrian could travel that distance in 23 or 24 years. The determinations of the moon's distance are so accurate that the probable

error does not exceed 15 or 20 miles. This distance is not, however, constant, because the moon's path is not a circle but an oval, the eccentricity of which amounts to about $\frac{1}{18}$.

The size of the moon's diameter is determined by measuring its apparent diameter in the telescope, the difficulty of the operation consisting in the fact that the brightness of the disk causes it to present a circumference which is not defined with perfect sharpness. Having measured the apparent diameter of the moon, and knowing the value of the earth's diameter, as seen from the moon, a simple proportion will give us the moon's real diameter, 2159.6 miles, or about the $\frac{1}{120}$ part of the distance between the earth and the moon; that is to say, 120 moons placed in a line would fill up the distance. The determinations of the value of the moon's diameter are correct to within two or three miles.

The force of gravity on the moon is only $\frac{1}{6}$ of that on the earth; that is, a man able to jump up three feet on the earth would be able to jump up eighteen feet on the moon's surface.

Up to about 1870, the calculated position of the moon was only about two miles out of the way; but since that time, some error has crept into the nautical almanac, and the difference is now five to seven miles. Prof. Airy thinks some perturbation must have been overlooked. If a mariner had a watch that kept perfectly Greenwich time, he could always ascertain his position by consulting the nautical almanac. The moon is indeed a perfect time-keeper in its passage across the heavens; but its motion is so slow that it would take very accurate observations to obtain the time from its position.

According to Zöllner, the light of the moon is only $\frac{1}{618,000}$ of that of the sun. If the sky were packed full of moons, it would not give us quite as much light as the sun. It has been found that, when the moon is half full, it does not give half as much light as when it is full, because the mountains then cast shadows, while there are no shadows at all on the full moon.

Until quite recently, it was supposed that no heat could be detected in the rays of the moon. They were collected in the focus of a large mirror, and directed upon a very delicate thermopile connected with a galvanometer. The lecturer had this apparatus upon the table, and showed the effect of the heat of a candle placed at a distance. It was discovered by Melloni that the feeble heat coming from the moon was rendered insensible by the earth's atmosphere, and Professor Smyth, on repeating the experiment on the summit of Teneriffe, about 10,000 feet above the level of the sea, discovered that the heat of the full moon was equal to $\frac{1}{9}$ that of a candle placed at a distance of 15 feet from the apparatus. The moon is hottest between the last quarter and the new moon, because it has then been exposed continually to the sun for fourteen days. Its temperature must then be from 400° to 500°; again, during the long night, fourteen days long, it must cool down to something like 100° to 200° below zero.

It has been stated that the powerful telescopes of modern times bring the moon down to within 40 miles of us; but that is not sufficient for distinguishing any of the works of the inhabitants, if there be any. A city would appear as a mere dot.—*Prof. C. A. Young.*

Hating One Another.—Two Scotchmen occupied the same cottage, each being bound to keep his own side of the house well thatched. They were sadly divided religiously, one being a Burgher and the other an anti-Burgher. After repeated battles of words they were not on speaking terms. One day these men were at work on the roof, each thatching his own side, and they met at the top and were forced to look in each other's faces. One of the men took off his cap, and, scratching his head, said to the other: "Johnnie, you and me, I think, hae been very foolish to dispute as we hae done concerning Christ's will aboot our kirks, until we hae clean forgot His will aboot oursels; and so we hae fought so bitterly for what we ca' the truth, that it has ended in spite. Whaever is wrong, it's perfectly certain that it never can be richt to be uncivil, unneehborly, unkind,—in fac, tae hate one anither. Na, na, that's the deevil's work, and no God's! Noo, it strikes me that maybe it's wi' the kirk as wi' this house; ye're working on ae side, and me on the t'ither, but if we only do aur work weel, we will meet at the top at last. Gie'n your han' auld neehbor!" So they shook hands, and were the best of friends ever after.—*Dr. F. S. Clark.*

Labor.—All labors that are normal, and that are carried on with moderation and within proper limits, carry with them their own rewards. Every man who follows a useful occupation, and is not driven by stress of circumstances to untimely fatigue, ought to enjoy his work as he goes along. Every man in business ought to enjoy the business itself. This is the normal method of developing the whole man.

DIETETICS.

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

Trichinatous Pork.—In spite of the constant developments relating to the pork parasite, trichinæ, people continue to use the beast for food, and so cases of death are constantly occurring in consequence. The *Steuben Farmer's Advocate*, New York, gives an account of the deaths of three ladies from this cause. A hundred persons are known to have eaten of the infested hog, and many more deaths may yet occur. But the actual deaths which immediately result from the use of pork containing trichinæ are but a very small part of the real evil that is wrought. Not more than one-third of the cases of trichinosis are fatal. The surviving two-thirds linger on for years, miserable invalids, always subject to neuralgia, muscular rheumatism, and wandering pains, for which they can discover no cause. In the great majority of cases, the victim is ignorant of the fact that his muscles are a living mass of loathsome worms; yet the same may be true, nevertheless; and this fact explains the cause of his mysterious ailments, loss of muscular strength, and premature decline.

When pursuing the study of practical anatomy in the laboratory of Bellvue Hospital College, New York, we found numerous cases in which the whole body was filled with these loathsome parasites in a condition which indicated that they had existed in the tissues for many years. The professor in charge of the room stated that he had found by careful observation that one in twenty of all the cases brought into the rooms were thus affected.

It is important to keep in mind the fact that the larger share of cases of disease and death caused by this worm are never discovered. Many epidemics of the disease have occurred in which whole neighborhoods have been simultaneously stricken with it. In 1849 such an epidemic occurred in Germany. It was then known as "English Sweat," or "Black Death;" but its real character was subsequently determined. In the German city, Elbing, microscopical examination showed that one in every twenty of American hams were infected. Three years ago, forty cases of the disease occurred in Bremen from the eating of an American ham.

In Germany the disease has become so alarmingly prevalent that the microscopical examination of every hog is required by law under the penalty of a heavy fine.

How much better it would be to let the filthy beast alone. At his best, when free from trichinæ, he is a mass of grossness and disease, and no more fit for human food now than when forbidden to the Jews by Jehovah, through Moses. It is undoubtedly owing, in part, at least, to their abstinence from the use of this scavenger beast that the Jewish people are everywhere known as possessing better health and greater longevity than any other nation.

It is only encouraging a reckless exposure of life and health by the unthinking masses to suggest that thorough cooking will kill the parasite. They may escape after the most careful and prolonged cooking to which pork is ever subjected; and then their work of mischief cannot be estimated. If people will persist in eating port, their only security from the possibility of fatal poisoning will be in each becoming an expert microscopist and examining with careful scrutiny every morsel of pork before it is placed in the mouth.

Morbid Appetites.—If there were any logical force in the argument urged in favor of salt as an article of diet, that it is craved by a few animals, and certain races of men, the observations quoted below would establish the dietetic value of clay on the same grounds. What an admirable appetizer clay would make! It could easily be proven to be a "powerful antiseptic." Its well known absorbent qualities would doubtless be serviceable in absorbing the crudities of a dyspeptic stomach—"bile," mucus, acids, etc. How necessary for the teeth and bones is the silica which it contains! What lover of salt is ready to try the experiment? He can take his choice of blue clay, red clay, or fine pipe-clay. Possibly he would find it a good antidote to neutralize the effects of salt. We fear, however, it would "lay heavy" on his stomach.

Leusinger, in his "Travels on the Amazon and Maderia," speaks of the appetite for clay shown by the inhabitants of the virgin forests traversed by these rivers. This propensity is common to all ages, from childhood to old age, and is so strong that the prospect of a miserable and dreadful death cannot withhold them from satisfying this morbid taste. It is

not uncommon to see among the negroes employed on the coffee and sugar plantations an unfortunate being working in the heat of the day with an iron mask over his face; this is a clay-eater, whom it is sought to save from his deplorable propensity by this means, and who is never allowed to take off his mask except under proper superintendence. This taste, however, is not peculiar to man in these regions. Many animals, and even birds, also show it, of which advantage is taken for hunting purposes. The hunter has only to place himself in ambuscade near a clay-pit on a moonlight night, and he will soon have plenty of sport among the wild boars and roe-deer, as well as the jaguars, which are attracted, not by the clay, but by the desire for a living prey.

Saleratus.—An exchange makes the following very suggestive remarks about saleratus:—

"Wood is burnt to ashes, ashes are lixiviated; lye is the result. Lye is evaporated by boiling, black salts is the residuum. The salt undergoes purification by fire, and the potash of commerce is obtained. By another process we change potash into pearlash. Now put these in sacks and place them over a distillery mash-tub, where the fermentation evolves carbonic acid gas, and the pearlash absorbs it and is rendered solid, the product being heavier, whiter, and drier than the pearlash. It is now saleratus. How much salts of lye and carbonic acid gas a human stomach can bear and remain healthy is a question for a saleratus eater. Some people say saleratus will not harm the stomach. It is a lye.

To Test Drinking Water.—Nothing is more important, after securing pure air to breathe, than to obtain pure water. Hard water is the cause of many serious and fatal maladies. Water containing organic impurities, as sewage, drainings from cess-pools, barn-yards, or cemeteries, is a fruitful source of disease.

The degree of hardness of water, which generally indicates the amount of mineral impurities, is readily tested by determining whether it readily forms a good lather with soap. The lather should be compared with that made from the same soap with rain water.

The organic impurities are the most to be dreaded. They may be detected in either of the following ways; it is well to try both:—

To a small bottle full of the suspected water, add a pinch of sugar. Cork tightly, and set in a warm place. If the least turbidity appears after standing ten days or two weeks, the water is unfit for use.

To a small quantity of the water in a small bottle, add two or three drops of a solution of permanganate of potash, just sufficient to impart a slight tinge. If the color of the solution has diminished after standing a week, the water is foul.

Both of these tests are so easy that any one can try them; and no one should rest contented without assuring himself that the water he drinks is pure.

Onions as Food.—A subscriber asks, "What do you think of onions as food? How are they best prepared for use?"

Onions are certainly food, and some authors claim that their nutritious properties are very considerable. The only objection to them is their strong odor and flavor, which are due to an acrid volatile oil which they contain, and which possesses powerful exciting and irritating qualities. The onion belongs to the same class of plants with the garlic and leek. Those varieties grown in cool climates are so strong as to be scarcely fit for food. In Spain, and other warm countries, milder varieties are produced which are very wholesome food. Perhaps about the only advisable use of onions grown in this country is as a flavoring for other food, when considered desirable.

Only those with healthy stomachs should attempt to eat onions in any form. They are quite too acrid for dyspeptics.

The acridity may be somewhat lessened by soaking the bulbs in salt water for twelve hours, after they have been peeled and quartered. After soaking in salt water, they should be well washed in fresh water to remove the salt. Peeling under water prevents smarting of the eyes.

Mormon Settlers.—Adjutant-General Tucker, of New Mexico, with a body of armed men, recently visited the Mormon colony which is being formed in that State. It is reported that they found between two and three thousand young men who used neither tea, coffee, spirits, nor tobacco, and were, in consequence, remarkably healthy in spite of their relation to that degenerative institution, polygamy. We are willing to give even the Mormons credit for a few good things. It is indeed surprising what strange mixtures of truth and error we sometimes find.

A THRIFTY table is a thriving table. A frugal table is a fruitful table.

THE

HEALTH REFORMER

BATTLE CREEK, MICH., JULY, 1876.

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

Nature's Disinfectants.

THE chemist and the sanitarian have discovered and devised numerous methods for destroying or neutralizing the thousand products of disease and decay which menace the lives of all dwellers within the precincts of civilization. Copperas, permanganate of potash, chlorine, and especially dry earth, are most efficient and necessary agents for destroying the germs of disease and death which will accumulate, in spite of the most scrupulous care, to a slight extent. But far more important and serviceable than any of these are the disinfectants which nature furnishes. Artificial agents of this kind, though measurably effective when employed, may be neglected through ignorance, or shiftless neglect, or heedless disregard of the admonitions of sanitarians. Natural agents are always active, not always with the same degree of efficiency, but with unremitting persistency destroying the noxious germs, and gases, and miasms which threaten human life in the most salubrious localities, and make a residence in certain quarters absolutely hazardous.

Nature's great disinfectant, deodorizer, and purifier, is *ozone*. Oxygen is the element which supports combustion in the myriad forms presented to the eye in nature; the rusting metal, the fading flower, the decaying fruit, the slow crumbling of the prostrate oak, and the rapid burning of the fagot in the flame, are all examples of this process of destruction. Ordinary oxygen is very slow to act. It often requires unusual conditions to enable it to manifest its wonderful destroying properties. But oxygen also exists in a peculiar form in which it is exceedingly active, seizing with avidity upon every decomposing substance, noxious gas, or putrefactive product with which it comes in contact. This form of oxygen is called *ozone*. Of all disinfectants, this is most important. But it exists in only small quantity in the air, and the supply must be constantly replenished. How is this effected? All experimenters with frictional electric machines have noticed the peculiar odor, somewhat resembling that of chlorine, which always accompanies the discharges. This is evidence that electric discharges produce ozone. In a thunder storm, we have the same process on a more extensive scale. The grand electric discharges, lightning flashes, produce great quantities of ozone, which burns up the foul accumulations in the atmosphere. This is the reason why the air is so pure and invigorating immediately after a thunder shower. It is a very wise arrangement of nature which gives us lightning at the very season of the year when ozone is most required as a disinfectant.

Ozone is produced in other ways, as well as by electricity. The vapors of the volatile oils have the property of converting oxygen into ozone. Turpentine, camphor, peppermint, and other volatile oils and gums, the aromas of flowers, shrubs, and trees, possess this property. This is the reason why house plants are heathful. The peculiar emanations of pine forests produce great quantities of this useful agent.

One of the most remarkable trees possessing this property is an Australian evergreen called the *blue gum*. Its technical name is *Eucalyptus globulus*. This is a peculiar tree. It grows very rapidly, chiefly in wet places. One of its remarkable qualities is the rapidity with which it abstracts water from the soil. It is claimed that a single tree will drink up and evaporate, in one day, ten times its weight of water. This property may be in part due to the peculiar arrangement of its leaves, which are placed vertically, one edge being directed toward the sky and the

other toward the earth. It has been found that a grove of these trees planted in a marsh will completely dry it up in a few years. The Eucalyptus has been transplanted, for this purpose, to many low and worthless places, which it has converted into valuable land.

A grove of blue gum trees purfumes the air for miles about. The amount of ozone which the trees produce is so great that the miasmatic emanations of the surrounding country are consumed as rapidly as formed. It is said that one might dwell in safety under the shade of a blue gum tree in the heart of the most pestilential swamp. Even in districts naturally the most malarious, the natives of Australia live without the slightest dread of intermittent fever, relying for protection on the Eucalyptus, which from its value in this respect has won the title of *fever tree.*

Since the value of this remarkable tree became known, it has been taken to different localities long notorious as breeding places for malaria, and with the result of speedily drying up pestiferous marshes, and rendering healthful districts which were previously uninhabitable by man and avoided by beasts.

The Eucalyptus will not flourish in cold climates; but there are other plants which are of value as protectives from malaria in the same way. The oleander is one of these. All trees of the laurel species are of equal value. We must not omit to mention the sunflower, which is very useful if largely employed. It is claimed that a good-sized patch of sunflowers placed between a dwelling and a neighboring source of malaria will effectually protect the inmates from malarial poisoning. It would be an inexpensive experiment, at least, and the seeds would be worth the trouble of raising.

Has Man Degenerated?

A CORRESPONDENT sends us an article from the *London Spectator*, the chief portion of which we quote below, saying, "I have for some years been a reader of the REFORMER, and have read it with much interest until it has made me a believer of what it advocates. But now, am I deceived? Who has the truth; the REFORMER, or the *London Spectator?*"

"There never was a delusion with less evidence to support it, except a permanent impression among mankind, which is often the result, not of accumulated experience, but of an ever-renewing discontent with the actual state of things. There is not the slightest evidence anywhere that man was ever bigger, stronger, swifter, or more enduring, under the same conditions of food and climate, than he is now. As to bigness, the evidence is positive. Modern Egyptians are as big as the mummies, who were conquerors in their day, and modern Englishmen are bigger. There are not a thousand coats of armor in existence which an English regiment could put on. Very few moderns can use ancient swords, because the hilts are too small for their hands. Endless wealth and skill were expended in picking gladiators, and there is no evidence that a man among them was as big or as strong as Shaw.

"No skeleton, no statue, no picture, indicates that men in general were ever bigger. The Jews of to-day are as large as they were in Egypt, or larger."

The writer, of the *London Spectator*, seems to be very gifted in the art of making dogmatic assertions without adducing the shadow of a fact in support of the same. If we were to accept his dictum without question or examination, we should doubtless be obliged to accede to his conclusions. Fortunately, we have the opportunity of forming our opinions from the *facts*, regardless of the unsupported assumptions of a penny-a-liner.

But let us notice some of these astounding assertions. "There is not the slightest evidence anywhere that man was ever bigger, stronger, swifter," etc. In support of this statement he says, "Modern Egyptians are as big as the mummies." The last statement is undoubtedly true, but what sort of a comparison is this? A live man and his desiccated body are two very different objects. Suppose the writer, of the *Spectator*, should be saturated with carbolic acid, and then laid away to dry for three or four thousand years until his weight had become reduced from one hundred and fifty pounds, perhaps, to fifteen or twenty, all his members shrunken, shriveled, and shortened. Suppose, further, that in the year 6000 A. D., some surviving Anglo-Saxon —if the race had not become extinct two or three thousand years previous—should com-

pare himself with that attenuated relic, and proudly boast of being *as large as a mummy!* and reason thence that the race was as large as the noble Britons who dined on plum-pudding and roast beef in the days when the noble Prince of Wales attended elephant fights in India. We have not the slightest doubt that against such evident unfairness the miniature representative of the *Spectator's* contributor would, if possible, enter an indignant protest. "Positive" "evidence," indeed!

Again, "There are not a thousand coats of armor in existence which an English regiment could put on." We are ready to offset this statement with another, that there is not an ordinary ancient coat of armor in existence which will not admit the writer of the preceding sentence with plenty of room to spare. And we will supplement this by another, that there is not an English regiment in existence that could carry on their backs the prodigious equipments of a thousand Roman soldiers of the time of Tiberius Cæsar. Ancient swords which we have seen had hilts which the broad hand of a Dutchman would not fill.

If the *Spectator* means to compare Shaw or any other modern with ancient prodigies of size and strength, he should not overlook such notable personages as Milo, the Greek Samson, Gabbaras, the Arabian giant, the Roman Emperor Maximus, Eleazar, the Jew, and others we might mention, compared with whom our modern giants are puny dwarfs.

"No skeleton, no statue, no picture, indicates that men in general were ever bigger." Few very ancient skeletons are found. Some that are found are of immense size, some nine feet, others more than ten feet, and one seventeen feet long. Of course, it is not possible to say that these represent the average. We have not sufficient data of this kind to decide positively either way, but we have plenty of history, if not of bones, to show that the human race was once much larger than now, when the average hight is only an inch or two more than five feet. If it could be proven that the Jews, while making brick without straw under their hard task-masters in Egypt, degenerated so much in stature that they have managed to hold their own since, or if it should be claimed that the admirable sanitary and hygienic laws of Moses had preserved them from degeneration, we will willingly grant either position, for neither has anything to do with this question.

But the *Spectator* says further:—

"Physical condition depends upon physical conditions; and why should a race better fed, better clothed, and better housed than it ever was before, degenerate? Because it eats corn instead of berries? Compare the Californian and the Digger Indian. Because it wears clothes? The wearing of clothes, if burdensome—which the experience of army doctors in India as to the best costume for marching makes excessively doubtful, they declaring unanimously that breechless men suffer from varicose veins as men wearing trousers do not—must operate as a permanent physical training. You carry weight habitually. Because they keep in-doors? Compare English professionals with Tasmanian savages, living in identically the same climate, but living out-of-doors."

Truth and common sense, every word; we heartily agree with the sentiments. Man has not degenerated because he has exchanged berries, acorns, and ground-nuts for wheat, corn, and potatoes; not because he clothes his body with garments adapted to different seasons and climates; not because he shelters himself from the inclemencies of the weather. These are not the "physical conditions" which have caused the retrograde; but here are some of the causes:—

The exchange of simple, wholesome, vegetable food for flesh, fine flour, spices and condiments, tea, coffee, tobacco, opium, and rum. The exchange—on the part of the female portion of the race—of simple, healthful, graceful garments, which allowed of unrestricted movement of every limb, for heavy, trailing skirts, corsets, tight shoes, illy-clad limbs, pull-backs, chignons, etc. The exchange of the pure air of the small hamlet, and the free natural ventilation of tents and rude huts, for the poisonous exhalations from surface gutters and subterranean sewers, and the stagnant, poison-laden atmosphere of air-tight bedrooms, musty parlors, crowded churches and lecture halls, and mammoth factories. The exchange of ancient sobriety and simplic-

ity of life for the crazy race for riches or fame, the fashionable follies, and the blighting vices of modern civilization.

The effects of these influences can be well studied in the inhabitants of the Sandwich Islands. Less than a century ago they were in their primitive condition. The *taro* and the *ti*, succulent roots, formed their simple diet. Their other habits of life were equally simple. Travelers found them hardy, symmetrical, and long-lived. By the introduction of the unwholesome refinements of civilization, and its vices, their numbers are being decimated so rapidly that grave fears have been expressed lest the race shall suffer speedy extermination.

We do not argue against civilization. Barbarism is not a healthful state. What we want is a civilization free from the evils and vices of this modern type, which breeds disease, degeneracy, and death.

A Harmless Substitute.— Numerous substitutes have been recommended for use by those desirous of overcoming the appetite for liquor. "Bitters" have been the usual resort of those who have sought relief in this way. The identity of bitters and whisky we have often pointed out as a fact familiar to every toper, especially female and temperance tipplers, who attempt to hide their indulgence behind a name, or beneath the thin guise of "medicine." We have opposed substitutes on the general principle that they are ordinarily as bad as, or worse than, the real thing itself; but if the paragraph quoted below is reliable, a harmless substitute has been found. We confess a lack of faith in it, however, unless backed by a sturdy resolution to reform; and with that to aid him, a man has no need of substitutes. Still, the remedy is harmless, and may be tried, perhaps successfully, if the patient has faith in it. We notice that the writer claims that it will also obviate a want for medicine. If reliable, its value in this direction would certainly be inestimable; for the habit of medicine-taking has become with thousands of persons as inveterate as that of liquor-drinking with thousands of others, and the effects are ultimately as deadly as those of the latter habit. As a substitute for medicine, we have a good degree of confidence in the remedy, and we would recommend every patron of physic to "try it." "It will do no harm, if it does no good."

"At a festival at a reformatory institution, recently, a gentleman said, of the cure of the use of intoxicating drinks: 'I overcame the appetite by a recipe given to me by old Dr. Hartfield, one of those good old physicians who does not have a percentage from a neighboring druggist. The prescription is simply an orange every morning a half hour before breakfast. "Take that," said the doctor, "and you will never want liquor nor medicine." I have done so regularly, and find that liquor has become repulsive.'"

A Wholesome Law.—The papers state that a city ordinance of San Francisco forbids the use of a sleeping room, as such, which contains less than five hundred cubic feet of air for each occupant, for violating which twelve Chinamen were some time since arrested.

Such a law is certainly an evidence of good sense in the law-makers. The minimum amount of space allowed, however, is only one-half that which sanitarians say is absolutely required for the maintenance of healthful purity; and even when one thousand feet are provided for each occupant of a room, it is essential that the whole air of the room should be changed several times an hour, to maintain its purity. The most efficient means of ventilation are required to effect this; hence, ventilation is as necessary a measure as the provision of proper air space. A capacious room without ventilation would be less healthful than a dry-goods box with a constant current of pure air through it.

Notwithstanding its inadequateness, we are very sure that if the San Francisco ordinance were applied to the country at large, thousands of more cultivated people than Chinamen would be convicted of its violation; and some of the grossest offenders would be found among the managers of boarding-schools, hotels, and orphans' homes. Every city ought to have such a law, amended by several important additions. There is also a crying need for a law limiting the number of school children which shall be crowded into a given space. We are acquainted with one very elegant and useful educational institution in which the students are confined for six hours

daily, with only about one hundred and fifty cubic feet of air for each. In some other schools, less than one hundred feet is allowed to each. The architects of such buildings evidently forgot that students, as well as other members of the human species, must breathe eighteen times a minute, and that pure air is as necessary an accessory to the acquirement of an education as good blackboards, comfortable seats, suitable apparatus, and competent teachers. Every architect ought either to be a physiologist himself, or to employ an intelligent physician to revise his plans.

Electro-Magnetic Chain Belts.—Several correspondents have requested a statement of the merits of these much-advertised contrivances. In answer we will say that an examination of the appliances and of the claims of the manufacturers has convinced us that the qualities of these articles are chiefly negative. The best recommendation we can give them is that they are not likely to do any direct injury to the patient; but they may work, indirectly, a great amount of mischief by deceiving the wearer and preventing him from employing the requisite efficient agents required in his case.

The claims and assumptions of the manufacturers are laughably absurd. They present the long-exploded notion that electricity is life as the basis of their claims, asserting that disease is want of electricity, and that a renewal of the supply by means of their "belt" is the proper method of cure. They enumerate the well-known properties of electricity as a therapeutic agent, and then arrogate to their insignificant device all the virtues—even superior—of all the most powerful, intricate, and scientific electrical apparatus, applied in the most skillful and varied manner by trained experts. Even if the amount of electricity generated by one of these belt batteries was not quite infinitesimal, it would be adapted to only a very small proportion of cases, for it is of the variety known as galvanic, while many cases require faradaic electricity. A just idea of the amount of medical knowledge possessed by the proprietors of the magnetic belts may be gained from the fact that they claim that neuralgia and gout are the same disease manifested in different localities!

PEOPLE'S DEPARTMENT.

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

Is the Reformer Ultra?—E. E. B. sends quite a lengthy communication in which he courteously calls attention to the fact that reformers are often inclined to be extremists, and to "go beyond the bounds of Scripture and reason," and suggests that we might better advance the cause of reform by "an emphatic protest against the excessive or intemperate use of swine's flesh," instead of insisting upon "the total abstinence of its use." Our correspondent refers to the fact that the apostle Paul said, Col. 2:16, "Let no man judge you in meat, or in drink," whence he concludes that the New Testament "forbids rather than sanctions the idea of abstaining from meat of any kind."

We agree with E. E. B., that a moderate course is far wiser than the assumption of ultra positions. As we have frequently stated, we believe in being radical, but would scrupulously avoid being ultra or extreme. It certainly is safe to follow truth to its ultimate limit; but it is unwise to digress never so little from the straight path. Extremists and fanatics are always essentially in error in some particular.

But to come more directly to the point, let us consider the pork question a moment. Our correspondent could scarcely have chosen a more fortunate subject for us. The reasons which we present against the dietetic use of swine's flesh are so clearly evident to every one, and so manifestly conclusive, that few candid individuals are unwilling to admit that the human race were better off without the scrofulous beast; at least, without his carcass in the shape of food. This is not a matter of mere theory; it is a question of which every

thinking person can see the practical bearing. Trichinæ and tape-worms are not myths, nor figments of the imagination. They are cruel realities to suffering thousands. If people wish to eat animal food, there is an abundance of beef, mutton, fish, fowls, and other varieties of flesh, without resorting to the scavenger beast. Let them eat these more healthful and more nutritious kinds of meat.

We have less hesitancy in waging an uncompromising warfare against the hog because we are not alone in so doing. Thousands of intelligent physicians of all schools, in this country and in Europe, strongly advise the disuse of pork as a measure necessary for the preservation of the public health.

We respect the liberty of conscience allowed by Paul, hence, we do not pronounce judgment upon any. We simply place the facts before the people, leaving them to form their own conclusions and shape their own actions. We could do nothing more if we were inclined to take a further step, as we are not. Having in our possession facts which have an important bearing on the lives and health of thousands, would it not be ungenerous for us to refuse to make them known? It is our business to explain and elucidate the facts, and then, if our fellow-men do not choose to profit by the information, we have nothing more to do.

But we can hardly leave unexamined the intimation that the New Testament indorses the use of pork. Several points are worthy of thought in this connection.

1. The term "meat," employed in the text quoted, evidently refers, not particularly to animal food, but to all solid food, a very common Bible usage. It will be seen by reading Rom. 14, and kindred scriptures, that the intent of the apostle was to inculcate the idea that the use or disuse of certain food, as that which had been consecrated to idols, was no longer regulated by precise commandment, as under the ceremonial law, but was a question in deciding which every man might be guided by his own conscience. If a single isolated passage were sufficient to decide the question, the words of Paul in Rom. 14:21, "It is good neither to eat flesh nor to drink wine," would be far more relevant than the text cited by "E. E. B."

It is undoubtedly true that under the gospel dispensation the Jewish law enjoining the disuse of swine's flesh is no longer binding *as a law*. But there still exist the same reasons for discarding the hog as food that existed when the law was formulated by Moses under the instructions of Jehovah. The nature of the hog is the same now as then—certainly as bad, perhaps somewhat degenerated by his filthy habits. The Creator of the hog fitted him for a scavenger, and well knew that he was unfit for the food of man, and so forbade his chosen people to eat pork, as a precaution necessary for the preservation of the purity of their constitutions. These reasons are just as cogent now as four thousand years ago; and those who love that which is right, and pure, and good, for its own sake, will recognize the existence still of the spirit and basic principle of the ancient Jewish law against pork-eating, although the letter of the law may have been nailed to the cross together with the remainder of "the hand-writing of ordinances" which constituted the ceremonial ritual of the Jews.

Health-Reform Organization.— MR. EDITOR: I have a suggestion to make to the health reformers of Michigan. It is this: That in the course of a year or two, if not in this "centennial year," we effect a State organization of our forces. First, organize at home, in our neighborhoods, school-districts, then by towns and counties.

To commence, let some one in each county send his or her name to the HEALTH REFORMER as one to whom all the hygienists of the different towns in said county may send their names; then, when the lists have been classified by townships, such person to report back a list to some one in each town.

To illustrate: My family is the only one I know of in this vicinity which is hygienic; but there may be a dozen. As soon as I should be notified of them, I would make their acquaintance, and we would proceed to "work up" our district organization. We would meet often, going from house to house, if necessary, for social re-union, for mutual improvement; and by readings, discussions, circulation of the HEALTH REFORMER, tracts, etc., seek to enlarge our spheres of usefulness. Soon we would effect a town organization; and at an early day, with other organized towns, would organize a county society. With fifty or more counties in working order, how easy, effective, and of permanent usefulness a State organization! LEX.

[The following remarks were last month by mistake of the printer appended to another article; we repeat them this month in their proper connection.—ED.]

"In union there is strength" is a trite proverb, and a very true one. We have often thought of the possibility of effecting some sort of an organization of all interested in health reform and the dissemination of hy-

gienic truth. It is certain that the cause, although progressing, is not making one-tenth the advancement which would be possible with an efficient organization. The spirit of jealousy and rivalry which is manifested by many prominent professed friends of health reform is most disastrous. A partisan spirit is dividing the ranks of hygienists so hopelessly that there seems little chance for a united effort unless some kind of an organization can be effected upon so broad and liberal a basis that all could work with freedom, not feeling hampered or embarrassed by any rigid formula. How to effect such an organization is a problem which we have been studying, privately, for a year or two. Perhaps a solution will be reached in due time. Possibly the precise moment for an organization has not yet been reached, though there seems to be a great necessity for it.

The first great difficulty in attempting such an enterprise is to find thorough-going men and women with settled principles, who are willing to work. If we had a man like our correspondent in every township, we would feel no fears about the success of the undertaking. Let us hear more upon this subject.

Query.—Who is entitled to the honor of first discovering and publishing the orthopathic theory of disease; *i, e.*, that in disease, as in health, nature is doing right, and the best thing possible under the circumstances, and that no drugs taken into the system can "help nature"?

It is more than fifty years since the late I. Jennings, M. D., first proclaimed it, by lectures, to his numerous patrons in Connecticut. In 1847 he published his "Medical Reform;" in 1857, his "Philosophy of Human Life;" in 1867, his "Tree of Life." In all these works are clearly presented his orthopathic views. At the time of his death, recently, at eighty-six years, it is said he had another work, "Practical Orthopathy," about ready for the press. On p. 352, of "Medical Reform," is an account of the "Rain-Water Doctor," who had an extensive practice in Brooklyn, N. Y., in 1809, and on p. 348, of the noted "Indian Doctress," both of whom seem to have depended upon *nature*, with simple diet, for all recuperative force. In an introduction to the three lectures by Graham, it is said he advocated his principles in 1832, and was the "pioneer in health reform," although that was ten years after Jennings' first lectures, and twenty after the "Rain-Water Doctor" published his pamphlet, which ruined his practice, his patrons not being willing to be cured by water power!

As the discovery is one of the most useful of this century, its author ought to be had in lasting honor by the whole world, and all the more for the self-denial and heroism required in first publishing it. "Honor to whom honor is due." R. N.

We hope to give our readers, ere long, a sketch of the origin of the true views of the nature of disease and of its proper treatment. Dr. Jennings doubtless did a noble work, for which he has received much too little credit. We expect to publish soon an interesting sketch of the labors of this remarkable man.

What Health Reform Has Done for me.—It is a pleasure to me to acknowledge the benefit I have received from a knowledge and the practice of health reform.

Some three years and a half ago, I went to the Health Institute at Battle Creek, for treatment. I was very much broken down in health, my nervous system nearly exhausted from excessive care and anxiety, and my health impaired in other ways. For a year and a half there was a hard struggle on the part of nature to throw off disease. A part of that time I was very feeble, confined to my room, and at the best I could only walk a short distance; but an observance of the laws of nature, and an understanding of how to rightly relate ourselves to her laws as taught at the institution I have mentioned, has produced a great change—so great a change that those who saw me then think it almost a miracle.

In the spring of 1874 I commenced to gain, and my recovery through the summer was so rapid that in September I was able to resume my old occupation of teaching, and taught thirty-eight weeks with only two weeks' rest during the time, walking each day, on an average, from three to four miles, doing quite an amount of brain work, and some physical labor besides; and with all this, gaining in health and strength; and I can testify that I never was so free from aches and pains, and never enjoyed so good health as at present. When I think how I was two years ago, weak, nervous, not able to bear any excitement, confined to my room a good share of the time, creeping about the house, and feeling so weak and spiritless, and then see what I am now, I have no words to express my gratitude. I had no hope of

ever being so well; but I feel that I have obtained a new lease of life, and can recommend to every one the means that have restored my health; namely, baths, healthful diet, rest, quiet, and a happy, contented state of mind. E. R. D.

Going to Work.—A California friend writes: "I have noted the notice sent me with last number of the REFORMER. Just now it is almost impossible to remit; and yet I cannot think of doing without your excellent work. It has saved me a hundred fold its cost in the year I have taken it, and its present state of excellence is such that I take great pleasure in recommending it to all who give me the chance. I am devoting my spare time to canvassing for your publications, and hope to send you many subscribers this year.

"I hope before a month rolls by to be able to send my dollar with the rest; at present, being in temporary embarrassment and dependent on borrowed money to keep my family, I have to ask you to depart from your rules and not strike my name from your subscription list."

As we have repeatedly expressed, we are always very willing to wait on those who are laboring under pecuniary embarrassment, and only ask that they shall inform us of the fact and signify their desire for the continuance of their subscription.

A Life Twice Saved.—Mrs. Glunt, of Iowa, writes:—

Editor HEALTH REFORMER: I now send you my fifth dollar to renew my subscription to your health journal; and it is with pleasure that I do so. I do not want to miss a single number. By the blessing of God it has saved me and others a great deal of pain; and I believe in two cases, at least, has saved my life. May God bless and guide you in your endeavors to benefit the afflicted.

A Renovated Man.—An aged friend living in Southern Minnesota sends us quite a lengthy account of his experience. We have not room to publish the whole, but have read it with interest. He has read and re-read the HEALTH REFORMER for one year, and says, "I prize it highly; for it has saved me a doctor and a drug bill, it has renewed my age, and in a measure restored my health, invigorated my mind, sharpened my memory, in short, made a new man of me; for which I cannot prize it too highly." The gentleman evidently feels considerable antipathy against drugs, and with some reason; for drug medication has deprived him of his wife and nearly all his children.

Questions and Answers.

Cerebral Congestion.—Mrs. E. S. M., Pa., complains of a severe rush of blood to the head and face upon the slightest exertion, or exposure to heat.

Ans. Your difficulty is of nervous origin. By overwork, your nervous system has become diseased, and any unusual demand upon it causes unbalanced action. Relief will be obtained only by improving the general health. To do this, you should have rest, quiet, relief from worrying cares for a time, and gentle exercise in the open air. A little time spent in recruiting your health will be more profitable than any pecuniary investment.

Hygienic Etiquette—Honey, etc.—W. M. wishes to inquire through the REFORMER, 1. Is it wrong to set coffee, butter, and similar articles before company that are not reformers, and believe in using them? 2. Is honey healthful food? 3. What are the nutritious qualities of middlings, shorts, and bran?

Ans. 1. We think there could be no moral wrong in supplying such articles as you mention to persons who are accustomed to their use, and would hardly know how to get along without them. Persons long accustomed to tea and coffee really suffer when deprived of their usual stimulant, and usually become quite irritable in temper, owing to the general nervous disturbance. If we were to set about the task of reforming a devotee of these beverages, we should feel more certain of success if our subject were first put in good humor by a steaming cup of Oolong or Java. We should calculate, however, that that cup should be the last one. It would do a person no good to deprive him for once of his accustomed beverage, and he might, by such a course, be so prejudiced against you and your system that you would find it impossible to approach him on the subject of reform. Many people would at once attribute to parsimony on your part a course really prompted by no such motive. Of course there are circumstances under which it will be far better for an individual to make a rigid adherence to true principles of diet; as, for example, when he is visited by individuals prompted by curiosity to know his mode

of living, and similar circumstances. Good common sense and due consideration for the feelings and views of others will be safe guides in determining the proper solution of all questions of this kind. As a matter of conscience, the visitor is more concerned than the host, since the partaking is a voluntary act on the part of the former.

2. Honey is not food when eaten alone. Eaten with other articles, it may be used in great moderation, by most persons, without injurious effects; but a large use of the article is very injurious. Honey is a more objectionable form of sugar than ordinary sugar, as it contains many impurities. In collecting sweets from various sources, the bee also gathers the pollen of flowers, minute portions of the odoriferous matters of plants, and sometimes poisonous substances. It is these elements which give peculiar flavors to honey. To the same cause is attributable the peculiar effects which honey has upon certain people who are unusually susceptible to the influences mentioned.

3. Middlings and shorts are much more nutritious than fine flour. They will support life; fine flour will not. Bran has no nutritive value by itself. It is, however, an important ingredient of bread, serving as a gentle mechanical stimulant of the bowels to action.

Diet.—C. B. W., Neb., is a hard-working farmer who eats pork, and drinks tea and coffee. At night he feels very much exhausted. He wishes to know what diet would be good for him; also inquires if corn mush and milk is a good supper dish for children, and if children should be allowed to eat all they want.

Ans. 1. Pork is not a good article of food. You will feel far less exhaustion at night if you will discontinue the use of tea and coffee. You will miss them for a few days, and may, perhaps, feel worse for a day or two; but the ultimate result will be improvement. Do not give it up without a fair trial.

2. Corn-meal mush is a very good article of food for children at any time, if the milk is obtained from a healthy source. Children should be allowed to eat all they need; but if they have depraved appetites, as they are quite sure to have if given highly seasoned food, the amount of food given them must be carefully guaged according to their wants. It should be remembered that children need more food in proportion to their size than grown people. It is of course better to allow a child to eat a little too much than to give it insufficient nourishment, as nature can dispose of a surplus better than she can supply a deficiency.

Paris Green and Potatoes.—E. C. T., Ohio, says, "Will you please answer through the REFORMER whether the application of Paris green to potato-vines is injurious to the potatoes or the soil?"

Ans. Prof. R. C. Kedzie, of Michigan Agricultural College, has ascertained by careful experiments that Paris green, as used in the extermination of the potato beetle, injures neither the potatoes nor the soil. That which falls upon the leaves of the vines is not absorbed, and those portions which fall upon the earth, are rendered insoluble by combining with the iron of the soil. All the cases of poisoning which have occurred in connection with this use of the chemical have been through careless handling, or the inhalation of the powder. It needs to be used with caution.

Headache.—Says O. P. W., "I have a dull pain in my head quite often; please tell me what to do for it.

Ans. Fast for a meal or two, take a warm sitz-bath and foot-bath combined, and apply a cool compress to the head. If cool applications do not relieve the pain, apply fomentations for 10 or 15 minutes, and then tepid compress.

M. C. H.: It is better to remove artificial teeth from the mouth at night, so as to allow the tissues of the gums an opportunity for healthy repair. During the day, they are subjected to constant pressure and friction, from which they should be relieved during the night. The rubber plate is said to be colored with a mercurial compound which sometimes produces salivation. This will be much less likely to occur if the teeth are worn only during the day. The teeth will be kept cleaner, in most cases, if allowed to remain in a cup of soft water over night.

We cannot tell much about your lady friend, having only one of the symptoms. A judicious use of the health-lift might benefit her. Probably electricity would be found valuable, with gentle exercise out-of-doors.

Mrs. H. L. C., Minn.: Induce your girl to lay aside her corset, wear loose shoes or slippers, and take a warm foot-bath for ten minutes, every day.

E. D. J., Mass.: Your daughter has dyspepsia, disease of the bladder, symptoms of paralysis, and, probably, chronic bronchitis. She ought to be under the care of a careful hygienic physician, at a good health institution, if possible.

J. D. P.: You should send full address for answer by letter, if you wish information of the kind required.

FARM AND HOUSEHOLD.

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

Questions for Dairymen.—Though we do not especially advocate the liberal use of milk by adults—particularly dyspeptics—we heartily commend the following questions to the careful consideration of all who have the care of cows, whether their dairy products are for home consumption or for sale :—

Do your cows feed in swamps and on boggy lands ?

Have you good, sweet, running water convenient for stock, and is it abundant and permanent in hot weather ?

Have you shade trees in your pasture, or do you think that cows make better milk while lying down to rest in discomfort in the hot, broiling sun ?

Do you use dogs and stones to hurry up the cows from pasture at milking time—thus over-heating their blood and bruising their udders ?

Do you cleanse the udders of cows before milking by washing their teats with their own milk, and practice further economy by allowing any droppings to go into the milk pail ?

Do you enjoin upon your milkers to wash their hands thoroughly before sitting down to milk, or do you think that cleanliness in this respect is not important for milk that is to be treated for butter-making ?

When a cow makes a mis-step while being milked, do you allow your milkers to kick her with heavy boots, or to pound her over the back and sides with a heavy stool, accompanied by sundry profane remarks addressed to the cow to teach her manners ?

Is the air about your "milk barn" or milk house reeking with foul emanations of the pig-sty or manure heap, or other pestiferous odors ?

Good, fresh, clean water, in abundance, is one of the most important requisites for milch cows, and it should be in convenient places, where stock will not be required to travel long distances to slake their thirst. If springs and running streams cannot be had in pastures, a good well, with wind-mill and pump, makes an efficient substitute, and the waste water may, if necessary, be conducted back into the well, so as to keep up a constant supply of good, fresh water.—*Willard's Butter Book.*

The Way to Pull Wool.—Prepare a board three feet wide and three or four feet in length, with one smooth side ; spread a pelt on the smooth side of the board, flesh side up. Have mixed some lime and water, about the consistency of good, rich cream (lime mixture such as is suitable for plastering or laying brick will do, but you must use a little more of the latter). Wood ashes mixed with water, as with lime, will start the wool quicker, but it frequently eats into the skin, and makes it so tender that the skin will tear in pulling. Spread a thin layer or coating of lime mixture all over the flesh side, then fold the flesh sides together carefully, and roll up and lay in a moderately warm place from six to twelve hours ; the wool will then be ready to pull. Then place the board at an angle of (say) forty-five degrees, unroll the pelt, scrape off the lime and lay the flesh side upon the board, holding the neck with one hand, and with the other slide or push the wool off in a whole fleece, which can be easily and nicely done in ten minutes. Then roll it up, same as if shorn wool. Put the fleeces separately into a dry, airy place for six or eight days, for the moisture to escape that is natural to lately shorn wool, as well as that absorbed from the use of lime moisture. Last year we had a similar lot of wool to that we now have, and sent it to a wool manufacturer. Their sorter valued it at forty-five cents per pound. Calling such wool worth thirty-five cents this year, we get for the wool of each pelt $1.92\frac{1}{2}$, or $1.17\frac{1}{2}$ more than the highest price of the pelts would have brought. It is more profitable to pull the wool from sheep pelts than to sell the pelts.—*Ex.*

Scarecrows.—Now that the planting season has come, we have no doubt that many a farmer will rummage through the garret to find the cast-off garments which, stuffed with straw, are to be set up in the corn field to warn off the marauding crow. We have never had much faith in this artifice. Crows are possessed of much more wisdom than is generally credited to them ; and while an immovable bundle of rags may drive them away for a short time, we believe that eventually they discover the humbug, as we have seen the birds complacently picking up young corn almost within the shadow of as elaborated a stuffed scarecrow as ever was erected. We,

however, have heard two plans suggested which are calculated to intimidate even the boldest of these birds; and as they are easily carried out, perhaps our farmer readers may make use of them. The first and best is a suspended looking-glass. Take two small, cheap mirrors, fasten them back to back, attach a cord to one single angle, and hang them from an elastic pole. When the glass swings in the wind, the sun's rays are reflected all over the field, even if it be a large one; and even the oldest and bravest of crows will depart precipitately should one of its lightning flashes fall on him. The second plan, although a terror to crows, is especially well suited to fields subjected to the inroads of small birds and even chickens. It involves an artificial hawk made from a big potato and long goose and turkey feathers. The maker can exercise his imitative skill in sticking the feathers into the potato so that they resemble the spread wings and tail of a hawk. It is astonishing what a ferocious-looking bird of prey can be constructed from the above simple materials. It only remains to hang the object from a tall bent pole, and the wind will do the rest. The bird makes swoops and dashes in the most headlong and threatening manner. Even the most inquisitive of venerable hens has been known to hurry rapidly from its dangerous vicinity, while to small birds it carries unmixed dismay.—*Scientific American.*

Sprouting Potatoes.—Put a bushel of potatoes into a barrel and shake them briskly till the sprouts are broken off. It will take but a minute or two to do it. "To keep table potatoes from April to July is to put about a bushel into each barrel and have one extra empty barrel. About once a week begin at one end of the row and pour the potatoes from the first barrel into the empty one, and the next into that, and so on till the potatoes have all been changed into a different barrel. As 'a rolling stone gathers no moss,' so a moving potato makes no sprouts. This method will not only save much disagreeable labor, but also keep the potatoes in much better condition for planting or the table. The growth of sprouts will destroy the value of the potato in a short time."

Infants' Feeding-Bottles.—Attention has been lately drawn to the exceedingly reprehensible practice of feeding infants from bottles furnished with india-rubber tubes. These tubes become coated with particles of decomposing and fermenting milk, and hence cause grave mischief; they should therefore never be used more than once, and then thrown away. The vulcanized rubber is, however, dangerous when new, as metallic compounds are used in its preparation. The best kind of bottle is one with a glass nozzle with a black rubber cap; this can be removed, turned inside out over the finger, and cleansed by thorough rubbing with salt after each use.

To Cure Windgalls.—Windgalls on the legs of a horse are the result of severe work, which produces irritation of the sinews of the legs, an increase in the secretion of synovia, or "joint oil," and an excess of this is shown in the small protuberant sacs, or windgalls. To cure these, take the animal from hard work and apply pressure to the affected part. A good way to do this is to fold pieces of soft, wet rags, put these upon the galls, and bind with a bandage. By constant pressure applied in this manner, the galls may be driven away. The bandages may be taken off when the animal is taken out of the stable, but should be put on again as soon as he is returned. Let this treatment be kept up until a cure is effected.

To Destroy Codling Moth.—Place bunches of rags (cotton or soft woolen) in the crotches of your trees, or tie them round the principal limbs on the trunk, and once a week examine them and kill all the worms. In a large orchard the easiest and most expeditious way is to attach a clothes-wringer to a wheelbarrow, take the rags down, run them through the wringer, and replace them in the trees again. In taking the rags from the trees, be careful to see that none of the worms drop off or remain sticking to the bark of the trees.

Kitchen Humbugs.—These usually come to the back door, and bring something to accomplish the impossible. It may be a silvering liquid, or some butter-powder to make a pound of butter from a quart of milk, or it may be the chap with the non-explosive powder, which, if put into the lamp, will not only keep the oil from exploding, but the chimney from cracking! Sensible people will need no advice in such matters. Others had better keep a big dog.—*Am. Agriculturist.*

Pruning Vines.—Few persons practice pruning cucumber, melon, and other similar kinds of vines; still, it is just as beneficial, if properly done, as the annual pruning of the grape and other woody plants. The pruning should be confined, however, to the pinching off of the ends of shoots only.—*Rural New-Yorker.*

POPULAR SCIENCE.

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

Don't Kill the Useful Fly.—Notwithstanding the many pathetic appeals made against the cruel destruction of the harmless house fly, whose greatest crime is the little speck of dirt he leaves behind, they have not availed to protect him from the cruel ingenuity of sundry devices for decoying him to death. People generally detest insects of all kinds, especially flies, and often express the greatest wonder that the Creator should have formed so useless and troublesome a creature. This prejudice against insects in general is without just foundation. Many of these tiny creatures are man's most useful protectors. The common fly is especially deserving of credit for great utility.

What good can a fly do? I should like to know, says one. The next time one of these little creatures alights near you, instead of brushing him aside, or crushing him with a book, just keep perfectly quiet and watch him a little while. Presently you will see him raise one of his tiny fore legs—the fly has six legs, you know—and carefully brush his head and wipe his face, much as a cat will do. But observe that after each brushing down he rubs his two fore legs together in a curious way, and then, bringing his feet near his mouth, he thrusts out his curious tongue and takes something in. What it is, you cannot tell; for the object is so small that it really appears as though Mr. Fly was only making believe eat.

Continue to watch without making any alarming demonstrations, and you will see that the two hind legs are used to brush down the whole after part of the body. The back, sides, and both sides of the wings are carefully wiped, and then the feet are rubbed together, just as were the fore feet. It is curious to note the manner in which the hind feet are rubbed upon the middle ones, and these again upon the front ones, as if to transfer some dainty tid bit to a point accessible to the mouth.

But for what is all this rubbing and brushing? Let us take a look at our fly through a microscope. What do we see? Thickly studded over his whole body, legs, and wings, are little curved, sharp-pointed bristles. Entangled among these are numerous little motes which the fly combs off with his legs, collects upon the velvety pads of his feet, transfers from one foot to another, and finally to his mouth. If we examine the contents of his stomach, we find multitudes of these same little specks.

Now let us make another experiment. We go into a darkened room into which a single small ray of sunlight is admitted through a little opening in the shutters. As we look across the brilliant beam, we notice myriads of minute bodies dancing up and down, in and out the streak of light, as though possessed of life. Collecting a few upon a slip of glass, and placing them under a powerful microscope, we find that these little motes are really little atoms of living matter—germs of parasitic plants, and the products of putrefaction. They are the incipient causes of decay, and of many diseases. We find, further, that they are identical with the specks found on the fly's wings and in its stomach.

It turns out, then, that the fly is really a scavenger. He skims about through the air, darting hither and thither, in every direction, for the purpose of collecting upon his bristling hairs the germs of putrefaction and disease. When he thinks himself well covered, he quietly sits down and scrapes a meal off his back. No epicure handles his food more daintily, or apparently enjoys it more. Surely, the fly is a very useful animal; why kill him?

Any one who would like to examine this curious insect for himself will find the "Pocket Microscope" advertised in this number a most valuable aid.

Cloth and Thread from Pine Leaves.—A process has been recently discovered by means of which a substance resembling cotton-wool is made from pine and fir leaves. "It is prepared in four qualities, adapted for stuffing mattresses, pillows, etc., and for weaving. For the latter purpose, the fibers of the material are separated and treated in machines similar to fulling mills. Other processes follow, which result in the production of an excellent thread, which can be woven alone or mixed with wool, cotton, silk, or other fibers. The cloth thus made is of very close and fine texture, and is soft and pliable."

NEWS AND MISCELLANY.

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

—Russia has more than 5,000 tobacco-mills.

—The Mexican insurgents are not prospering.

—Terrible floods are reported in France and Switzerland.

—Reports from Russia say that the Bosnians have declared war against the Christians.

—Paris is calculating to "beat the world" on exhibitions in 1878.

—A fire broke out in Quebec, May 30, which destroyed one thousand houses.

—There are 70,000 children living on boats in England, who receive no education.

—During the recent drought in Jamaica, water was so scarce that it fetched 18 shillings a puncheon (84 gals.).

—It is reported that Mrs. Lincoln has fully recovered her reason, and has been restored to her family and taken possession of her property.

—A petition for the release of Fenian prisoners, signed by ninety members of parliament, was recently rejected by Mr. Disraeli.

—Long Island is overrun with potato bugs. Dead ones, drowned by the surf, are found piled up in rows along the shore.

—Mr. Bristow has been compelled, by administration opposition, to resign the office of Secretary of the United States Treasury.

—Nearly every member of a large party which left Cincinnati for the Black Hills was murdered by the Indians while passing through the "Sand Hills."

—The Spanish government has by recent legislation deprived the Catholic priests of the monopoly of religious teaching which they have long enjoyed. Now we may hope for reform and progress, even in Spain.

—The newspapers chronicle the usual number of murders, suicides, robberies, and other crimes, which do not seem to be at all lessened by the patriotism aroused by centennial celebrations.

—The war between Guatemala and Salvador has been concluded by the complete overthrow of the latter. Guatemala imposed upon Salvador a treaty which requires the expulsion of the Jesuits.

—It is said that arrangements are being made —and are now nearly completed—for closing a centennial safe which is not to be opened for a hundred years. If the contents of the safe are to represent the present status of society, a complete set of fashion plates, an assortment of cigars, a half a dozen long-necked green bottles, and a life-sized portrait of "the toper of the period," ought to occupy a conspicuous place on the front shelves.

—The reduction of railroad fares, owing to lively competition, has brought rates so low that it has been truly said that it "costs less to ride in a railroad car than to sit still in a first-class hotel."

—On Sunday, June 1, Senator Blaine was stricken down by a shock resembling sunstroke, just as he was entering a church in Washington. For a day or two his condition was critical; but he is now convalescent. He is still in the hands of the investigating committee.

—A Californian has discovered a mine of rock soap near the city of Ventaur. His family used it for domestic purposes a year before he announced the discovery. We shall expect next to hear of a bread mine, or a milk spring. California is well provided for.

—The exposures of "canal rings," "whisky rings," "safe burglaries," "railway jobbery," "lobbying," and sundry other corruptions, are not very flattering exhibitions for the centennial year; nevertheless, the exposures are not so bad as the evils themselves.

—Pekin has generally been reckoned one of the most populous centers of the globe, the number of its inhabitants being set down by most authorities, and by official figures, at between one and two millions; but Dr. Breitschneider affirms, from his own intimate knowledge of the city, that its population does not exceed half a million at the very most.

—All parties have been surprised by the nomination of two of the less conspicuous of the republican candidates for president and vice-president, Gov. R. B. Hayes, and Wm. A. Wheeler. The press is quite unanimous in expressing satisfaction with the nomination, and even democratic organs find little to say against the candidates.

—Strong measures are being urged to check the present rapid immigration of Chinese to this country. California papers assert that the Chinaman never becomes a citizen, and is a veritable social pest on account of his vices, his gross immoralities, foul diseases, and persistent opposition to all attempts to reform and elevate him.

—Dr. Sims, president of the American Medical Association, in his recent address before that body made a telling attack upon the many absurd regulations of the "Code of Ethics" of the "regular" medical profession. He declared it to be unjust, inefficient, the product of the stage-coach movements of a past generation, and not adapted to the present wants of the profession.

—A special train left Jersey City for San Francisco, Cal., June 1, and arrived at its destination on June 4, making the trip in eighty-three and one-half hours. The average speed was forty-two miles an hour. The fastest speed ever attained by a railroad train is said to be eighty-one miles in sixty-one minutes. The English express trains usually run sixty or seventy miles an hour.

—The prospects of a bloody Indian war, according to many reports, are daily becoming more serious. "Post traders" contradict the general report, and contend that there is no cause for alarm. It is a very suggestive fact that in some localities where there have been many murders committed and a good deal of scalping done, the military authorities find no traces of Indians. The conclusion is that the scalpers are of a lighter complexion than red men. They must have black hearts.

—On May 30, Abdul Aziz, the Sultan of Turkey, was compelled by an uprising of the populace of Constantinople, to abdicate the throne. His nephew, Mourad Effendi, was proclaimed sultan in his stead. The whole affair transpired without the shedding of blood. The sultan's immense personal treasures were soon after seized, and it is reported that in a fit of temporary insanity he committed suicide by opening the blood-vessels of his arms with a pair of scissors. It is generally suspected, however, that he was assassinated, a common Turkish custom of disposing of deposed sovereigns. The new sultan promises to be a much more competent ruler than his predecessor.

—No two nations in the world have utilized the mechanical powers of nature so universally as the United States and Great Britain. Theirs appears to be a race of inventors and discoverers, who are constantly on the alert to lasso some wild engine of strength, to be subjected to the service of man. The amount of steam power now employed throughout the Union is nearly 4,000,000 horse, while that of Great Britain is equivalent to some 3,500,000. Both have also one-third as much strength represented in water-power, at the least calculation. Thus genius has harnessed down an agent that, without tiring or complaining, does the drudgery of nearly 10,000,000 human beings.—*Sel.*

—The San Francisco *Chronicle* is informed that the Mormon migration to New Mexico is being prepared for. On May 18, Brigham Young, Jr., and High Counsellor Wells started for the chosen place to complete the plans. It is said that young Brigham is, soon after the removal, to be made president of the church, so as to become firmly established in control before the death of his father, which naturally must occur before long. Opposition to this course is anticipated, there being several powerful candidates for the office, including the nephew of Jo. Smith, the founder of Mormonism. The *Chronical* says of young Brigham: "Brigham, junior, is very unpopular—even odious—in the nostrils of the great majority of the Saints. He does not possess even ordinary intelligence; is immoral, intemperate, and brutally tyrannical; has labored more for the advancement of his own interests than those of the church; and is generally objectionable upon general principles. He is, however, sound on the polygamy question, having seven wives. That trouble is apprehended is apparent from the fact that for the past few weeks that ancient and murderous organization, the Nauvoo Legion, has been organizing.—*Sun.*

—An eccentric Londoner, of nearly ninety, who has given special attention throughout more than half of this period to the collection and classification of reports of criminal trials, is getting discouraged, and says: "It may be that my increasing years render the task more difficult; but my opinion is that crime of the worst character is becoming so prevalent that no one man can keep pace with it. My books of murders are far in arrears; I am far behindhand with my divorces, and my forgeries have so accumulated on my hands that I have been compelled this week to employ a young man to aid me in posting up the records."

Literary Notices.

HOOKER'S CHEMISTRY. New York: Harper & Bros.

The author says of this work, in his preface, "It includes only that which every well-informed person ought to know on the subject, and excludes whatever is of value only to those who are to be chemists, or who intend to apply chemistry to specific branches of business, as medicine, metallurgy, etc."

The present edition has been thoroughly revised, and presents with considerable clearness the most interesting, and generally practical, facts of chemistry. The new nomenclature has been introduced, though we notice a few deviations from its most approved form.

As a work for the general reader, or for the student desirous of obtaining but a superficial knowledge of the science of chemistry, it will prove an interesting and instructive work, and it possesses an advantage over most other works, for such a purpose, in that a large share of its illustrations are drawn from natural objects, or from such simple experiments as an ingenious student can perform with such simple apparatus as he can himself construct.

ALCOHOLIC POISON. Battle Creek: Health Reformer. Price, 25 cents.

This work defines true temperance, explains the nature of alcohol and the manner of its production, describes its physical effects upon the human body, exhibits by statistics its moral and social effects, points out the causes and proper cure of the evil of intemperance, answers the drunkard's arguments in favor of drinking, exposes the fallacies of alcoholic medication, and defends the Bible against the imputation that it advocates or favors the use of alcoholic drinks. Temperance workers will find this a useful auxiliary.

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.

☞ Those desirous of engaging in the circulation of health and temperance tracts will please notice the liberal terms on which these publications are offered: SIXTEEN HUNDRED PAGES FOR $1.00. The whole series of fifteen tracts, aggregating nearly 250 pp., is put up in a neat package, which will be sent, by mail, post-paid, for 25 cents. Have you a friend who is inquiring about the principles of health reform? send him a package. Have you candid friends who are ignorantly ruining their nerves with tea or coffee or tobacco? risking their lives by eating pork? or running a still greater risk by indulgence in alcoholic beverages? send the address of each one, plainly written, and accompanied with a quarter of a dollar for each, and the packages will be mailed direct from this Office. A package of these tracts is a library of hygienic truth condensed into a very small compass.

☞ Invalids contemplating a trip for health, or a short or long stay from home for the same purpose, will do well to read, before leaving home, the advertisements of the several first-class health institutions given in this number. Correspond with the respective proprietors, and choose the one which seems to possess, for you, the most advantages.

The best "watering places" in the world are these health institutions, where water, together with other remedial agents, is applied scientifically and judiciously. A few weeks at one of these pleasant homes will do more to restore an invalid to health than as many months at Long Branch, or Cape May, or Saratoga. Do n't go to those places, where you will be annoyed by the ever-changing crowd, harmed by unwholesome diet, and disgusted with fashionable extravagances.

HEALTH REFORM AT THE CENTENNIAL.—The HEALTH REFORMER was fortunate in securing a very advantageous situation at the Centennial Exhibition. The case containing health publications faces a main avenue near the east entrance of the main building, and receives considerable attention from the crowds which enter the building at that point every morning. Circulars, small tracts, and other publications are eagerly taken; and we hope to see some good fruits.

REFORMER TO FRIENDS.—Several have asked, "Do you still continue the offer of the HEALTH REFORMER at *fifty cents a year* to those who wish to send it to their friends?" To all who make this query, we answer, Yes; and we would call the attention of all to this liberal offer. Here is a fine opportunity for a philanthropic hygienist to do much good. "But how can you afford the journal at such a low rate?" we are often asked. Of course there is no profit at such terms; but the publishers of the REFORMER are not aiming at money-getting. The dissemination of great and much neglected truths is their object, and for this they are willing to make great sacrifices. How many of the readers of the REFORMER will second their efforts by doing what is in their power to aid in this work?

The centennial year will be marked by progress in many directions. Stimulated by patriotic zeal, laudable enterprises of all kinds will take a step in advance. Shall not the noble cause of health reform move onward also? We trust it may; but our work is aggressive. We cannot sit still and see the truth advance. We must be active, energetic workers, ready to speak a word for hygiene on every proper occasion, and always illustrating and enforcing our remarks by personally exemplifying the principles which we advocate.

Let our friends remember that the offer referred to is always open. For 50 cents, 384 pp. of instructive and interesting reading will be furnished in twelve numbers, to as many of the friends of our patrons as they are willing to pay for. Send in the names! We want to make 5,000 new acquaintances this year.

MICROSCOPES.—In our advertising columns, this month, will be found described two beautiful instruments which are fully equal to the descriptions given of them. We have been so frequently asked the question, "Where can I get a microscope?" that we have concluded to furnish them ourselves. We have been to some expense and considerable trouble to secure instruments which could be relied upon as really valuable, and think that any of our readers who may purchase either of the ones described will be more than satisfied with his bargain. The price is so low that these useful means of instructive entertainment are within the reach of all.