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

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Alcoholic and Non-Alcoholic Treatment Tested by Results.*

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I HAVE listened with great pleasure and profit to the very valuable statements of experience which we have had here to-night upon the subjects which we are met to discuss,—the personal and professional experience of the speakers as practitioners of medicine. There are three gentlemen who have kept to those points. The first is Dr. Collenette; the second, Mr. Townson; and the third, Mr. Bennett. Now, Mr. Chairman, I would say that I indorse most heartily everything that has fallen from the lips of those gentlemen. I would add that only a few weeks since I had a letter from one of the great men whose names have been mentioned to-night, and that is Mr. Higginbottom, of Nottingham. The old man could not come here to-night to speak to this audience; but he wrote to me and told me that he had been in practice for sixty years, and that there was no greater curse than the way in which our profession had misled the public in regard to this question. He told me that for something like forty years he had never given spirits; and no language could have been stronger or more impressive than the language which the old man, after sixty years of active practice, at eighty years of age, used in his letter to me on this question.

Well now, sir, as to my own personal experience. I have been in the active practice of medicine for more than twenty years. My whole life has been spent in preparation for medical practice, and in the active exercise of the duties of my profession. As a student, I had the good fortune to hear both sides of this question; for I happened to be a pupil of the celebrated Dr. Carpenter, in physiology, and just twenty years ago I commenced my first session of formal hospital study in that branch, and used often to wait for Dr. Carpenter, and walk a couple of miles or so home with him in order to have the treat of hearing him talk, after his lecture, on this and some other subjects. He impressed upon my mind the practical results which he told me he had found in reference to the use of alcohol; but, on the other hand, all the clinical teachers with whom I came in contact believed as firmly in the use of wine, beer, and spirits, not merely in cases of disease, but in cases of health, as thirty years before men did in the use of bleeding, and mercurializing, and starving.

For years I went on without any very clear convictions upon the matter, using spirits very largely and very freely, as was then the habit and fashion of the day, but yet myself practically remaining an exceedingly temperate man,—often months together a total abstainer. I was a total abstainer throughout the period of my work in the dissecting room, and there I used to hear men say that they could not do the dissecting unless they took spirits or beer. I found that I did it perfectly well, and never had any ailment whatever, whereas other men engaged in the same work were constantly complaining of diarrhea, and of being half poisoned by the effluvia to which they were obliged to expose themselves. My next experience was at Newcastle, in the epidemic of cholera, which carried off, I think, in the first eleven days I was in the town, over a thousand people. That was in the autumn of the year 1853. For nearly three months, in Newcastle and Dundee, I was occupied in handling cholera patients and attending to them all the working hours of the day. I took no wine, beer, or spirits, all the time, and I never had better health in my life.

After settling in practice in London and getting into hard work, I went on with the conviction that these things were necessary

* Speech at a great Medical Temperance Meeting in Exeter Hall.

in sickness, and I had no very strong feeling in regard to the moral responsibility which is involved in this matter. My attention was then called to the question by being asked to take the chair at a temperance meeting. The result of that was that the subject was fastened upon my mind in another way, and I never afterward shook it off. It settled itself down in my mind, and there it worked itself out into a very clear conviction that we were mistaken in the way in which we prescribed these drinks; and from that time I became, if anything, personally a more frequent abstainer than before. I went on testing it, and perhaps four or six months together I would take nothing at all in the way of alcohol, and then for three or four months together I would take a glass of beer two or three times a day, or a glass of sherry. I found that I liked the beer or I liked the glass of sherry when I was accustomed to take it, and that when I first left it off I missed it. But when I came to take stock carefully of my power for work, of my accuracy in memory, of my readiness in every way in my profession, and of my general condition, I found that I was better when I took none of these things than when I took them.

My wife was led to adopt practically the same rule of life. I shall never forget when she was nursing her first child, who is now a little girl of about twelve or thirteen years of age, an old friend, a physician of some eminence, was chatting in my drawing-room, and it came out that my wife was nursing her child without taking any stout, and he said to her, "You know, Mrs. Edmunds, your husband is a little crotchety, and you will damage your health if you go on." She said she had not damaged her health yet. "But," he said, "you may do it once while you are so young, but you will find it out the second or third time, and you will break down if you don't take something." Since then my wife has nursed five children (twelve months each) without anything of the kind. Although not originally strong, she has maintained her health in the most satisfactory manner, and the children enjoy more than average health and strength. My own personal conclusion in respect to my wife, my children, and myself, is that in every way we are all of us the gainers by personal abstinence.

As to my professional experience, I think I have alluded to the prejudice with which I, in common with other medical men, started in life as practitioners; and one is not to be blamed altogether for that, for young men will do best, generally speaking, to follow the advice and example of those who are older than themselves. They are, I think, bound to do that, wherever there is a clear weight of opinion in reference to matters upon which a serious responsibility has to be exercised—and the physician's duty at the bedside of the sick and dying is a serious responsibility which he must discharge and exercise in full view of that which is the opinion generally held by his seniors in the profession. But there are times and there are circumstances which necessitate his looking at such dogma, with all its weight and with all its authority, straight in the face, and investigating it thoroughly. My attention was called to this question in precisely the same way that the three other gentlemen who have mentioned the matter have said that their attention was called to it—not by their medical teachers, not by the clergymen, not by the magistrates, not by the people whom they met at dinner or met in their drawing-rooms—but by hard-handed working men, who came to them for advice, who challenged them and said, "If you will give me a reason for taking this beer I will take it, for I am sure you would not recommend me to do that which you had not a good reason for telling me to do; but my experience has shown me that people are better without these things than with them, and I want to learn what they are to do for me now, when I am a little out of health, and how that which is not good for me when well can be good for me when I want more power in order to throw off my sickness."

I, sir, like our friend Dr. Collenette, had no answer to give, and felt ashamed of myself, and in consequence of that I really examined the dogma of the profession, and I tried carefully those cases of fever, those cases of delirium tremens, those cases of loss of appetite, those cases of general debility, of indigestion, and so on, in which we are generally in the habit of prescribing these liquors almost indiscriminately, and going step by step, lessening and lessening the quantity, I found that my patients, instead of doing worse, did a great deal better. Take the cases of debility. Nothing is more common than when a man gets out of health from mere over-work, from some improper use of his health, from some misuse of his faculties, or some other thing which ought to be remedied by the rules of hygiene, which ought to be prevented and cured by the removal of its cause,—nothing, sir, is more common in these cases than to tell the man to take a little wine, instead of telling him to look into his surroundings and get rid of the cause. I find that what is wanted with these cases of debility is regular work, proper hygiene,

mental discipline of the individual, and a proper system of diet and regimen; and then I find that they get well better without drink than they do with it. With regard to loss of appetite, it is quite true that, if a man has been accustomed to drink alcoholic liquors at his meals, when he first leaves them off he will miss them and fail in his appetite for a time; but, sir, so he would if he were in the habit of smoking a cigar before dinner; so he would if he were in the habit of sucking his thumb before dinner. In fact, it is a mere habit, and whenever a man tells me that he cannot eat his dinner without his glass or two of wine, I know that the wine has got hold of him to that extent. I know that is all the more reason why he should leave it off, and I always find that, if he will adopt the advice which is given to him, and leave it off, in a week he will eat more than he did before, will digest it infinitely better, and get stronger in every way.

Cases of fever. In the conversations I used to have with Dr. Carpenter I learned that his view was that wine was good in cases of fever; that this was one of the sets of cases in which wine was useful. Those were the opinions Dr. Carpenter used to hold at the time of my communication with him twenty years ago, and for a much longer time I was in the habit of administering alcoholics in cases of fever; but I left it off gradually, and I now find that patients do better in fever without wine than they did with it. I cannot say anything stronger than has already been said by one of the representative men of our profession, Dr. Gairdner, of Glasgow, who has proved beyond question that patients in fever do infinitely better when they are fed on milk diet without spirit, than when they are treated with alcoholic beverages. The mortality which Dr. Gairdner had was less than half that which occurred under Dr. Todd, of London, a man most eminent, but who sang the praises of brandy at every turn and to every patient.

Cases of rheumatism. That is about the only disorder which occurs to me that has not already been alluded to to-night, in which marked influence is manifested by spirit, and I would say, sir, that cases of rheumatism in a large measure seem to me to depend upon a damaged condition of the tissues of the body, caused by soaking in spirit; and I believe that rheumatism, acute or chronic, is infinitely better treated without spirit than with it.

Delirium tremens. Delirium tremens is a disease of which I have seen a good deal. Years ago I was surgeon to the Draymen's Club at Hanbury's brewhouse. I was also surgeon for seven years to one of the largest divisions of the metropolitan police,—the H division. And perhaps these two classes of men are most exposed to drink of all classes of men. The police are bribed at every turn with alcoholic liquor, and large numbers of them are foolish enough to take it. Often they do this rather than run the risk of offending the person who offers it to them; and the result of that was that I saw a great deal of ill-health produced in these two classes solely and entirely by the use of alcohol. For a long time I believed it was right to treat delirium tremens on the principle of giving a man "a hair of the dog that bit him." When I first left off spirit, as I did gradually in those cases,—and they were the last hold of this doctrine on my mind,—I used to substitute for it, first, chloroform in its inhalation, and then opium. I have now for several years done entirely without either opium, chloroform, spirit, or any other narcotic—and I have never lost a patient in delirium tremens since I adopted the practice.

The treatment which I adopt in delirium tremens is simply that of looking at the man as suffering from two factors in his disease,—the first is damaged nervous tissue by soakage with alcohol, and the second is acute poisoning by alcohol in his blood. What is the proper way of treating such a disease? Suppose a man has been poisoned with arsenic, taken slowly at first, and then a large dose at last. The slow poisoning of the arsenic has damaged certain tissues in his body. The large dose which he takes at last has produced vomiting and inflammation of the stomach. How should we treat him? By giving him a little more arsenic, and then leaving it off gradually? I think not. I think the first thing to do would be to look round and see who is doctoring him with arsenic, and stop the in-going of the arsenic; and I think the next would be to put the man under such conditions as to eliminate the arsenic as rapidly as possible; and I think the third thing would be to look after the man's surroundings in such a way by food, and bathing, and ventilation, and hygiene in general, as to support his strength and enable him to throw off and survive the disease or mischief that had come upon him.

Now, sir, upon that simple principle I say that delirium tremens should be treated. A man has got his tissues poisoned and damaged by long soaking with spirit; a man has got his brain poisoned with a large dose of the poison that he has taken, say, in the last week, and he should be put precisely in the same circumstances in which he would be placed if he had taken arsenic as described.

I put him to bed, and sometimes I have to lock up his clothes, or tell his wife to do it, in order to prevent his going to the public house. I economize the strength which he has left in him. I stop all the supplies of spirit; I order him a simple bath, a simple purgative to eliminate what spirit remains in him, and I give him such simple food as he can digest, in order to replenish the powers of his system; and the result is, that in a week he is always well.

I will say a few words in reference to nursing mothers. My advice to all the ladies who consult me in reference to this question is, to look after their food carefully, and abstain from alcohol. Some of them won't heed it. That I can't help. Some of them do, and I look round upon families in which mothers have adopted this advice, and I have seen no families in which the mothers have done so well, and the children have been so fortunate. If you want to age a woman, to coarsen her skin, to make her fat and pimply, tell her to take two pints of stout a day while she is nursing her children, and that which you see in the faces of such women is the mere outward and visible sign of a change that permeates every fiber in their bodies.

My general conclusions are these,—that if you want to maintain your health you should abstain from alcoholic liquor; that every particle of alcoholic liquor you take into your system is as much poison as is a particle of arsenic; and that those who abstain will not only be exempt from a great deal of disease, but will increase their longevity in a very remarkable degree.—*Temperance Tract.*

Physical Culture of the Greeks.

[THE following paragraphs are abstracted from an article entitled, "The Age of Gymnastics," in the *Popular Science Monthly*.—ED.]

Of all the national institutions of ancient Greece which we have abolished or altered to our disadvantage, there is none whose reintroduction would be attended with greater benefits than that system of physical education which so influenced the national spirit and reacted upon the character of the representative Grecian heroes, statesmen, and philosophers, that it may be considered as the distinguishing feature of their age. At a very early period, the Greeks of Southern Europe and Asia Minor had recognized the truth that, with the advance of civilization and civilized modes of life, a regular system of bodily training must be substituted for the lost opportunities of physical exercise which Nature affords so abundantly to her children in the daily functions of their wild life. "It is impossible to repress luxury by legislation," says Solon, in Lucian's "Dialogues of Anacharsis," "but its influence may be counteracted by athletic games, which invigorate the body."

How many of the most admirable character-traits of the ancient Greeks, and how much of their success in the arena of life, may be distinctly traced to these sources of mental and physical health! Health in the widest sense of the word was, indeed, the primary characteristic of their age; for health and vigor are synonyms. The same process of adaptation that qualifies the body for the performance of athletic feats disqualifies it for the development of any morbid elements, and accelerates the elimination of effete matter from the organism. We accordingly see that, among the creatures of the wilderness whose normal condition is one of muscular vigor, disease is wholly abnormal, and premature death only the consequence of wounds or protracted famine.

"The immunity of hard-working people from the consequences of wrong or over feeding," says Dr. Boerhaave, "is a proof that nine-tenths of your fashionable diseases might be cured *mechanically* instead of *chemically*, by climbing a tree, or chopping it down, if you prefer, instead of swallowing castor-oil and sulphur-water." Physical exercise, by accelerating the circulation of the blood, stimulates the activity of all those internal organs whose functions conjointly constitute the phenomenon of life, and counteracts innumerable functional disorders, any one of which is sure to react on the nervous system and the organ of the soul.

Mental pathology, if rightly understood, is a physiological science which must recognize the intimate connection and interaction of soul and body, and the influence of every physical derangement on the most subtile functions of the brain.

The physical superiority of the ante-Alexandrian Greeks to the hardiest and most robust nations of modern times is perhaps best illustrated by the military statistics of Xenophon. According to the author of the "Anabasis," the complete accouterments of a Spartan soldier, in what we would call heavy marching order, weighed seventy-five pounds, exclusive of the camp, mining, and bridge-building tools, and the rations of bread and dried fruit which were issued in weekly installments, and increased the burden of the infantry soldier to ninety, ninety-five, or even to a full hundred pounds. This load was often carried at the rate of four English miles

an hour for twelve hours *per diem*, day after day; and only in the burning deserts of Southern Syria the commander of the Grecian auxiliaries thought it prudent to shorten the usual length of a day's march by one-fourth. The gymnastic tests applied by the *systarchus*, or recruiting-officer of a picked corps, would appear even more preposterous to the uniformed exquisites of a modern "crack regiment." Tall and well-shaped men of soundest constitution could not pass the preliminary examination unless they were able to jump their own height vertically, and thrice their own length horizontally, and two-thirds of those distances in full armor; pitch a weight equal to one-third of their own to a distance of twenty yards, and throw a javelin with such dexterity that they would not miss a mark of the size of a man's head more than four out of ten times at a distance of fifty yards, besides other tests referring to their expertness in the use of the bow and the broadsword.

Where the average physical standard was so far superior to our own, it need not surprise us that the achievements of the national champions surpassed the feats of our professional athletes in the same proportion. Polydamus, the victor of the ninety-seventh Olympiad, was able to fracture the skull of a steer with a single blow of his fist, and tamed a wild horse by catching it by the hoofs of the hind legs, which he twisted inward till the joints of the fetlocks creaked whenever the animal attempted the least rebellious movement.

Milo of Crotona, the same athlete who carried a young bull around the race-course, could not be moved from his position by a four-horse team, if he planted his left foot on the level ground, and braced his right against a slightly projecting rock; he once saved an assembly of Pythagorean philosophers when the roof of a dilapidated temple threatened to fall, by supporting the keystone of the porch with his uplifted arms till all had escaped, after which he saved himself by two rapid leaps.

A Theban gladiator, whose renown had reached the court of Persia, was invited to Sardis, the summer resort of King Darius, and on the day after his arrival entered the lists against three picked men of the "Immortal Band," as the Persian body-guard was called. A savage combat followed, in which the three Persians began to lose ground, and would have been driven beyond the lists if the fight had not been stopped by the command of the king. But his order came too late; in the few minutes which the contest had lasted, the three "immortals" had received their death-wounds.

Deerfoot, a Cherokee Indian, who was brought to England in 1758, was able to outrun the swiftest horses, if the length of the race-course did not exceed two-thirds of a mile; and during the administration of Niccolo Marcello, the inhabitants of Ravenna witnessed the feats of a young Savoyard, who repeatedly distanced the favorite racer of the doge, and offered to run against any horse in the world and for any distance, provided the direction of the race was to be more or less up-hill, not down-hill or over a sandy level. But the amateur runners of the Grecian and Roman armies frequently engaged in contests with race-horses and trained hounds without any such reservations; and Pindar sung the praises of a Rhodian athlete who could keep pace with a relay of four trotting horses, and tire them out successively.

The *hemerodromes*, or foot-couriers of ancient Greece, made from eighty to ninety miles a day, and the volunteer messenger who arrived in Athens with the news of the victory of Marathon on the night after the battle, must have run at the rate of fourteen miles an hour. Dion Chrysostomus speaks of a Thessalian patriarch who had followed the trade of a hemerodrome for upward of ninety years, having made his first trip on his twentieth birthday, and his last after the completion of his hundred and tenth year. During this long career, as his life might well be called, he had never been known to betray a trust, never was behind time, and never had been sick for a single hour.

Longevity was not the least of the benefits which the ancients derived from their health-giving exercises. The second census of Trajan furnishes some curious statistics on this subject, and shows that among the 28,000,000 inhabitants of Northern Italy, Greece, and *Magna Græcia* (Southern Italy and Sicily), there were 11,000 centenarians, 750 of whom had passed sixscore years, eighty-two their one hundred and fiftieth, and twenty their one hundred and seventy-fifth year of life, while three were double centenarians and respectively two hundred and six, two hundred and eight, and two hundred and eighteen years of age. Four brothers, of an Albanian family, had all passed their hundred and tenth year. The same census shows that, among the indolent races of Asia Minor, Egypt, and Palestine, the proportion of centenarians to every 1,000,000 of inhabitants was considerably lower and not much above the present average.

That the Hebrew psalmist's threescore and ten was not our original term of life will not be denied by orthodox readers of the Mosaic genealogies; and the ablest biologists agree

that it would be far below the normal average even now, if our manner of life itself was not wholly abnormal. It would explain the most vexing contradictions and enigmas of our existence if we could be sure that by strict observance of the health-laws of Nature the psalmist's maximum might be increased by thirty or forty years: it would amount to a satisfactory solution of the whole problem of life. Under the present condition of things our lives are mostly half-told tales, dramas ending in the middle of the first act; our season terminates before the tree of life has had time to ripen its fruits.

There was at least a theoretical consistency in the dogma of the mediæval monks who pretended to despise the pagan culture of the manly powers, and extolled self-torture, maceration, and abasement of the body, as so many Christian virtues. We cannot doubt that they reasoned from false premises; but are there not still millions of their spiritual progeny who persist in the belief that the Creator approves the marring of his image, and that "a sickly, whining wretch, who fears to walk upright or raise his eyes, lest the Deity might be offended at his want of humble contrition"—is a more pleasing sight in the eyes of God than a man like Milo, who walked earth *incessu invicti*, "with the gait of one who has not known defeat," and did not think it necessary to ruin his body in order to save his soul? "A good creed to die by," that monstrous belief is often called, just as if the sun had been created for the sake of the twilight; but it is a curious circumstance that on the eve of the long night the eyes of many of these world-despising ascetics have been opened to the significance of their mistake, and the consciousness of having wasted an irretrievable day can hardly have made its close more cheerful.

"I have sinned against my brother" (referring to his abused body), were the last words of St. Francis of Assisi, when his self-inflicted martyrdom at last brought on a hemorrhage from the lungs, which his physician told him would prove fatal.

Open-air labor is the most effective cosmetic, an almost infallible panacea against all kinds of bodily deformity. But the remedial virtue of labor, i. e., sound bodily exercise, is greater than that of open-air life *per se*, for among the rustic population of Scandinavia, Scotland, and Northern Germany, who perform a large portion of their hard work in-doors, we frequently find models of health and vigor; far more frequently than among the inhabitants of Italy, Spain, etc., who pass the greater part of their indolent lives in open air.

The pagan Greeks had discovered and divulged a secret which seems not to have been rediscovered yet by our philanthropists, viz., that the highest well-being of the body and of the soul cannot be attained separately, but must go hand-in-hand, like thought and action, or will and force. They also had found out that it is the safest plan to improve each day as it comes; they celebrated life as a festival, and their poor as well as their rich enjoyed Heaven on this side of the grave. In going along, they found time to do what we postpone to the end of the journey, which too often is never reached. The joyous love of life, of men to whom existence itself was a luxury, has therefore given way to very different moods,—sad misgivings and doubts, provoked by ever-present but never-satisfied longings. "He who has done his duty can die in peace," we are told; but is it a duty to work for such rewards? "So much labor for a winding-sheet?"

Disease from the Influence of the Passions.

BY B. W. RICHARDSON, M. D.

THE passions which act most severely on the physical life are anger, fear, hatred, and grief. The other passions are comparatively innocuous. What is called the passion of love is not injurious until it lapses into grief and anxiety; on the contrary, it sustains the physical power. What is called ambition is of itself harmless; for ambition, when it exists purely, is a nobility lifting its owner entirely from himself into the exalted service of mankind. It injures when it is debased by its meaner ally, pride; or when, stimulating a man to too strenuous efforts after some great object, it leads him to the performance of excessive mental or physical labor and to the consequences that follow such efforts.

The passion called avarice, according to my experience, tends rather to the preservation of the body than to its deterioration. The avaricious man, who seems to the luxurious world to be debarring himself from all the pleasures of the world, and even to be exposing himself to the pangs of poverty, is generally placing himself in the precise conditions favorable to a long and healthy existence. By his economy, he is being saved from all the worry incident to penury; by his caution, he is being screened from all the risks incident to speculation or the attempt to amass wealth by hazardous means; by his regularity of hours and perfect appropriation of the sunlight, in preference to artificial illumination, he rests and works in periods

that precisely accord with the periodicity of Nature; by his abstemiousness in living, he takes just enough to live, which is precisely the right thing to do, according to the rigid natural law. Thus, in almost every particular, he goes on his way freer than other men from the external causes of all the induced diseases, and better protected than most men from the worst consequences of those diseases which spring from causes that are uncontrollable.

I do not hold up this picture as an encouragement to avarice, for an avaricious world would truly be a sad one. "But there is a soul of goodness in things evil, would men observingly distill it out," and certainly, much goodness might be observed even in the perverted passion of avarice, if reckless and overgenerous men would condescend to the distillation.

Some of the most extreme instances, at all events, nay, the most typical instances, of longevity with perfect physical health that I have met with, have been in those who are tinctured practically with the passion under consideration. It is true some have not been happy, and none eminently useful; but to the physiological mind they present a remarkable picture of the endurance of health and life under what are nearest to the natural conditions necessary for both. They suggest that if with this physical standard a higher and nobler mental development could be attained, with art and science and benevolent labors as the pleasures added to the life, the approach to perfection of existence would be closely realized, and the age, not of the man only but of the world of life to which he belongs, would be more thoughtfully conserved.

EFFECTS OF ANGER.

Of the passions I have enumerated as most detrimental to life, anger stands first. He is a man very rich indeed in physical power who can afford to be angry. The richest cannot afford it many times without insuring the penalty, a penalty that is always severe. What is still worse of this passion is, that the very disease it engenders feeds it, so that if the impulse go many times unchecked it becomes the master of the man.

The effects of passion are brought out entirely through disturbance in the organic nervous chain. We say a man was "red" with rage, or we say he was "white" with rage, by which terms, as by degrees of comparison, we express the extent of his fury. Physiologically we are then speaking of the nervous condition of the minute circulation of his blood; that "red" rage means partial paralysis of minute blood-vessels; that "white" rage means temporary suspension of the action of the prime mover of the circulation itself. But such disturbances cannot often be produced without the occurrence of permanent organic evils of the vital organs, especially of the heart and of the brain.

The effect of rage upon the heart is to induce a permanently perverted motion, and particularly that perverted motion called intermittency.

One striking example, among others of this kind which I could name, was afforded me in the case of a member of my own profession. This gentleman told me that an original irritability of temper was permitted, by want of due control, to pass into a disposition of almost persistent or chronic anger, so that every trifle in his way was a cause of unwarrantable irritation. Sometimes his anger was so vehement that all about him were alarmed for him even more than for themselves, and when the attack was over there were hours of sorrow and regret, in private, which were as exhausting as the previous rage.

In the midst of one of these outbreaks of short, severe madness, he suddenly felt, to use his own expression, as if his "heart were lost." He reeled under the impression, was nauseated and faint; then, recovering, he put his hand to his wrist, and discovered an intermittent action of his heart as the cause of his faintness. He never completely rallied from that shock, and to the day of his death, ten years later, he was never free from the intermittency. As a rule he was not conscious of the intermittency unless he took an observation on his own pulse, as though he were apart from himself; but occasionally after severe fatigue he would be subjectively conscious of it, and was much distressed and depressed. "I am broken-hearted," he would say, "physically broken-hearted." And so he was; but the knowledge of the broken heart tempered, marvelously, his passion, and saved him many years of a really useful life. He died ultimately from an acute febrile disorder.

The effect of anger upon the brain is to produce, first, a paralysis, and afterward, during reaction, a congestion of the vessels of that organ; for, if life continues, reactive congestion follows paralysis as certainly as day follows night. Thus, in men who give way to violent rage there comes on, during the acute period, what to them is merely a faintness, which, after a time of apparent recovery, is followed by a slight confusion, a giddiness, a weight in the head, a sense of oppression, and a return to equilibrium.

They are happy who, continuing their course, suffer no more severely. Many die in one or other of the two stages I have named. They die in the moment of white rage, when the cerebral vessels and heart are paralyzed. Then we say they die of faintness, during excitement. Or, they die more slowly when the rage has passed and the congestion of reaction has led to engorgement of the vessels of the brain. Then the engorgement has caused stoppage of the circulation there; or a vessel has given way; or serous fluid has exuded, producing pressure, and we report that the death was from apoplexy, following upon excitement.

EFFECTS OF HATRED.

Hatred, when it is greatly intensified, acts much like anger in the effects it produces. The phenomena differ in that they are less suddenly developed and more closely concealed; they very rarely, in fact, come under the cognizance of the physician unmixed with other phenomena. They are made up of the symptoms of suppressed anger with morose determination, and they keep the sufferer from rest. He is led to neglect the necessities of his own existence; he is rendered feverish and feeble; and at last he either sinks into chronic despondency and irritability, or rushes hastily to the performance of some act which indicates disordered mind.—*Diseases of Modern Life.*

(*To be Continued.*)

Taquet on Heredity in Alcoholism.

BY CHARLES ALDRIDGE, M. D.

M. TAQUET places the abuse of spirits in the first line of causes which tend to depopulation. If the drunkard were the only sufferer by his excess, consolation would be easy; but, as Lancereaux has said, alcoholism is not only a disease of the individual, but is a family disease, and projects its evil influence upon the race. M. Rousel says: "Absorbed by a taste which quickly transforms itself into an irresistible need, one sees alcohol impregnate strongly the organism, alter the radical forces, and degrade little by little the physical and moral nature of the man. One sees it follow the individual in his offspring, his family receiving from him a fatal heritage in debility, deafness, a crowd of nervous disorders, moral imbecility, idiocy, mental alienation, and wicked instincts. The Indians of America have disappeared before the destructive powers of alcohol, when fire and sword failed to vanquish them. Nor is this fact new in history, for the legislation of Lycurgus favored drunkenness in the conquered, in order that their healthy aspirations might be dulled, and that they might the more easily submit to slavery."

In alcoholism, as in all affections which are transmitted from ancestors to descendants, we may recognize the heredity of similitude, as well as the heredity of change. The heredity of similitude presents itself in two aspects. It remains latent, and requires the influence of example and circumstance to awaken it, or it may burst forth in a sudden manner without seeming cause. Esquirol reports a case where the death of a grandfather and father had quickly followed their thirst for drink, in which the little son at five years of age showed a decided taste for the same kind of drink. M. Taquet knows of a case where a person died early from alcoholic excess, leaving an infant, who at a very early age showed a decided tendency to intemperance, until now, at maturity, he has developed a partiality for the same drink which his father loved.

Fusch speaks of a dissolute drunkard who came to his end after having plunged his family into profound misery; two of his sons early presented the same vice, and the third, after remaining sober until his thirtieth year, suddenly drank in a violent way. Of suicide associated with alcohol, the history of the family Dufray presents an interesting example. It consisted of four brothers, who were addicted to the most excessive drunkenness and licentiousness. The eldest drowned himself, the second hanged himself, the third cut his throat, and the fourth threw himself from a third story and was killed. Drunkenness is a complex state, being generally accompanied by physical or nervous disturbances, as will be seen in the following examples:—

Observation I.—The head of the family was a drunkard and debauchee. His wife was remarkably sober, although the daughter of a drunken father, and sister to two youths who both had inherited their father's vice. Of this marriage were born three boys and two girls.

1. The eldest is as immoral as his father, and presents an organic lesion of the heart. He married a wife who seems to offer nothing abnormal. They had three children, two girls and a boy. The eldest manifested violent sexualism at an early age, and gave birth to a hydrocephalic child to an unknown father. The second girl is almost as dissolute as her sister, and the boy is quite imbecile, epileptic, and a drunkard.

2. The second son has been treated twice, in an asylum, for mania with homicidal impulses.

3. The third son, after an existence of debauchery and pleasure, died at the age of twenty-one years, of consumption, hitherto unknown in the family.

4. The eldest of the girls has been married for twelve years to a sober, intelligent man. Out of six of their children, the heredity has fallen upon one, who is drunken, licentious, and a thief.

5. The youngest daughter has lost all moral sense and decency, leading a most irregular life, although well married.

This observation presents two interesting considerations; viz,—

1. Sexual desires show themselves early in the children of drunkards, and are associated with an absence of moral sense.

2. Phthisis, when not hereditary, is capable of being produced by spirituous excess. Magnus Huss and Launy have supported this thesis by numerous examples.

Observation II.—The father died of cerebral softening, determined by alcoholic excess. The mother died of ascites; cause unknown. The result of this marriage was one daughter, who married a man who has no trace of hereditary disease. They have had six children: 1. An idiot, born blind; 2. An imbecile; 3. An imbecile; 4. Imbecile and born blind; 5. Well gifted, morally and physically; 6. Born an idiot. Here we find the evil influence passing over the immediate descendants and attacking in various ways the next generation.

Observation III.—The grandfather was a drunkard, which is all that is known of him. His wife died of cancer; an only son, a rough and violent fellow, died of alcoholism in an asylum for the insane. The son of this latter was of an extremely impressionable nature, not able to bear the sight of any cutting instrument, and was liable to be thrown into a state of nervous excitement at the sight of a soldier or an armorer's shop. He married, and since has had an attack of mania, during which he attempted suicide. He has had three children, of whom the eldest died soon after birth; the second, not yet two years old, presents nothing worthy of notice; the third was hydrocephalic, and died in convulsions. . . . .

Of all the manifestations of alcoholic heredity, epilepsy is believed to be the most important and the most common. Of ninety-five epileptics examined, M. A. Voisin found twelve who had scrofulous and true tubercular antecedents; twelve had ancestors who died from alcoholic excess, or were subject during their honeymoon to excessive abuse of alcohol. Marcet reports of a drunkard who had sixteen children, that five were dead and the remainder epileptic. One, G., who was proved to have been in a state of constant drunkenness for some time, had a child born to him, who from its youngest infancy had convulsions, and is now a confirmed epileptic. We believe that convulsions in infancy are neither more nor less than incomplete signs of epilepsy, and that they predispose singularly to mental alienation. Van Swieten has said, with reason, that perhaps there is not a lunatic who has not had convulsions in his infancy.

One other accidental consequence of drunkenness is that it diminishes the elements of vitality in the child, so that it comes into the world with but half an existence, so that the least blast falling upon it will prevail. . . .

The children of drunkards are not all of necessity idiots, lunatics, or epileptics, but there are few that present nothing abnormal; and in those of seeming freedom the germ may be late in developing itself. It is not rare to find precocious cerebral excitement displaying itself most frequently in a good memory. They are parrot-like, and display a remarkable aptitude for some particular pursuit. It will, however, often be found that they do not fulfill the promise of their early years, seeming to have produced in their youth all of which their organization is capable. Some find their way early to the jail, others are eccentric in all their ways and beliefs, and constitute the class of pretentious imbeciles. Nature would seem to have a horror of the anomalies and monstrosities that alcoholism induces, so that it often rejects from the womb. Darwin tells us that the families of drunkards become extinct in the fourth generation, after having descended through the scale of physical and intellectual degeneration.

Dr. Taquet concludes by remarking that the children of drunken parents are more liable to attacks from prevailing epidemics, and sink under them sooner than other people.—*London Medical Record.*

A Useful Innovation.—A London journal mentions the fact that Miss Dodds, of the Edinburgh School of Cookery, recently gave a lecture to more than one hundred medical students on "Sick Room Cookery," which was sensible and successful. It is well for the people that physicians are giving more attention to dietetics.

Irrational Practice.

BY DR. W. J. FAIRFIELD.

AT the last session of the Calhoun County Medical Society, Dr. Phelps presented before the Society a man suffering from partial paralysis of his right arm, caused by a wound in the hand, from which the principal nerves of the arm were involved in inflammation. At the time of receiving this wound, he also received a slight bruise on the shoulder. Dr. Phelps saw the man soon after the injury, and was treating the case with success, when a traveling quack came along, who, by his brilliant advertisements, attracted the attention of the patient and led him to think there was a quicker way of curing his arm. He claimed that the shoulder was dislocated. After manipulating the joint a moment or two, it was pronounced restored to its proper place, and the patient was assured that there would now be a rapid recovery of the full use of the arm.

After Dr. Phelps had given the history of the case to the Society, a committee of three was appointed to make a careful examination of the case. The committee reported that they could find no evidence whatever of there having been a dislocation of the shoulder, and that the paralysis was undoubtedly the result of the wound in the hand.

Such cases as these are of every-day occurrence. There are men who are devoted to humbugging the public, and knowing the people's weakest point, assume to be devout disciples of Esculapius, and thus go from one place to another deceiving the people and often receiving unmerited praise and credit for causing a malignant tumor to disappear, or curing consumption, or Bright's disease of the kidneys, or some very obscure and difficult disease, when the regular physician, with all his preparatory study, observation, and experience, is not able in any of the so pronounced cases to detect the disease diagnosed and so readily cured by the quack.

Is it a grave charge against the regular physician, that he does not give tolerance to such practice, but uses his influence against it? Yet he is charged with being bigoted, egotistic, and narrow in his views, because he denounces anything but the rational practice. What class of medical men, regulars or irregulars, are making the greatest advancement in scientific medicine? To whom is due the modern advances in sanitary knowledge, the new light on the causes and nature of many of our most prevalent diseases, and the best means of preventing the same? Is it not all, or nearly all, due to the indefatigable labors of men of the "regular" school of medicine?

The physician fills a very important and responsible position, and he should be thoroughly honest, and worthy of all confidence. Every true physician labors to elevate the standard of his profession, and in no case will he swerve from principle and right, to pander to ignorance and superstition, or to satiate the desire for pecuniary success.

How Drowning Persons Die.

DR. ROGER S. TRACY contributes to the *Popular Science Monthly* an article on drowning in which he announces some new facts. They are certainly of interest, especially since they give every evidence of being well-founded. We quote the following:—

"When cold water is sucked into the lungs and comes in contact with their delicate and sensitive mucous membrane, it must cause an instant and powerful contraction of the capillaries, and obstruct the current of blood from the right side of the heart, thus indirectly damming back the venous blood in the brain. This state of things brings on unconsciousness rapidly, preceded by the pleasurable tingling sensations, rapid succession of ideas, and flashes of light and color, so often described by persons who have been rescued from drowning.

"Drowning persons, then, die in different ways:—

"1. By syncope, and asphyxia while unconscious. Some of these die instantly.

"2. By apoplexy (usually congestive), common in plethoric and aged persons, followed by asphyxia while unconscious.

"3. By asphyxia pure and simple.

"Deaths which come under the first two heads are rapid and painless, constituting probably a half, and, according to Taylor, three-quarters of all deaths by drowning.

"Deaths which come under the third heading we presume are not accompanied by physical suffering, for these reasons:—

"1. Persons who have been resuscitated after having become unconscious, declare that they have felt no pain whatever.

"2. Death is speedy.

"3. Persons who lose their presence of mind are so occupied with their struggles and mental agony that a slight degree of physical pain would be unnoticed.

"4. Swimmers, and persons who do not lose their wits, become so exhausted and

chilled that, when the final act comes, their powers make but a feeble resistance. And, in both cases, the passage of water into the lungs tends to bring on insensibility by obstructing the circulation, before it is time for the agony of asphyxia to be felt.

"So that, in drowning, we have reason to believe, contrary to Taylor's opinion, that pure, uncomplicated asphyxia never occurs.

"If death by drowning be inevitable, as in a shipwreck, the easiest way to die would be to suck water into the lungs by a powerful inspiration, as soon as one went beneath the surface. A person who had the courage to do this would probably become almost immediately unconscious, and never rise to the surface. As soon as the fluid filled his lungs, all feelings of chilliness and pain would cease, the indescribable semi-delirium that accompanies anæsthesia would come on, with ringing in the ears and delightful visions of color and light, while he would seem to himself to be gently sinking to rest on the softest of beds, and with the most delightful of dreams."

Living without Food.—Life can be maintained without food much longer than many people suppose. Indeed, it seems to be a general supposition that a person will die in two or three days when deprived of food entirely. Numerous instances prove the contrary, however, and the following facts are corroborative evidence of the same sort:—

"It is true that many chronic diseases all the world over arise from eating too much. But it is possible, on the other hand, to eat too little; and we doubt whether many could maintain a healthy existence on the meager diet of such medical philosophers as the celebrated Cornaro. How long one could contrive to live without eating at all is a question of which few will be inclined to undertake the practical solution. Unfortunately, it has been solved over and over again in the case of many an accident and many a deed of cruelty. Without something to eat or drink, man will not live beyond a few days, or at most a week. Access to water, however, makes a great difference. There is a well-known case of an Ayrshire miner who lived twenty-three days buried in a coal mine, without swallowing anything but very small quantities of chalybeate water sucked through a straw. He had the advantage of being shut up in a contaminated atmosphere, which, by diminishing nervous sensibility, lessened the cravings of hunger.

"Even more remarkable examples of prolonged abstinence might be given. Persons, indeed, have been found in coal pits and mines, and in other situations where there was not a mouthful of food, but where water was to be had, as long as six weeks after their seclusion, still alive, though of course in a very feeble state; and a small daily allowance of food has supported life longer even than that, as in some cases of shipwreck and other accidents at sea. Berard quotes the example of a convict who died of starvation after sixty-three days; but in this case water was taken. Cases of alleged fastings longer than this are certainly in most cases due to imposture. The insane appear to bear fasting better than those in their sober senses, and in some morbid conditions of the body persons may certainly live without nourishment for a surprising length of time.

"Animals have an advantage over man, so far as living without food is concerned. Rattlesnakes exist many months without eating anything, and retain all their vigor and fierceness; and many creatures voluntarily spend four, five, or six months in every year without eating or drinking. The tortoise, bear, dormouse, and other animals, retire at their seasons to their respective cells and hide themselves—some in caverns of rocks and ruins, others in holes under the ground, while some get into woods and lay themselves up in the clefts of trees. What a fine piece of economy it would be if a man in dull times could just curl himself up and take a long nap like these inferior animals!"

Keeping Clean.—The following paragraph recommends a practice good at any season of the year if the sleeping-room is sufficiently warm to prevent chilling, and especially important in the summer:—

"Have always a pint or quart of water in the sleeping-room. In the morning after washing and wiping hands and face, wet with the hands every part of the body. Cold water will not be disagreeable when applied with the bare hands. Wipe immediately; follow by brisk rubbing over the body. The whole operation need not take over five minutes. The result of this wash is, the blood is brought to the surface of the skin, and made to circulate evenly through the body. You have opened the pores of the skin, allowing impurities in the body to pass off, and have given yourself in the operation a good, vigorous morning exercise. Pursue this habit regularly, and you will seldom take cold."

LITERARY MISCELLANY.

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

THE STATUE.

In Athens, when all learning centered there,
Men reared a column of surpassing height
In honor of Minerva, wise and fair,
And on the top, that dwindled to the sight,
A statue of the goddess was to stand,
That wisdom might obtain in all the land.

And he who, with the beauty in his heart,
Seeking in faultless work immortal youth,
Would mold this statue with the finest art,
Making the wintry marble glow with truth,
Should gain the prize. Two sculptors sought the fame;
The prize they craved was an enduring name.

Alcamenes soon carved his little best;
But Phidias, beneath a dazzling thought
That like a bright sun in a cloudless west
Lit up his wide, great soul, with pure love wrought
A statue, and its face of changeless stone
With calm, far-sighted wisdom towered and shone.

Then to be judged the labors were unveiled;
But at the marble thought, that by degrees
Of hardship Phidias cut, the people railed.
"The lines are coarse; the form too large," said these;
"And he who sends this rough result of haste
Sends scorn, and offers insult to our taste."

Alcamenes' praised work was lifted high
Upon the capital where it might stand;
But there it seemed too small, and 'gainst the sky
Had no proportion from the uplooking land;
So it was lowered and quickly put aside,
And the scorned thought was mounted to be tried.

Surprise swept o'er the faces of the crowd,
And changed them as a sudden breeze may change
A field of fickle grass, and long and loud
Their mingled shouts to see a sight so strange.
The statue stood completed in its place,
Each coarse line melted to a line of grace.

So bold, great actions, that are seen too near,
Look rash and foolish to unthinking eyes;
They need the past for distance to appear
In their true grandeur. Let us yet be wise,
And not too soon our neighbor's deed malign,
For what seems coarse is often good and fine.

—*Henry Abbey.*

—No process is so fatal as that which would cast all men in one mold. Every human being is intended to have a character of his own, to be what no other is, to do what no other can do.

A Lesson for the Times.

NUMBER ONE.

BY MRS. E. G. WHITE.

There is but one standard of right in the world, and that is God's standard. We are all virtually under equal obligations to meet that high standard; and God holds us alike responsible to him. Society may set up artificial differences and regulations, but the fixed fact remains the same. Men require women to live up to a standard of purity almost equal with that of the angels, while they erect a standard of quite a different character for themselves.

Young men sit down to wine suppers, freely indulge their appetites for intoxicating drink and for tobacco, become reckless in their deportment, vulgar and turbulent in their conversation, and frequently seek low and debased society, excusing themselves under the plea of custom and the ways of the world. But should young ladies follow such a course of dissipation they would be utterly and forever disgraced in the eyes of the whole world.

But it is urged, "Oh, young men must sow their wild oats." This is a terrible fallacy. It should be borne in mind that "whatsoever a man soweth, that shall he also reap." Young men who have plunged into dissipation are already reaping what they have sown. They do not have to wait for mature years to come before they realize that they must pay the penalty for every violation of moral law. Every day we see instances of young men who are debilitated in body and mind, whose morals are debased, and who are prematurely dying because they have transgressed Nature's laws, and fallen victims to the temptations which the fashions of the world hold out to them.

The law of Nature is the law of God; and the penalty of its transgression is visited alike upon men and women. It is not customary to hold fathers equally responsible with mothers for the training of their children. How many sermons are preached, and how much is written concerning the mother's responsibility; while the father is apparently relieved from all the burden. We would appeal to fathers, in the hope of arousing them to a

sense of their God-given responsibility in regard to their children. We would say, Guard yourselves from cherishing any pernicious habit which, by its influence, might have a direct or indirect tendency to weaken the moral susceptibilities of your children.

While the mother may be doing her whole duty in educating her children to purity of life, the father too frequently, by his own example, may be opening the door of temptation to his children. His indulgence in wine and tobacco, and other sinful practices, lessen the hideousness of sin in their eyes. In keeping with this immoral course, is the talk that many fathers indulge in before their children, to the effect that the law of God is no longer binding upon man; that it was only for the government of the Israelites; or that it was abrogated at the death of Christ. Intelligent youth are not long in comprehending that where there is no law there is no transgression. The wholesome fear of breaking the commandments of God, grows weaker and weaker in their minds, until the moral perceptions, which have been carefully trained by the mother, grow to be in harmony with the father's sentiments.

If men strictly and conscientiously kept the law of God, there would be no drunkards, no tobacco inebriates, no distress, penury, and crime. Liquor saloons would be closed for want of patronage, and nine-tenths of all the misery existing in the world would come to an end. Young men would walk forth with erect and noble forms, free and elastic step, clear eye, and healthy complexions.

When ministers, from their pulpits, make loyalty to the law of God disreputable; when they join with the world in making it unpopular; when these teachers of the people indulge in the social glass, and the defiling narcotic, tobacco,—what depth of vice may not be expected from the youth of this generation? The newspaper records of the day, with their annals of crime, murders, and suicides, give the answer, and point out the terrible dangers of the time.

The signs exist to-day which prophecy predicted would characterize the state of society just prior to the second coming of Christ. You have heard much in regard to the authority and sanctity of the law of the ten commandments. God is the author of that law, which is the foundation of his government in Heaven and on earth. All enlightened nations have based their laws upon this grand foundation of all law; yet the legislators and ministers, who are recognized as the leaders and teachers of the people, live in open violation of the principles inculcated in those holy statutes.

Many ministers preach Christ from the pulpit, and then do not hesitate to benumb their senses by wine tippling, or even indulging in brandy and other liquors. The Christian standard says, "Touch not; taste not; handle not;" and the laws of our physical being repeat the solemn injunction with emphasis. It is the duty of every Christian minister to lay this truth plainly before his people, teaching it both by precept and example.

The Bible nowhere teaches the use of intoxicating wine, either as a beverage or as a symbol of the blood of Christ. We appeal to the natural reason whether the blood of Christ is better represented by the pure juice of the grape in its natural state, or after it has been converted into a fermented and intoxicating wine. We maintain that the former is the only symbol properly representing the sacred blood of Christ, and a symbol established by himself; and we urge that the latter should never be placed upon the Lord's table.

It has been declared by some that Christ favored the moderate use of fermented wine, in witness whereof they refer to his miracle of changing water into wine. But we protest that Christ never made intoxicating wine; such an act would have been contrary to all the teachings and example of his life. He was the Angel who led the children of Israel in the wilderness. He spoke the law from Sinai. He prohibited those who officiated in holy office from using wine; and his reasons for so doing are explicit; viz., that they may have clear judgment to distinguish between the common and the sacred, to do justice to the fatherless and widows, to teach his statutes and laws to Israel, and to accept no bribes. Those who abolish the law of God for the sake of getting rid of the Sabbath, do away with the most solemn restrictions against using liquor.

He who appeared to the wife of Manoah, and told her she should bear a son, and described his character for strength, and charged her to drink no wine or strong drink, for the child should be a Nazarite from his birth; He who appeared to Zacharias, and gave him directions regarding the unborn John, charging him that the child should drink no wine or strong drink, was not one who would make intoxicating wine and give it to the people upon a wedding occasion. The wine which Christ manufactured from water by a miracle of his power, was the pure juice of the grape. And the object of the Saviour, in this miracle, was to bring the perverted taste of the governor of the feast to a healthy

condition, by inducing him to acknowledge that this wine was superior in quality to any he had before tasted.

There are those in our day, who, in order to excuse their own sins, follow the example of the Jews, and charge Christ with being a Sabbath-breaker and wine-bibber, notwithstanding he declared that he kept his Father's commandments, and his whole life was an example of temperance and self-denial. Had he been a wine-bibber he could not have been a perfect offering, and the virtue of his blood would have been of no avail. But this charge, as well as the former, is best refuted by the character and teachings of Christ himself.

The Christian church is pronounced to be the salt of the earth, the light of the world. Can we apply this to the churches of to-day, many of whose members are using, not only the defiling narcotic, tobacco, but intoxicating wine, and spirituous liquor, and are placing the wine-cup to their neighbor's lips? The church of Christ should be a school in which the inexperienced youth should be educated to control their appetites, from a moral and religious standpoint. They should there be taught how unsafe it is to tamper with temptation, to dally with sin; that there is no such thing as being a moderate and temperate drinker; that the path of the tippler is ever downward. They should be exhorted to "look not upon the wine when it is red," which "at the last biteth like a serpent, and stingeth like an adder."

Truth and Error.

In general, truth and error do not differ so much as most people are apt to suppose. They are not always so diametrically opposed to each other in fact as we hold them in our conceptions. If the opposite of this were true, most of the confusion and disagreement in the world respecting truth and error could not exist; all would discriminate alike. The following paragraphs from an address by Professor Joseph Le Conte, contains some very excellent thoughts on this subject:—

"All vexed questions are such, because there is truth on both sides. Unmixed error does not live to plague us long. Error lives only by virtue of a contained germ of truth. In all vexed questions, therefore, there are three views; viz., two opposing, partial, one-sided views, and a third, more rational and comprehensive, which combines and reconciles them.

"I can best illustrate this by the familiar story of the fabled shield. You well remember how, in the good old times of knight-errantry, this shield was hung up in the sight of all men in token of the fact that the owner challenged the world to mortal combat. You well remember that the shield having been seen by many knights, these knights, on comparing notes, could not agree as to its color, some declaring that it was *white*, and some equally certain that it was *black*. You well remember that after many lances had been splintered, after many broken heads and bloody noses had been endured in the vain attempt to settle this *vexed question*, by the blundering logic of blows and knocks, as was the fashion in those days (alas! do we not even now settle many questions in the same way, only we call the process now, the "*logic of events*")—after, I say, many blows had been given and taken in the sacred cause of truth, some one who, strange to say, had something of the spirit of science, and who, therefore, thought that truth was to be discovered, not by conflict, but by *observation*, proposed that the shield be examined. The result you all know,—*one side was white and the other was black.*

"Now, do you not observe that both parties in this dispute were right and both were wrong? Each was right from *his* point of view. Each was wrong in excluding the *other* point of view,—in imagining *his* truth to be the *whole* truth. And do you not observe also that the true view combined and reconciled the two partial views? There is an old adage that "truth lies in the middle," between antagonistic extremes. Now, while there is a kind of truth in this adage, yet, as usually understood, I believe it contains a most pernicious error. It is the favorite adage of the timid man,—the trimmer, the time-server, the politician, the fence-man. Suppose there had been present on this occasion one of these fence-philosophers. He would have reasoned thus: "These gentlemen are of equal intelligence, equal veracity, and equal *strength* (a most important element in making up an opinion for these fence-men); the one says the shield is white and the other says it is black; now, truth lies in the middle: therefore I conclude that it must be a kind of gray or neutral tint, or perhaps a sort of *pepper-and-salt.*" Do you not observe that of all the crowd he is the only one who has absolutely no truth in him? No, gentlemen; truth and rational philosophy is not a mere *mixture* of opposing views—truth is *not* what our English friends might call a philosophic "'alf-n'alf." It is rather to be sought in a more comprehensive view, which combines

and reconciles opposing partial views—it is a stereoscopic combination of *two* partial surface views into *one* objective reality."

Misspent Energies.

MEN do not attach a steam-engine to remove a straw, nor attempt to run a cotton factory with a foot-treadle. No boy would be so foolish as to use a cable for a kite-string, nor would his father expect to tether a restive horse with a cotton twine. But we are all wasting our energies from day to day in divers ways differing from extremes like the above only in degree; in ways, which, if concentrated upon a few things, instead of being distributed over all our activities, would make sufficient cause to send us all to the mad-house.

In doing a thing there are several things to be considered; as the resistance to be overcome; the strength we have, and whether, if we are able to do it, the necessary exertion is not better reserved for something else. A man may be able alone to get a barrel of flour up stairs, or a heavy coal stove, or to pull on a pair of boots a size too small, and keep a bottle of liniment by him a week after as a consequence. A woman with an armful of bundles, or a heavy baby, may succeed in overtaking a horse-car ten rods ahead, and pay for her triumph by the "heart-beat," vertigo, or something worse, for days after. She may take up, whip, and put down half a dozen carpets, in addition to the spring scrubbing and the general housework, as some ambitious workers do; but it is probable that such misspent force will result in the introduction of a step-mother into the family before long.

We know a family that for two generations had drawn all the water for household use by a well-sweep nine and one-half rods distant, when there was no good reason at all to prevent a well from being dug at the house and the water drawn by a pump. We have known a skillful wall-layer, whose labor was in constant demand, to work by the week cutting up old stumps for his winter fuel, when he could have bought twice the amount of cut fire-wood with the money he could have earned in the time. Indeed, it is easy enough to see that most people, except ourselves, are wasting much time, and often doing much damage, by misdirecting their physical powers. It is a waste to use more force than is necessary, as when a man works with dull tools; and it is equally a waste to work till the novelty is gone, then leave the thing to its own destruction, as in tending a garden well for six weeks in the spring, then letting the sprouting weeds do the rest of it.

But it is not in the expenditure of physical energy alone that there is a waste of power. We are quite as prodigal of mental and moral forces, and have fewer admonitions to lead to reform. We waste words enormously. We surround what is important or proper to say with little nothings, so that the main thing is often lost entirely. A gabbler is not a good conversationalist; it is not by the use of a sea of words that a man is convinced. Books are too wordy; sermons are too wordy; public speakers are by far too verbose. It may, indeed, be true, that in cases cited, words are largely substituted for mental force; still, a waste is no less certain.—*Providence Journal.*

Roundabout Ways of Hearing.

THE senses are the gateways through which the soul has communication with the external world. Shut them all up, and it would be utterly ignorant of the very existence of such a world. Close any one of them, and the physical phenomena with which we become acquainted through it cease to have an existence for us. Without the eye, it is absolutely impossible that we should have any knowledge or conception of color; we could only imagine it as having some analogy to other sensations essentially different, like the blind man who thought that red must resemble the sound of a trumpet.

The telephone has been the means of awakening a general interest in the phenomena of sound. All sounds, as we know, are produced by vibrations in the air, the infinite variety in pitch and tone and quality being the result of differences in the number, intensity, and combination of these air-waves. The vibrations of the sounding body are transmitted through the air to the drum of the ear, which is a membrane like that used in the telephone to take up the vocal vibrations; and then through the bones and fluids of the ear the impulses are sent on to the nerve, the brain, and the mind. There are cases in which the drum, for one reason or another, does not perform its office; yet the rest of the auditory apparatus may not be seriously disordered. Now, there is a passage from the cavity of the drum to the throat, known as the Eustachian tube. Its main purpose seems to be to regulate the pressure of air in the cavity; but under certain circumstances it serves to convey sound to the inner ear.

Writers on physiology record instances in which persons who could not hear through the external ear were enabled to do so through

the mouth. Scott, in "The Lady of the Lake," describes his heroine "with lips apart in listening mood." We are not to assume that it was necessary for her to open her mouth in order to hear, but in the cases just mentioned hearing was possible only through the open mouth. It is said that some deaf persons have been made to hear by "placing the rim of the crown of a hat in the mouth, and holding the hollow part toward a speaker." The hat served to collect the sound-waves, like an ear-trumpet. It has been suggested, but we do not know whether the suggestion has been carried out, that Eustachian trumpets for persons partially deaf might be constructed, the little end to be held in the mouth as that of an ordinary ear-trumpet is placed in the ear.

Another roundabout way of hearing is by means of the teeth. Master Mace, the author of "Music's Monument" (published in 1676, and "a most delectable book," as Dr. Burney calls it) availed himself of this mode of hearing after he had become deaf. He tells us that, having invented a lute, which was "absolutely the lustiest or loudest lute that I ever yet heard," he was able to hear it "in a very good measure, yet not so loud as to distinguish everything I play without the help of my teeth, which, when I lay close to the edge of it, I hear all I play distinctly." In such cases, the vibrations are transmitted by the teeth to the bones of the head, and thus to the inner ear and the auditory nerve. Bone is an excellent conductor of sound. Sounds that are very harsh and grating set the teeth "on edge," as we say, or make them vibrate disagreeably.

A simple experiment illustrates the transmission of sonorous sounds by the teeth, and also shows that solid bodies convey feeble vibrations better than the air. Lay a watch face downward on a table, and stand so far from it that you cannot hear the ticking. Now let one end of a wooden rod rest on the back of the watch, and grip the other end with the teeth; close the ears with the fingers to exclude other sounds, and the beat of the watch will be distinctly audible. Other sounds may be conveyed in the same manner. If one end of a very long rod be placed on a piano, and the other held between the teeth, one can distinguish the tune played though his ears be stopped.

That the sound is transmitted better through solids than through the air is shown by the old experiment of suspending a poker or an iron bar by a cord held with the teeth. If the iron be struck, the sound will appear louder than when heard in the ordinary way. Engineers, when they suspect a leakage or other mischief inside the cylinder of a steam-engine, sometimes put a small piece of iron between the teeth, press it firmly against the outside of the cylinder, and close the ears; when the sounds produced within become clearly audible.—*Boston Jour. of Chem.*

Courtesy among Animals.

FRANCIS P. COBBE, in an article describing the abuse which the women of the lower class in England suffer from their husbands, asks the following question:—

"What reason can be alleged, in the first place, why the male of the human species, and particularly the male of the finest variety of that species, should be the only animal in creation which maltreats its mate, or any other female of its own kind?"

The writer adds the following in a footnote:—

"Mr. Darwin gives a sad picture of amphibious conjugal life: 'As soon as a female reaches the shore ("comes out," as we should say, in "society"), the nearest male goes down to meet her, making meanwhile a noise like the clucking of a hen to her chickens. He bows to her and coaxes her, until he gets between her and the water so that she cannot escape him. Then his manner changes, and with a harsh growl he drives her to a place in his harem.' What an 'o'er true tale' is this of many a human wooing, and of what comes later; the 'bowing and coaxing' first, and the 'harsh growl' afterward! I am surprised that Mr. Darwin did not derive from it an argument for the descent of man from the seal.

"It is very instructive to watch the behavior of a big male dog undergoing the experience which is understood to surpass the limits of a man's endurance; namely, being 'nagged' by a little vixen who stands opposite to him in an attitude exactly corresponding to the 'arms akimbo' of her human prototype, and pours out volleys of barking which would, obviously, in the police courts be reported as 'abusive language.'

"The much-tried dog—let us say a retriever or Newfoundland, who could annihilate his little female assailant—a toy terrier or Pomeranian, perhaps—in two mouthfuls, and who *would* do so in the case of any enemy of his own sex—always on these occasions starts aside with well-feigned surprise, as if astonished at the reception of his advances, lifts his ears as a gentleman raises his hat, and presently bounds away lightly: 'I beg your par-

don, madam. I am the last dog in the world, I assure you, to offend a lady!'

"Be it noted that if the dog had retreated before the bullying of another male dog, he would have slunk off with his tail between his legs, ashamed of his own poltroonery. But from the female termagant he retires with all the honors of war, and with his tail held aloft like a standard; quite conscious that he is acting as becomes a dog and a gentleman."

Workers Underground.—It is not generally known to what extent we are indebted to worms for the productiveness of our gardens and fields. It has been found by a series of experiments carried out by a German naturalist, that the tunnels made by worms into the earth are frequently of much service to plants whose roots occupy the channels that have thus been made. The mold of our gardens, and fields too, is improved to an almost inconceivable extent by the burrowings of these humble insects. Each worm in less than a week passes through its own weight in mold, and the soil thus produced is fine and light, and extremely helpful to the growth of plants. When it is remembered that there are in every acre some thirty-four thousand worms, and that in addition to forming every day about thirty-seven pounds of fine mold, they open up the subsoil and render it fertile, we shall gain some slight conception of our indebtedness to these apparently insignificant and generally unthought-of little workers.

Jews and Sewage in a "Pi."—A scientific journal gives the following account of a curious blunder which occurred in an English newspaper in which the printer made a sad mixture of an address on the conversion of sewage into lime and cement with a report of a meeting for the conversion of the Hebrews to Christianity:—

"The chairman, after the meeting had been opened with prayer, explained that the conversion of the Jews was one of the greatest works that could engage the attention of our sanitary authorities. Filtration was the most perfect method that could be adopted for purification, but a filter had its limits. There was a popular notion that the sewage contained a vast amount of wealth, but the sludge must be taken out of it for purposes of irrigation, as it otherwise choked the pores of the land, and they were a wandering race spread over the whole face of the habitable globe.

"They were denied the illimitable blessings of Christianity, which might be counted by thousands of tons per annum allowed to run to waste, when, by a judicious admixture of lime and clay, the benighted Hebrews who sat in darkness might easily be converted into lime and cement for building purposes, and if thus deodorized, after being first dried and burned in a kiln, this ancient race would once more take its proud position among the nations of the world.

"Subscriptions were earnestly solicited for the purpose, though he (the speaker) disclaimed any idea of making a profit out of the process; and, in conclusion, he urged increased efforts in the good work, showing that, thus deodorized by a very novel process of evangelization in large tanks constructed for the purpose, the grateful Hebrews might flow over the land without injury to vegetation, while the expense of conversion, which was progressing as rapidly as the best friends of Christianity could wish, would be more than repaid by the sale of the phosphate of lime and valuable cement for building purposes."

Let it Slide.—A Hint.—A very bad habit, either in recitation, declamation, or public speechification of any kind, is the stopping and going back to pick up and correct trivial blunders, which have been only slips of the tongue How many of our first-class actors do you suppose ever recited Shakespeare in strict accordance with the text? And yet you never hear one of these people hesitating for a lost or misused word.

Parson Moses, of Rockfield, preached one Sunday morning from the parable of the two builders, one of whom built his house upon a rock, and the other upon the sand. As he warmed up in the application of his text to the affairs of every-day life, he became eloquent, and somewhat diffusive. At length, in the order of his discourse, he carried away the wrong house. "The rains beat, the floods came, and the winds blew upon that house which the man had built upon a rock, and it fell, and great was the fall thereof!"

"Father," said a grown-up boy, on the way home from church, "do you know what a funny mistake you made in your sermon this forenoon? You blew down the wrong house, —the house that was built on a rock."

"Yes, I knew it the moment the words had escaped me."

"And why did n't you correct it?"

"Ah, my son, I made a mistake in carrying away the house on the rock, but I did *not* make a mistake in not stopping to correct it. Had I stopped and gone back and reset the house on the rock, and knocked over the one

on the sand, it would have been a botch. One of the houses was gone, and that was all-sufficient for my subject. Few, I think, detected the error. And this leads me to say, my son,—If you ever come to public speaking, and find you have made one of those trifling mistakes of simple transposition, let it slide, and leave it for somebody else to discover. If they discover it, they will understand without your aid,—if they do n't discover it, it cannot matter one way or the other."—*Sel.*

Seven Wonders of the World.—The seven wonders of the world were, 1. The Egyptian pyramids. The largest of these is 603 feet square and 469 feet high, and its base covers 11¼ acres of ground. 2. The Mausoleum, erected to Mausolus, a king of Caria, by his widow, Artemisia. It was 63 feet long and 35 feet high. 3. The temple of Diana at Ephesus. This was 425 feet in length and 220 feet in breadth. 4. The walls and hanging gardens of Babylon. These walls are stated by Herodotus to have been 87 feet thick, 350 feet high, and 60 miles in length, and the statement is deemed credible by modern antiquarians. 5. The Colossus of Rhodes. This was a brazen statue of Apollo, 150 feet in height, standing at the mouth of the harbor of Rhodes. 6. The statue of Jupiter Olympus, at Athens, which was made of ivory and gold, and was wonderful for its beauty rather than for its size. 7. The Pharos of Ptolemy Philadelphus. This was a light-house 500 feet high, on the island of Pharos, at Alexandria, in Egypt. A fire of wood was kept burning on its summit during the night to guide ships to the harbor.

Difficulties in Life.—The following paragraphs from Jeremy Taylor portray in a graphic manner the natural causes of human difficulties :—

"Whoever was to be born at all, was to be born a child, and to do before he could understand, and be bred under laws to which he was always bound, but which could not always be exacted ; and he was to choose when he could not reason, and had passions most strong when he had his understanding most weak, and was to ride a wild horse without a bridle, and, the more need he had of a curb, the less strength he had to use it; and, this being the case of all the world, what was every man's evil became all men's greater evil, and though alone it was very bad, yet when they came together it was made much worse; like ships in a storm, every one alone hath enough to do to outride it; but when they meet, besides the evils of the storm, they find the intolerable calamity of their mutual concussion, and every ship that is ready to be oppressed with the tempest is a worse tempest to every vessel against which it is violently dashed.

"So it is in mankind : every man hath evil enough of his own, and it is hard for a man to live soberly, temperately, and religiously ; but when he hath parents and children, brothers and sisters, friends and enemies, buyers and sellers, lawyers and physicians, a family and a neighborhood, a king over him or tenants under him, a bishop to rule in matters of government spiritual, and a people to be ruled by him in the affairs of their souls, then it is that every man dashes against another, and one relation requires what another denies ; and when one speaks, another will contradict him ; and that which is well spoken is sometimes innocently mistaken, and that upon a good cause produces an evil effect. And by these, and ten thousand other concurrent causes, man is made more than most miserable."

An Enemy's Criticism.—We may learn much from the criticisms of our worst enemies. If they accuse us of conceit, it will be quite likely that we have made some manifestation of that weakness, even if unconscious of so doing. So with other foibles and defects of character of which we may be accused. It may not be pleasant to be corrected by sarcastic criticism from an enemy, but such criticism may not be unprofitable, nevertheless.

—You can train the eye to see all the bright places in your life, and so slip over the hard ones with surprising ease. You can also train the eye to rest on the gloomy spots, in utter forgetfulness of all that is bright and beautiful. The former is the best education. Life is too short to nurse one's misery. Hurry across the low-lands that you may linger longer on the mountain-tops.

—To be bodily tranquil, to speak little and to digest without effort, are absolutely necessary to grandeur of mind or of presence, or to proper development of genius.—*Balzac.*

—The glory of great men ought always to be rated according to the means used to acquire it.

—To be a great man it is necessary to turn to account all opportunities.—*Rochefoucaud.*

Popular Science.

Solar Heat.—John Herschel makes the following statement concerning solar heat in Africa :—

"I have seen the thermometer four inches deep in the sand in South Africa rise to 159° F., and have cooked a beefsteak and boiled eggs hard by simple exposure to the sun in a box covered with a frame of window-glass, and placed in another box so covered."

The Stinging Tree.—Although the tropical scrubs of Queensland are very luxuriant and beautiful, they are not without their dangerous drawbacks, for there is one plant growing in them that is really deadly in its effects —that is to say, deadly in the same way that one would apply the term to fire, as, if a certain proportion of any one's body is burnt by the stinging tree, death will be the result. It would be as safe to pass through fires as to fall into one of these trees. They are found from two or three inches high to ten or fifteen feet; in the old ones the stem is whitish, and red berries usually grow on the top. The tree emits a peculiar and disagreeable smell, but it is best known by its leaf, which is nearly round, having a point at the top, and is jagged all round the edge, like a nettle. All the leaves are large—some larger than a saucer.

The Agricultural Ant.—One of the most curious of all insects is the agricultural ant of Texas. Rev. Mr. McCook has been recently studying the habits of this insect, and his observations confirm those of Dr. Lindcecum, which have been before published.

Mr. M. describes the homes of these ants as being circular clearings, hard and smooth; aptly called "pavements" by Dr. Lindcecum. These formicaries are from two to twelve feet in width, and always located where they will receive the full light of the sun.

These ants seem to go to work much as did the early pioneers of the Western wildernesses, first making a "clearing" for the home, dealing with spires of grass as those sturdy men dealt with huge oaks and other forest-trees. That these insects are true harvesters seemed to be proved by the following facts : First, workers are seen gathering seeds and carrying them into the formicaries through the central gates; secondly, the same seeds are found in granaries within the formicaries; thirdly, the seeds, the outer shell removed, are found in other granaries; fourthly, the ants are found carrying out shells to the refuse seeds.

Whether they thus purposely plant seeds, or merely preserve seed-bearing plants which grow near their dwelling from seeds which have been dropped, has not yet been fully determined. Their granaries consist of rooms of an oval shape, arranged one above another like floors in a house. Each room is about half an inch in height, with a hard, smooth roof and walls. Some rooms are employed for nurseries of the young. All of the rooms communicate with galleries.

A Flying Machine.—For many years, inventors have been exercising their genius in the endeavor to produce a really perfect and useful apparatus for aërial navigation. The brilliant expectations which have been raised for balloon traveling, have been repeatedly dashed to the ground. A few years ago, a fool-hardy inventor announced his determination to construct a flying machine. His effort was a failure; but the idea was adopted by other more practical men, who attained a greater degree of success, though still arriving at no satisfactory result.

Very recently, however, a machine has been constructed by Prof. C. F. Ritchell, at Bridgeport, Conn., which seems to contain all the elements of success. The machine consists, virtually, of a cylindrical balloon, with a steering apparatus attached. The latter arrangement consists of small fan-wheels, resembling those of a wind-mill, which are made to rotate in different planes and at different angles, so as to determine the movements of the apparatus in different directions.

A recent exhibition of the powers of the machine in Hartford, Conn., is stated to have been a perfect success. The machine can be moved up or down, with the wind or contrary to its direction, according to the will of the operator. The steering gear possesses in itself a certain amount of lifting power, so that the lifting power of the balloon attachment need not be sufficient to lift the entire apparatus.

THE

HEALTH REFORMER

BATTLE CREEK, MICH., JULY, 1878.

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

American Medical Association.

THE late meeting of the American Medical Association, held at Buffalo, N. Y., was one of the most largely attended sessions of that body ever held. The influx of medical men was so great that the hotel accommodations of the city were wholly inadequate to entertain the crowd.

Many valuable and very interesting papers were read in the general session, as well as in the sub-sections.

One of the most interesting features of the meeting was the discussion of the University of Michigan question. The general feeling seemed to be strong against the seeming countenance shown toward homeopathy by the professors of that school in admitting homeopathic students to their lectures and giving them certificates of examination. From the remarks made and the measures adopted, it was quite evident that the general feeling was decidedly in favor of disfellowshiping the University from the fraternity of medical colleges. The friends of the University naturally felt very gloomy at the prospect; but they are now much encouraged by the recent action of the regents which relieves them of any responsibility concerning the disciples of small pills and high potencies. This, it seems to us, is a very sensible thing, which ought to have been done long ago, obviating the many hard feelings and lengthy, stormy discussions which have grown out of the incongruous relations of incompatibles in our State University. We sincerely hope that we have now heard the last of the matter.

We were pleased to find at the meeting our friend, Dr. Geo. M. Beard, who read a very able and instructive paper on an important surgical subject.

Having a good opportunity to do so, we made a visit to the establishment of that king of quacks, R. V. Pierce. He has built a palatial edifice ostensibly as an "invalids' hotel," but, happily, only two or three invalids had been so unfortunate as to become inmates, so that it is really simply a hotel, evidently intended chiefly as a new advertising dodge. It will certainly amount to nothing more.

Look Out for Germs.

[THE following is a paper prepared for publication by the Committee on Hygiene of the Battle Creek Medical Society, in accordance with an action of that body.—ED.]

One of the greatest advances of medical science in modern times has been through the discovery that a large class of the most fatal diseases are occasioned by the reception into the system of minute organisms known as germs. Typhoid fever, ague, or intermittent fever, remittent or bilious fever, and all other malarial disorders, typhus fever, cerebro-spinal meningitis, diphtheria, croup, croupous pneumonia, dysentery, Asiatic cholera, cholera morbus, and others of the most common diseases, which annually slaughter thousands of our fellow-creatures, are undoubtedly produced in this way. This fact makes the study of germs one of the most interesting of subjects to the medical profession, and there is no subject of modern thought of more practical interest to the public.

WHAT ARE GERMS?

Germs are infinitesimal organisms which have the power of developing, under favorable conditions, into various forms of life. Mold and other small fungi are produced by one variety of germs, or spores. The fermentation of wine and beer, the "working" of

cider, the "rising" of bread, the souring of milk and other articles of food, the spoiling of the housewife's carefully canned fruit, together with all processes of decay and putrefaction of every sort, are occasioned by germs. They are far too small to be seen with the naked eye, and some of them cannot be discovered even with the most powerful microscopes; but their existence has been proven by the most subtile experiments with delicate apparatus, by such men as Tyndale, Huxley, Pasteur, and others.

THE GREATEST FOES OF HUMAN LIFE.

Germs destroy more lives than war, famine, accident, and all other causes combined. They are the natural enemies of both animal and vegetable life. In the grand circle of being, earth, air, and water—dead matter—are converted into vegetable life, which is, in turn, transformed into animal life. But the circle would not be complete without the return of the animal organization, together with the vegetable, to the original—earth, air, and water. To effect this work is the chief business of germs. They are abundant everywhere, though unseen, always ready to begin their destructive work wherever they can find opportunity.

As soon as an animal or a vegetable dies, it is seized upon by millions of these voracious scavengers, and is soon reduced to its original lifeless elements by the process commonly known as putrefaction. This arrangement of Nature is certainly both beautiful and salutary; but germs do not always wait until the vital spark has fled before they begin their devastating work. If the vital forces become in any way diminished, or if germs of a certain character become unusually abundant, they seem to gather courage by reason of the advantage, and ruthlessly attack the human frame even while the vital forces still have sway.

THEIR MODE OF ATTACK.

Germs are introduced into the system through the medium of the air, or through water. Myriads of them may be engulfed in the lungs at a single breath. A single swallow of water may contain countless millions of these infinitesimal enemies to human life. When thus received into the body, they soon find their way into the blood, and commence their destructive work. In some diseases they grow and multiply in the blood with such marvelous rapidity that in a very brief time the vital fluid becomes a swarming mass of life, a teeming current of living creatures, devouring its precious elements, and preying upon the delicate tissues of the body.

It has been proven beyond question that typhoid fever is caused by the reception of germs of this character into the system. Usually, in this disease, they are received through the medium of water or milk. In some other diseases, as diphtheria, malarial fevers, and croupous pneumonia, they are received through the air.

FEVER NESTS.

Germs, like higher organisms, grow best where they find the most fertile soil, consequently they abound in countless numbers in all places where decay or decomposition of any sort is in progress. Drains, cesspools, heaps of garbage, manure heaps, swill barrels, and vaults, are most prolific sources of these dangerous enemies to life. Neglected wells, cisterns which have been used a long time without cleaning, cellars in which vegetables are allowed to decay, damp rooms in which spots or streaks of mold appear on the walls, all of these are more dangerous to human life, and the direct cause of more deaths, than cholera, small-pox, and hydrophobia.

Cesspools and vaults are especially dangerous, since they not only poison the atmosphere, but their contents, by percolation through the earth, find their way into adjacent wells, and thus poison the water as well. Numerous cases of fever have been traced to the use of water from wells located near vaults or barnyards. Impurities have been known to find their way in this manner a distance of more than six hundred feet. An epidemic of typhoid fever which occurred in this city some time since, was traced to the use of milk from cows which drank the water of a well located in the barnyard.

HOW TO DESTROY GERMS.

The observance of the most scrupulous cleanliness is the first law of sanitary science. No sort of decomposable material should be allowed to accumulate in the vicinity of human dwellings. Everything which gives rise to a bad smell should be at once removed

from the premises or be thoroughly disinfected. Those who wish to avoid fevers, and other diseases incident to this season of the year, will do well to attend to the following suggestions :—

1. Keep the premises clean. Never allow any kind of decomposing refuse in the vicinity of the dwelling.

2. As soon as a bad odor is detected, secure its removal at once, either by removing the decomposing substance, by destroying it, or by disinfection.

3. Wherever there is a bad odor, there are also germs, and the air is full of the elements of disease.

4. *Dry* earth is one of the best disinfectants. It should be used liberally, and it is necessary that it should be very dry. Dust from the street is best. There is no better disinfectant for outhouses.

5. Another excellent disinfectant is copperas. Dissolve a pound of copperas in a gallon of water, and apply liberally wherever disinfection is needed. A few gallons will do much toward deodorizing an offensive vault. A few pints of this solution ought to be poured into sink drains every two or three days. It is also an excellent thing to disinfect stables and hitching places.

6. Whenever a person is suffering with typhoid fever, dysentery, cholera morbus, or any other bowel disease, the discharges should be at once removed and carefully buried. This precaution, well observed, would diminish the frequency of these disorders at least one-half.

7. Frequent bathing during the summer months, or body disinfection, as one physician expresses it, is a very important measure of health, and a great preventive of disease. A light daily bath may be taken without injury, and three or four baths a week during the warm weather are really indispensable to good health.

J. H. KELLOGG, M. D.,
EDWARD COX, M. D.,
Committee on Hygiene.

Vitality of Germs.—A German scientist has by careful experiments determined that bacteria, one of the most common varieties of germs, will survive a prolonged temperature of 140° below the freezing point of water.

The Secret of his Strength.

THE country has recently been bereaved of one of the most remarkable men of the present century, Wm. Cullen Bryant, of New York. As a journalist, an orator, and a poet, Mr. Bryant had scarcely a peer. A few days before his death, he made one of the best public speeches of his life, though upward of eighty-four years of age.

Mr. Bryant attributed his unusual activity to his strictly temperate life and careful attention to the laws of health. When he met his death—from concussion of the brain in consequence of a fall—he was as hearty and sprightly as a youth of twenty, and had as good a prospect of living to the age of six-score as the majority of men at forty have of living to see their sixtieth birthday.

The following paragraphs from a letter written by Mr. Bryant to a friend a few years ago, are evidence of the simplicity of his life :—

"I rise early, at this time of the year about half-past five; in summer, half an hour or even an hour earlier. Immediately, with a very little incumbrance of clothing, I begin a series of exercises for the most part designed to expand the chest, and at the same time call into action all the muscles and articulations of the body. These are performed with dumb-bells, the very lightest, covered with flannel, with a pole, a horizontal bar, and a light chair swung around my head. After a full hour, and sometimes more, passed in this manner, I bathe from head to foot. When at my place in the country, I sometimes shorten my exercises in the chamber, and, going out, occupy myself for half an hour or more in some work which requires brisk exercise. After my bath, if breakfast be not ready, I sit down to my studies till I am called.

"My breakfast is a simple one,—hominy and milk, or in place of hominy, brown bread or oatmeal, or wheaten grits, and in the season, baked sweet apples. Buckwheat cakes I do not decline, nor any other article of vegetable food, but animal food I never take at breakfast. Tea and coffee I never touch at any time. Sometimes I take a cup of chocolate, which has no narcotic effect and agrees with me very well. At breakfast I often take

fruit, either in its natural state or freshly stewed.

"After breakfast I occupy myself for a while with my studies, and then, when in town, I walk down to the office of the *Evening Post*, nearly three miles distant, and after about three hours, return, always walking, whatever be the weather or the state of the streets. In the country I am engaged in my literary tasks until a feeling of weariness drives me out into the open air, and I go upon my farm or into the garden and prune the fruit-trees or perform some other work about them which they need, and then go back to my books. I do not often drive out, preferring to walk.

"In the country I dine early, and it is only at that meal that I take either meat or fish, and of them but a moderate quantity, making my dinner mostly of vegetables. At the meal which is called tea, I take only a little bread and butter, with fruit, if it be on the table. In town, where I dine later, I make but two meals a day. Fruit makes a considerable part of my diet. My drink is water, yet I sometimes, though rarely, take a glass of wine. I am a natural temperance man, finding myself rather confused than exhilarated by wine. I never meddle with tobacco except to quarrel with its use."

Brain Food.

MUCH has been said and written, of late years, about "brain food." One recommends fish, another phosphates, another "Horsford's baking powder," others various other foods and compounds. But no one seems to have thought of naming that most important of all foods, PURE AIR. Oxygen, invigorating, renovating, life-giving oxygen, is the most essential of all brain foods. The *London Lancet* is the first to call attention to this important fact, as follows:—

"It is at length perceived that, to perform intellectual work thoroughly, men must be supplied with fresh air. This scrap of wisdom has been excogitated in connection with the controversy about the ventilation of courts of justice. It is not unreasonable to anticipate that in process of time it may dawn on the consciousness of ordinary thinkers that just as muscle is fed and trained for physical exercise, so brain needs to be prepared and sustained in mind work. It has too long been the fashion to leave the nobler part of man's organization to struggle with its own peculiar difficulties and supply its special needs as chance might enable it.

"This policy of neglect was all very well while the strain upon brain-power and work was not relatively inordinate. So long as the brain endured no more than its share of the penalty of labor, it might be left to pick up the nutriment it required from the common store supplied to the body as a whole. The faculty of self-repair in the brain was assumed to be equal to the needs of the organ, and in health it proved adequate to the task thrown upon it. Now, however, the equilibrium has been disturbed. The press of work and the strain of worry are so great in these days of hot haste and breathless enterprise, that, except under conditions rarely established and maintained, the power of self-nourishment and repair in the mind organ is not sufficiently strong to keep it in health. It follows that it must be fed and nourished by special design. An adequate supply of oxygen is the preliminary requirement.

"Whatever else may feed the brain, workers with this organ should be assured that alcohol will not sustain it. Alcoholization and oxygenation are directly antagonistic processes; and even if alcohol be food for the brain, the organ cannot feed when the nutrient fluid circulating in its vessels is disabled from the task of conveying oxygen, which happens whenever spirit is present in more than very moderate proportions in the blood. The relief afforded by alcohol from the sense of depression produced by a lack of oxygen is, therefore, illusory. It is procured by overstimulating an organ which is both exhausted and impaired."

Well Drainage.

EVERY one knows that a hole sunk in a boggy place, or in the wet sand by the seaside, soon fills with water by draining the surrounding earth or sand. In exactly the same manner, every well drains a considerable extent of soil about it. Careful experiments have shown that for every foot of depth a well drains a radius of three feet.

According to this law, a hole one foot in depth would drain a circle six feet in diameter. A well twenty feet deep would drain an area one hundred and twenty feet in diameter; and a well three times that depth would collect the water from an area of about one hundred thousand feet of surface.

By way of experiment, some creosote was poured into a trench situated two hundred yards from a well. In a short time, so much of the poison had found its way into the well as to be very readily perceptible to smell and taste.

Effect of Gas Products on Cotton Goods.—The poisonous character of the products of the combustion of illuminating gas is now coming to be well understood; but new evils arising from this source are constantly coming to light. The latest discovery in this line was made by Dr. Wm. Wallace, Gas Examiner and Public Analyst of Glasgow. "Sulphuric acid, he said, was found in considerable quantity in the goods after being some time exposed, while the same articles in the fresh condition were quite free from that acid. In some cases the cotton fiber itself was rendered so tender as to be perfectly useless. The same thing had been observed in the warehouses in several large towns in England, such as Leeds, Manchester, etc. The remedy which was recommended by Dr. Wallace was the thorough ventilation of the warehouses, so as to insure that the sulphurous and sulphuric acids generated by the burning of the gas might have a sufficiently free escape into the atmosphere. . . . . He exhibited a number of specimens of the goods which he had examined after they had been sent back by the London merchants to the manufacturers as damaged. Both in color and in strength they were seen to have suffered detriment by exposure to gaseous fumes."

Gases so corrosive as to destroy cotton fabrics must certainly be anything but wholesome for the delicate textures of the lungs. The burning of common illuminating gas must be looked upon as one of the greatest causes of consumption in cities. Unless some remedy is found, it would be decidedly better to go back to the old-fashioned tallow "dip" than to go on inhaling the sulphurous fumes resulting from the combustion of ordinary gas. The only remedy for this evil with which we are at present acquainted is gasoline gas, manufactured by machines for the purpose. This kind of gas is not only wholly free from deleterious properties, but is much cheaper than coal gas. On account of its healthfulness, it has been introduced into the Sanitarium of this place.

A Little Premature.—One of the most useful lessons for a young physician to learn, is to avoid predictions. This is well illustrated by the following from an English journal:—

"A doctor was summoned to attend a poor woman at Sheffield who was lying dangerously ill. He found the case so grave, and his assistance solicited at such an apparently hopeless period, that he concluded nothing could be done for the patient, even if it were possible that she could get the necessary nourishment which her case demanded. On leaving, he was asked when he would call again, but he explained that there could be no further need for his professional services, and volunteered there and then to write the certificate for her burial, which he accordingly did. The woman, however, was evidently one of that peculiarly irritating class of patients who delight in controverting medical science and opinions, and after the doctor departed, obstinately declining to fulfill his prediction, she rallied, and eventually completely recovered. She now goes about carrying her burial certificate with her!"

Quack Catarrh Remedies.—We met, several years ago, a quack who gained his livelihood by the sale of a snuff which he warranted a sure cure. He explained its composition by saying that for many years he had been engaged in collecting catarrh remedies. After he had found a dozen or two he combined them all together, and thus produced, in his estimation, the best of all remedies for this disease. The snuff contained such a variety of irritating and poisonous drugs that it could hardly be rendered worse by adding prussic acid, as we suggested.

The following paragraph calls attention to the case of a man of some prominence who

purchased of a quack and attempted to use a bottle of snuff for catarrh, with the results noted :—

"Ever since, for the space of two weeks, he has had, while walking, all the symptoms of a man two-thirds intoxicated. He has not been able to walk across the floor without staggering. He has been compelled to stop work for the past two weeks, and although gradually coming out of it, is still confined to his house. Other parties who have used it have been similarly affected."

Vegetable Food.—There can be no doubt that human life can be well sustained on vegetable food. At a meeting of the Medical Society of London, "Dr. Joseph Fayrer related his experience of the effects of this diet among the natives of India, and said he had no doubt that people could live on vegetables alone. He had seen some of the finest specimens of the human race as regards strength, power of endurance, and physical development, among the inhabitants of the north-west provinces of India, who were pure vegetarians; but he accounted for their condition from the fact that their food consisted chiefly of leguminous seeds, such as peas, beans, and the like, which contained a larger amount of nitrogen than other vegetables."

There is a much larger use of animal food than is necessary, as is shown by the above paragraph.

The Dance of Death.—The following paragraphs, from a contemporary journal, contain many ideas of practical utility at this season of the year :—

"A little picture appeared some weeks ago in *Harper's Bazar* which was a most impressive sanitary lecture. It represented a child sleeping in its bed, while the air of the chamber was filled with skeleton forms circling in a 'dance of death' around their unconscious victim. The ghastly crowd could be seen rising into the room from the wash-bowl, and were a fitting symbol of the deadly gases pouring in through the waste-pipe. If these unseen ministers of disease and death could be thus made visible, how many of our sleeping-rooms would be like the one in this suggestive picture! We boast of our 'modern improvements,' but in many cases these are only the means of changing our dwellings to pest-houses. The drain pipes from every chamber are devices for bringing in the poisonous emanations of the sewers, just as other pipes bring in gas to be burned; the only difference being that the supply of the former is constant and uncontrollable.

"Thousands of people spend the greater part of their lives in an atmosphere more or less contaminated with sewer gas, getting a breath of pure air only when they go out of doors. And yet these very people will perhaps sneer at 'sanitary bugbears,' and say, as some one has done, that sanitary improvements are merely devices for 'making health hideous.' It is only because the malignant demons against which sanitary science is waging war are intangible and invisible that *their* hideousness is not more generally recognized. *They* make health hideous, for they transform its strength and beauty into the weakness and deformity of disease, into the ghastliness and corruption of death."

Sensible Words about Dress.—Abba Goold Woolson, who has said numerous good things about healthful dress, is the author of the following excellent paragraphs :—

"Health would say, 'If your dress is to be tight, let it be tight anywhere but over the region between the upper, fastened ribs and the hips. If its weight is to be great, let it hang from the solid frame-work of the shoulders, not from this sensitive central region where there is nothing to support it. If any part is to be overheated, let it be the extremities, and not this. For here lie the vital organs whose unimpeded action is essential to life,—the lungs, the heart, the liver, and the stomach. That they may have the fullest opportunity to expand and move, they are covered only with loose flesh and a few movable bones.'

"'But custom says, 'Let your dress be tight nowhere but over this very region between the ribs and the hips. Loosen your clothing over the bone-encased shoulders; from your hips to your feet having wide-floating draperies; but bind and pinch and tighten over the lower air-cells of the lungs, over that throbbing heart, the active liver, and the expanding stomach. Fortunately there is nothing there, by way of bones, to prevent you from squeezing yourself all you wish; and only by squeezing yourself there can you be made beautiful in my eyes.'

"Furthermore she also says, 'You are weaker than man in physical strength, from a lack of exercise in youth, and from an indoor life. Carry, then, about yourself four times as much weight as he; multiply your garments; lengthen your skirts; weigh them down with ornaments, and gird them all over the shelf of your hips. There they will drag upon stomach and intestines, but I do not concern myself about that.'

"Again, custom, as antagonistic as ever to health, has these orders to give: 'Clothe slightly legs and arms; but encompass your body, just where the active internal organs create the most heat, with a torrid zone, an inch or two in width, of twenty thicknesses of material in the form of bindings. Below these, plait, gather, and reduplicate your cloth till it is ten-fold the thickness it is above the belted zone from which the skirts depend. If the nerve-centers that lie beneath in stomach and spine, become weakened and disordered, it is nothing to me.' Health says also, 'Have your dress durable and simple, that you may go abroad readily in all weathers, and be afraid of neither sun, rain, nor wind.' But custom makes it perishable in fabric, and engrossing in the care it demands; and being also burdensome and tight, it discourages exercise, save of the mildest sort and in the blandest weather."

PEOPLE'S DEPARTMENT.

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

THE SANITARIUM.

THE following ingenious acrostic was composed recently by an aged patient at the Sanitarium, and appeared first in the Battle Creek *Journal*, from which it has been copied by several papers:—

Thousands die who should be living,
Having not the knowledge needful
E'en to make life worth preserving;
Some, to lengthen out life's sorrows,
All the advertisements scan, for
Nostrums warranted to cure all
In the catalogue of ailments
That affect the life of mortals;
After oft-repeated trials,
Ransacking pharmacopœias
In the ever-buoyant hope of
Utilizing something whereby
Mitigation at the least be
Attained; after thorough drugging,
Turn disgusted and disheartened,
Being worse for all their efforts.
And another class of sufferers
Trust implicitly the doctors
That itinerantly visit
Local hunting-grounds like gipsies,
Even candidly pronouncing
Cures to follow their prescriptions,
Rush from one unto another,
Ever hopeful, though no better,
Ever doomed to disappointment,
Keep life-long experimenting.
Must it ever thus continue?
Is there no retreat, whence cometh
Cure by means ordained by Nature?
Has not man within this wide world
Instituted means, built mansions,
Given to the cause of healing?
Answer find in this acrostic,
Naming place and institution.

SENEX.

Sanitarium, room 96, *April* 18, 1878.

Canning Rhubarb.

DEAR REFORMER:—Your remarks on the canning of rhubarb, page 186, June No., remind me of the experience we had with it some fifteen years since. We filled a number of glass cans, preparing the stems as green fruits are usually prepared for canning. When opened, it appeared to be well kept. On using it, however, all who partook of it were soon affected with nausea and vomiting. Once or twice afterward it was tried with the same results. A year or two later we tried it in stone cans, and had a similar experience. This is all the practical knowledge I have of canning rhubarb. You will readily see that I do not think highly of it for such use.

Some twenty or twenty-five years since, a poor widow with two children took a late dinner composed in part of leaves of this plant boiled for greens. They soon began to suffer from nausea, vomiting, and catharsis, and during the night the mother and one daughter died. The other daughter was also sick, but when daylight came was able to call in a neighbor to witness the sad scene. This occurred about fifteen miles north-east of Cincinnati. I was not there at the time, but knew the family, and was sufficiently familiar with the facts as stated.

The theory is that the leaves contain oxalic acid, but that there is little or none of that poison in the stems which are used as a substitute for fruit. That they fill an important place as a substitute is well known to almost every one. I would not speak dis-

paragingly of the use of them in this way. But I am disposed to think that rhubarb is not, by any means, first-class food. I used to buy it in the market in hot, dry weather, and sometimes the acid in it was quite corrosive to the teeth. But when not too young or too old, and when fresh and vigorous in growth, I think there is no objection to its use to a moderate extent. You would think so were you to see my splendid bed of Linnæus in the garden. J. S. GALLOWAY.

There is no doubt that oxalic acid exists in the stalks of pie-plant in considerable quantity; but it should be observed that it is not in a free state, but combined with potash. In wheat and other grains we have phosphoric acid combined with potash. Neither oxalic acid nor phosphoric acid have the same effect when combined that they have when in a free state. We have regarded this as an explanation of the fact that the use of the stalks of the pie-plant does not produce results at all like those which follow the use of oxalic acid.

Respecting the cases mentioned by our friend, Dr. Galloway, we would remark that there seems to us to be ample room to doubt whether the rhubarb was responsible for the results which he notices. In the first case, it is quite possible that the sauce had undergone some change which did not appear upon a cursory examination. We have frequently noticed such incidents in the case of tomatoes and other acid fruits. In the second case, the leaves were used, which are certainly quite unfit for food. It often happens that one part of a plant is poisonous while another is harmless, or even very wholesome.

Again, the effects upon the family mentioned may have been the result of idiosyncrasy. Many people are made sick by eating strawberries, a fruit which is very wholesome for most persons. Or, again, the effects may have been wholly due to some other cause. Sudden and fatal attacks of disease of the bowels are not very uncommon when no distinct cause can be assigned.

We do not recommend the pie-plant as an article of food equal to fruit, but it is certainly for most people a very fair substitute.

YOU cannot associate with a bad person one hour without receiving some injury. The atmosphere around him is impure; it is more fatal than disease.

Questions and Answers.

Ague.— Z. T. B., Tenn., asks: Might a person while living in a malarious district avoid ague by hygienic living?

Ans. It would be impossible for a person to live strictly hygienically in a malarious district, since breathing pure air is required by the first principles of hygiene. A careful dietary will do much toward preventing malarial disease, as it will enable the system to eliminate the poison without the usual febrile disturbance. Nevertheless, it is possible for a person whose diet is the most strictly hygienic to receive into his system the malarial poison in such large quantities as to bring on the disease.

Scarlatina.—M. E. M., Mich., asks: What should be done in scarlatina when the patient has taken cold and the rash has receded, producing soreness of the joints?

Ans. A hot blanket pack, with warm drinks, will probably be as useful a remedy as can be employed.

Eczema — Lemons.— M. E. R., Mass., asks for information respecting an eruption which appears in red blotches upon her face, itching and burning very badly; also asks, Will lemons eaten without sugar do harm?

Ans. 1. The disease referred to is doubtless an eruption known as eczema. Very probably, it cannot be cured by simply local treatment. The general health must be improved, and the blood got into better condition. Tar soap is a very excellent application. Carbolated ointment will also give relief. 2. Lemons may be eaten freely by persons whose stomachs are not too sensitive. It is possible to eat so many as to produce irritation of the stomach. We have no faith in the common opinion that lemon juice will neutralize the bile.

Discharge from the Eye — Onions.— L. S. E. asks: 1. What can I do for a discharge of greenish matter from my left eye? 2. Are onions good for food?

Ans. 1. You had better have your eye examined by a good oculist, and follow his advice. 2. Onions contain a certain amount of nutriment, but we do not consider them good articles of food. They are too coarse and irritating for sensitive stomachs, and are not the best food for any one.

FARM AND HOUSEHOLD.

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

—To stop cracks in hard finished walls, use plaster of Paris mixed with strong alum water.

To Remove Stains from a Mattress.—Make a thick paste by wetting starch with cold water. Spread this over the stain, first placing the mattress in the sun. Rub off in a couple of hours, and if the ticking is not perfectly clean repeat the process.

Onion Juice for Stings.—The *Berliner Presse* says that the pain caused by the sting of a horse-fly may be instantly alleviated, and the swelling which often accompanies it speedily reduced, by simply rubbing the injured part with the juice of an onion. Probably it would be a useful application in the case of other insect stings.

To Clean Hair-Brushes.—The best plan is to use soda and cold water. As hot water and soap very soon soften the hairs, and rubbing completes their destruction, use soda dissolved in cold water instead. Do not set them near the fire, nor in the sun, to dry; but, after shaking them well, set them on the point of the handle in a shady place.

A Cheap Paint.—The following is said to be a cheap and durable substitute for paint on brick and other outside walls, fences, etc. :—

"Take of fresh Rosendale cement three parts, and of clean, fine sand one part; mix thoroughly with fresh water. This gives a gray or granite color, dark or light, according to the color of the cement. If brick color is desired, add enough Venetian red to the mixture to produce the color. If a very light color is desired, lime may be used with the cement and sand. Care must be taken to have all the ingredients well mixed together. In applying the wash the wall must be wet with clean fresh water, then follow immediately with the cement wash. This prevents the bricks from absorbing the water from the wash too rapidly, and gives time for the cement to set. The wash must be well stirred during the application. The admixture should be made as thick as can be applied conveniently with a whitewash brush."

Coal-Ashes for Tomatoes.—An experienced and successful market gardener having advised the use of coal-ashes as a manure or fertilizer for tomatoes, the writer of this paragraph made a trial of them last year with the best results. The soil on which the trial was made was naturally a rich one, and had, in addition to its natural riches, been improved by stable manure. In previous years there was no end to vine growth, but indisposition to form fruit, as is commonly the case under such circumstances. The coal-ashes, having been dumped to the extent of a good wheelbarrow load at each point where a plant was to stand, were thoroughly incorporated with the soil, and the plants set out four feet apart each way. They made prodigious growth, set fruit early in great numbers, and produced some of the smoothest, fairest, and largest tomatoes we ever saw. Indeed, the experiment was a successful one in every respect, and we shall never undertake to grow tomatoes where coal-ashes are to be had, without their assistance.—*Ex.*

Removing Spots from Clothing.

THE following recipes are well recommended :—

Grease.—On white goods, soap water, or alkalies. On colored cotton goods, hot soap water. On colored woolen goods, soap water or ammonia. On silk, benzine, ether, ammonia, magnesia, chalk, or white of eggs. Lay the goods on clean, bibulous paper, and rub on the detergent with a clean sponge.

Wine and Fruit Stains, Red Ink.—On white goods, moisten the spot and expose it to the fumes of burning sulphur, hot weak solution of chloride of lime, or bleaching powder. On colored goods of cotton and wool, warm soap water or ammonia. Same for silk; rub carefully.

Vinegar, Fruit Acids, Mold.—On white goods, a weak, hot solution of bleaching powder. On goods of cotton and wool, and silk, ammonia.

Rust, Black Ink.—On white goods, solution of oxalic acid, or weak muriatic acid. On colored goods, either cotton or wool, wash repeatedly with lemon juice. No remedy for silk.

Tar, Wagon Grease.—Soap, turpentine, jet of water alternately. Use benzine for silk instead of turpentine.

News and Miscellany.

—Italy proposes to hold an International Exhibition in 1881.

—A carrier pigeon recently accomplished the journey from this country to Switzerland on the wing.

—200,000 immigrants have already been drawn to Kansas by the admirable State display at the Centennial Exhibition.

—Experiments in Germany show that a textile fiber as fine as silk and as strong as hemp can be manufactured from the common nettle.

—It is proposed to import sulphur from Iceland, where there is an inexhaustible supply, and whence it can be obtained at half the cost of importation from Sicily.

—The elevated railway of New York is proving to be an almost intolerable nuisance, having already been the cause of numerous accidents by frightening teams and otherwise.

—The news lately received that an unvisited tribe of Esquimaux possess the relics of Sir John Franklin's party has induced the fitting out of a new expedition to go in search of the same. The schooner carrying the expedition sailed June 19.

—The European Peace Congress is in session at Berlin, and its work is progressing favorably. No doubt is entertained that the peace of Europe will be maintained; but Turkey will be shorn of a large share of its territory in Europe, and Russian power and *prestige* will be largely strengthened.

—New York is agitating the question whether the big bridge is n't going to be a failure. It has already cost over $10,000,000, twice the original estimate, and it will take $5,000,000 more to complete it. And prominent engineers are found who say it will not be safe, while it is admitted to be an obstacle to navigation.

—A strand of one of the great cables of the Brooklyn bridge slipped from its place recently, killing two men. A shoe attached to the cable, and weighing 1,400 lbs., was shot like a cannon-ball over housetops and telegraph poles, a distance of an eighth of a mile, by the force of the mishap.

—On the 15th ult., Congress declared, by a vote of 222 against 14, that neither Congress nor the Courts had power under the Constitution to undo the work of the 44th Congress, or reverse the count which declared Rutherford B. Hayes President, and Wm. A. Wheeler Vice-President, of the United States.

—An artesian well now being bored at Pesth has reached a depth of 3,300 feet. The well now furnishes 175,000 gallons of water at a temperature of 161°. The boring will continue till a temperature of 178° is reached. The well is expected to supply the city with warm water. By ingenious apparatus the water arising from the well is made to operate the drills.

Literary Notices.

BIBELNS VIN. Gefle, Sweden: E. Rosen.

This neatly printed little pamphlet of twenty-eight pages is a reprint in the Swedish language of our little tract entitled, "Wine and the Bible." A copy, by some means unknown to us, found its way to Sweden, where it fell into the hands of a publisher of temperance works, who caused it to be translated and printed. A copy was sent back to this country, and by accident fell into our hands. We are glad to see the interest of the friends of temperance in that distant land, and we wish them success in their noble efforts. We are certainly very glad to be able to contribute to the advancement of their work.

The publication of some of our temperance works in the Swedish and other languages has been contemplated for some time; but owing to an urgent press of other duties, we have not yet been able to accomplish it. We hope, however, that something may be done in this line before a great while.

THE WORK OF HEALTH OFFICERS. Lansing: State Board of Health. Printed by W. S. George.

This is the latest circular issued by the Michigan State Board of Health through their Secretary, Dr. H. B. Baker. It gives directions respecting the work of health officers and local boards of health, making suggestive hints respecting the prevention of epidemics, the restriction of communicable diseases, the prevention of sickness and death from ordinary diseases, etc.

Dr. Baker well remarks that "the local board of health should be a center of sanitary and hygienic intelligence for its locality." If every community were blessed with such a board of health, there can be no doubt that a very large share of the annual mortality which populates our cemeteries might be prevented.

YOUNG PEOPLE'S COMRADE. Brooklyn: Z. Pope Vose.

This admirable little monthly is edited by Miss Julia Coleman, whose ability as a writer on health and temperance is already too well known to require any comment from us. Miss Coleman is an ardent and enthusiastic worker in the cause of temperance, and her little leaflets and other writings have done much to advance the work in this country. The new monthly which she edits gives every promise of a brilliant future. It is devoted to temperance, and cannot fail to interest as well as instruct the young people. It has our most hearty sympathy and best wishes for its prosperity, since we feel assured that under the management of its present editor it cannot fail to meet with a satisfactory degree of success.

PUBLICATIONS RECEIVED.—*Church and School*; Ames' Eagle Excavating Apparatus; Legal Relations of Insane Patients; Annual Report of State Board of Health of Wisconsin; *North American Review*.

Items for the Month.

☞ We had hoped to get this number out fully on time, or a little ahead; but the printers have disappointed us, their type and presses being so engaged with other work as to make it impossible to avoid a little delay. Next number will be on time.

☞ Our friends will not forget that we have on hand a full assortment of temperance tracts which touch upon every phase of the subject. In many places they can be introduced into the reform clubs, temperance unions, and other temperance organizations, by making the proper effort. Much good may be done in this way. The pork and tobacco tracts may do an immense amount of good if judiciously used.

☞ Eld. James White, who recently returned from California, hoping to make greater advancement toward recovery here than in that State, after remaining here a few weeks during which time he made very great improvement in health, has just left on a trip to Colorado, where he expects to spend the balance of the summer in the mountains, seeking health and pursuing his literary labors as he has strength to do so. His friends are all gratified to see him making rapid advancement toward health again, and expect that he will return in the fall with better health and greater strength for labor than he has enjoyed for several years.

HEALTH ANNUAL FOR 1879.—We are already at work on the Health Annual for next year, and in a few weeks the first forms will be in press. We expect to have twenty thousand copies ready by the first of September, so that all who wish to make a business of selling them can begin in good season. It is none too early to begin to send in orders for next year's edition at once. Tract and Missionary Societies, and individuals who wish a large number of copies, should begin to carefully estimate the number they will be able to use the coming fall and winter, and report as soon as convenient, so that we can print at the first edition as large a proportion as possible of the whole number wanted. Don't fail to get your orders large enough.

☞ This month and the two following are the season for sanitary reformers to be active everywhere. In towns, cities, and villages, every one who is enlightened concerning the relation of germs, foul gases, and filth generally, to health, should consider himself in duty bound to feel a certain degree of responsibility concerning the public health. He should take pains to observe and look out for "fever nests," breeding places for germs, and all such enemies of the public health, and should not fail to make all possible efforts to secure their removal by personal influence and by notifying the proper authorities.

Boards of health are generally none too vigorous in the execution of their duties, and they need the stimulus of public sentiment. Nothing will help them more than to know that they are being watched, and that their acts and omissions are subjects of criticism.

All who are enlightened should let their light shine. We hope to be able to prepare a small tract soon on disinfection and prevention of filth diseases.

A NEW JOURNAL.—The managers of the Sanitarium expect to issue shortly the first number of a new journal, devoted to the interest of that institution. It is intended to be of special interest to patients, as it will furnish a means of communication between those who have at different times been inmates of the institution. The first number will contain a full description of the building, with illustrative cuts, together with a description of the grand dedication, and a brief history of the institution from its founding to the present time, also much other interesting matter.

The subscription price will be only 25 cents a year. All who would like to secure the first number will please send in their names as soon as convenient.

This new periodical will in no way take the place of the REFORMER, although it will contain some matter of the same character. No one will think of substituting it for this journal.

☞ On the fourth of this month our little city was a lively scene. The whisky interest and the temperance organizations of the city vied with each other in attracting public attention by their exercises, with processions, music, etc. The temperance people assembled a large audience in the city park just in front of our office of publication, where they listened in the forenoon to a rousing temperance speech by Mr. Fitz Maurice, an eloquent orator from Bay City, who held his hearers spell-bound for more than an hour.

At the conclusion of the address, the large audience repaired to the mammoth tent belonging to the S. D. Adventist denomination, in whose church-yard it was pitched. Here they found spread for the satisfaction of their keen appe-

tites a dozen large tables. In the center was the largest table of all, nearly forty feet in length, furnished by the Sanitarium. It was evident for a long time before dinner was announced that the last-mentioned table was the chief attraction, as it was flanked on either side by a long line of hungry people waiting till the hour for dinner should arrive. The table was so closely thronged on each side that it was very difficult for the waiters to make their way back and forth to supply the demands of the eaters. Scores were convinced by the testimony of their senses that a hygienic diet does not necessarily mean a starvation diet or total abstinence from all good things. The tables, laden with fruits, domestic and foreign, ornamented with flowers, and provided with well-cooked fruits, grains, and vegetables, were really attractive, though no more truly so than the tables spread in the dining-rooms of the Sanitarium every day of the year.

The receipts were large, and the whole affair a grand success for temperance.

WHEELER'S DISINFECTORS. — Mr. W. F. Wheeler, of Philadelphia, has invented and is now manufacturing a device for the prevention of odors from water closets, sinks, urinals, and everything of this sort. Through the advice of Dr. Azel Ames, of Massachusetts, Mr. Wheeler's disinfectors were introduced into the Sanitarium, and they have given the most unqualified satisfaction in their working.

The device consists in a chamber which is attached to the water-supply pipe, for water closets, in such a way that all of the water is obliged to pass through it. In this chamber is placed a ball of disinfectant soap which is composed of the most powerful disinfectants and deodorants. By this simple arrangement, the water becomes a disinfecting and deodorizing solution which removes the odor and destroys the injurious properties with which it comes in contact.

Mr. Wheeler makes his disinfectors in a great variety of forms so as to adapt them to all possible uses. They are so simple and perfect in every particular that it certainly seems as though nothing was left to be desired in this direction. We advise all who have opportunity to do so, to give this life-saving device a thorough trial, being assured that they will be delighted with the results.