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A Sound Mind in a Sound Body.

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The Formation of Life.

BY A. J. SANDERSON, M. D.

"LIFE is what we make it" is a common saying which is often repeated, but is seldom believed; yet there is more truth in the expression than we always realize.

The formation of life, as well as of character, is largely within our own hands. We can make of our bodies, also of our minds, what we will, provided we cooperate with the divine Intelligence and creative power that first formed us, and that continually works in us for the maintenance of our life.

The psalmist stood with fear and wonder before the graceful form and beautiful machinery of the human body. Modern physiological science opens the door for a still deeper understanding of the structure and functions of the human life; but even now, the living tissues with the vital activities are, only to a limited extent, subject to our inspection and analysis. In the study of physiology, as well as with every science, we only go to a certain depth when we come to the unknown. Concerning the origin of life, or the first cause operating in the active tissues, we can give no explanation; yet the more we study the better we can appreciate the sublime, comprehensive and sacred record that "God formed man out of the dust of the ground." Every living thing upon the earth comes from the dust of the ground, and returns to it again.

The form which God gave to man is the one which should be preserved; and we can have health and strength only as we do preserve it. The preservation of this form is entirely dependent upon the use we make of the body and all its functions.

It takes but slight observation to see that the principles of evolution are always manifest. We grow to become like the being we pattern after in act and thought. The athlete who wills for strength and muscle and works for it, will attain it if he is prudent; so will every other individual come to be molded and shaped by the kind of living through which he has passed. The form and portrait of every man is but the record of what he has been doing, and what he is doing, and the life he is living is shaping the form and portrait of what he is to be. A man's health and a man's weakness or disease records the peculiarities of his life; and the peculiarities and habits of one's life, if properly read, will tell of the strength or weakness which he is approaching.

The human body is a living machine, delicate, incomprehensible in mechanism, perfectly joined together, made to run with almost perpetual motion, yet with

comparatively no friction and no wear. Under proper environment and conditions, there is no reason for sickness, deformity, or disease; but we are so much the creatures of circumstance, and our best ideas of life are often so false, that we neither comprehend nor understand natural living; and it is but seldom that we inquire into the ways of life until we have so long abused the gift of health and strength that we suddenly discover it waning, or lost. It is at a great disadvantage that we then begin to study the laws of life, because it is impossible for a sick man to view his being in a rational way. It is only in health that we can understand health, or ascertain the perfect way in which it is made.

Health is but the perfect activity of every part of the body; and the laws concerning it are written upon every tissue. The best text-book on physiology is the one written within us. If we analyze the bony structures of the body and study the growth of the skeleton, we can find written upon it all the laws which govern its perfect action and preservation. Not a bone is unimportant, or a process on a bone insignificant. The structure of bone tells of the food that should be eaten; so their position tells us of the use to which they should be put. The relation to each other tells of the motion which they control and the position of the body which should be maintained. The skeleton, as a whole, indicates the form of clothing which should be worn. The hardness tells of the resistance which they can withstand. If these conditions were all met, there could be no deformity of the body or diseases of the bone; neither could there be any of the weaknesses of the body which are due to a faulty formation of the bony structures.

The handwriting of God on the bones is not more marked than it is upon the muscles, nerves, and every organ within the body; and with the same intelligent and unprejudiced reading, we can clearly ascertain the purpose, use, and conditions under which life can receive its fullest and soundest development.

The Fruit Cure. No. 6.

BY G. H. HEALD, M. D.

IN fevers, generally, there are conditions analogous to those in typhoid fever. Among these are:—

1. Inactivity of the saliva, and inability to digest starch.

2. Hypopepsia, with inability to digest nitrogenous foods, and diminished resistance against the inroads of germs, which produce, from the nitrogenous foods, poisons to be absorbed into the system, causing—

1. Auto-intoxication; and, hence—

2. An overworked condition of the liver from the attempt to dispose of the excessive amount of toxic matter.

3. Inactivity of the kidneys, tending to cause a retention of the poisons in the system.

In fruit the starch is already digested.

The dextrin and sugar of the fruit stimulates the glands of the stomach to increased secretion, thus lessening the degree of hypopepsia. The fruits furnish a minimum amount of albuminous matter, and the stomach is enabled by its increased digestive power to handle it. The increased acidity of the stomach fluid, together with the acidity of the

fruit, tends to inhibit the action of those germs which cause the nitrogenous fermentation. Fruit furnishes very little food from which the germs can produce poisons, so there is a rapid diminution in the amount of auto-intoxication, and a lessening of the work of the liver. The sugars, being ready for immediate absorption, go at once to the liver and build up its poison-destroying properties. The bowels are kept comparatively free, thus increasing the elimination in that direction, and the kidneys are stimulated to increased action, enabling them to excrete an increased amount of waste matter, and thus free the blood from inpurities. Thus very little food is furnished out of which to produce poisons, the growth of germs is discouraged, and the action of the liver in destroying the poisons is increased, as are also the action of the kidneys and bowels in eliminating the poisons.

A patient who is strong may live a week or two on a restricted fruit diet. After that the diet should also include gruels.

In a former paper mention was made of the fact that the poison of scarlet fever and that of diphtheria are elaborated from creatin and creatinine, substances which are found in meat, and especially in beef tea. Think, then, of giving beef tea in these diseases! The fact is, intelligent physicians are learning to discard, altogether, meat preparations in feeding fever patients.

Among the fevers which are benefited by a fruit diet are the eruptive fevers, smallpox, scarlet fever, measles, etc., and the various malarial fevers.

If one in a district in which typhoid fever or malaria is prevalent can not obtain boiled water, it would be better to drink no water, and to depend for fluid upon juicy fruits, being careful to avoid any possible contamination from the skin.

That form of jaundice which follows an attack of stomach trouble is due to the inflammation of the lining membrane of the stomach and duodenum, extending up into the bile ducts, occluding them so that the bile, being unable to make its way through the proper channel, is forced out into the blood current, and thence all over the body, to be deposited in the form of yellow pigment under the skin. The inconvenience o having the skin yellow is a small matter compared with the damage done to the system by having the bile turned from its natural course, poisoning the blood, and at the same time leaving the bowel without its natural antiseptic and stimulant, and thus favoring increased formation of poisonous material in the intestines. A fruit diet tends to lessen the intestinal fermentation and absorption of poison, and thus decreases the amount of work to be done by the overworked and partly-crippled liver.

LIFE'S HARMONY.

THEY tell me that in Pisa's old cathedral
All noises harsh and loud—
Grating of ponderous doors, shrill tones, the tramping
And murmur of the crowd—
Are caught up, softened, harmonized, and blended
Within the lofty dome,
Then echoed back in one great wave of music,
Sweet as a dream of home.

So all the harsh notes in life's mingled music,—
The burden and the woe,
The stroke that almost snaps the quivering heart-strings,
The loss that grieves us so,—
In heaven's o'erarching dome of perfect wisdom,
Power, and love, shall be
Gathered and blended in divinest marvel
Of matchless melody.

—*M. L. Upton.*

Body Filters.

BY A. J. SANDERSON, M. D.

LIFE is a manifestation of liberated energy. The food is taken into the system, and through the processes of digestion, assimilation, and oxidation, the latent energy is liberated and used in running the vital machinery. Consequently, life is dependent upon pure food supply and a perfect elimination of the non-nutritive elements, together with the products of tissue change.

Because of the vital changes going on in the system, waste matter and debris are formed everywhere, and must necessarily be removed. Especially does the alimentary canal accumulate waste, not only through the residue of the food, but also by its efforts to eliminate body waste.

There is not a tissue cell within the body where vital activities are taking place that is not accumulating chemical poisons, which, if not removed, would destroy the vitality and life of the cells. The work to rid the body of this waste is thrown upon the eliminative organs, consisting chiefly of the bowels, liver, kidneys, skin, and lungs. If any one of these organs should fail to work for a few hours the individual would die, and death would be caused by poisons generated within the body. While these are not harmful to the system when present in only a normal quantity, they become a fatal poison if allowed to accumulate.

The eliminative organs act largely by a process of filtration; each one is adapted to doing its own peculiar work. The structure of the organ is so arranged that when the blood stream passes its tissue, and the fluid comes into contact with its cell life, these latter select their own peculiar elements from the blood which are either directly removed and passed off through the proper channel; or by their own peculiar activity, they convert the product which they find in the blood into the nature of the substance which they eliminate. This fluid, in passing from the eliminative organ, sometimes becomes of special importance in performing other functions in the system, as is the case with the bile; after leaving the liver, it aids in the process of intestinal digestion and absorption; also the products of the glands of the skin keep its surface smooth and moist.

The perfect action and continued health of all these eliminative organs depends upon the nature and extent of the work that is thrown upon them. When the pure food is taken, under influences that render perfect digestion possible, the eliminative organs have only the work to do for which they are created, and will seldom fail; but when there is taken into the system material which is not food, then they are overworked. Especially is this the case when they have to do with alcoholic substances or elements, which in themselves are irritants or poisons to the tissues with which they come in contact.

Auto-intoxication, or poisoning of the body by the development of poisons in the alimentary canal from the various kinds of dyspepsia, is also a frequent source of products which are not only harmful to the tissues of the body, but which are more or less irritating and destructive to the cellular life of the eliminative organs, as they are obliged to remove these surplus and harmful products from the system.

Proper breathing and proper exercise are also essentials, without which perfect elimination is impossible. These func-

tions are necessary for the tissues to be properly oxidized, and for the processes of tissue change to regularly and effectually take place. When through sedentary habits or imperfect development of the respiratory organs, these important functions are but partially carried on, then the eliminative organs have to take from the body material which is not chemically broken up into its final waste product, and consequently have to do harder work; or it often happens that the kidneys and skin become inactive, and the tissues become laden with the waste matter.

Sometimes when nature finds herself in this condition, she makes a strong effort to rally and cleanse the tissues and streams within the body. This may be manifested by a heavy night sweat, an excessive flow of urine, or, perhaps a muddy urine, or one that has a heavy sediment. This extra work is extremely taxing upon these organs, and often becomes a cause for their temporarily or permanently diseased condition.

If one would have health he must keep the gateways of elimination free and open. The filters must all be kept clean, which is readily accomplished by taking heed to the various laws of hygiene which regulate tissue waste and the removal of the same from the body.

RATIONAL TREATMENT VS. NOTIONS.

BY DAVID PAULSON, M. D.

EVERY point at which our environment touches us serves to contribute either to our welfare or to our misery, and as it is important that every spoke in a wheel be sound in order that the hub may be safely balanced, so it is equally important that every spoke of our environment be so arranged as to contribute to our mental, moral, and physical health.

Unfortunately, the average invalid can not be made to see that the success of his restoration to health depends upon all these things, and so he generally focuses his attention upon, possibly, one or two spokes, as it were, and they may even be so weak and worm-eaten that the true physician would never recommend them to be used as a spoke for a solid wheel; for more than likely they are only the charm supposed to be locked up in a compressed tablet, or a few drops of colored liquid from a bottle on the shelf.

He is sick because some part or all of his surroundings or habits of life are detrimental to his physical welfare, and, like a skilful mechanic, he will inspect every point of it and perhaps rearrange all before he can expect nature to effect a cure in his particular case. Patients who have been out of harmony with almost every point of their physical environment often insist that all that is necessary for them to do to get well is to go away to the seashore, where they intend to continue the same health-destroying habits as at home. Or, perhaps, a nervous patient imagines that if he only could get to his old home for a short time, he would become perfectly well. But the seashore, the calm influence of the old home, in either case could only furnish one spoke for the dilapidated wheel, and if either is to be ignored, it would involve far less risk to fit in the spokes of pure diet, systematic exercise, adequate ventilation, simple, rational treatment, than to ignore all these and depend simply upon the one which had become merely a hobby or notion in the mind.

"THERE is nothing noble in being superior to some other man. The true nobility is in being superior to your previous self."

Creating a Necessity.

BY G. H. HEALD, M. D.

THE fewer one's necessities the greater his independence of circumstances and surroundings.

The difference between the savage and the civilized being is that the former has no necessity that he himself can not supply; while the latter is dependent on others for nearly everything he uses.

The thought came to me, as I observed an individual using an opera-glass, "Could he, if placed on an uninhabited island, make for himself such a glass, or, indeed, any one of the many articles which enter his daily life?" The savage can make everything, or obtain everything, he needs, and so is independent of his fellows.

There is no doubt that many of the necessities which have been created by civilization, and which, on account of their great number and complexity, require a division of labor, and make every one dependent on his fellow men, are an advantage rather than otherwise; but there is another class of necessities of which I wish to speak, which are in no sense an advantage, but always a detriment. I refer to those necessities which an individual creates for himself through the force of habit.

One man creates a necessity for tobacco. Before using it he had good health and a feeling of well-being, which (the habit being once established) is now only obtained through indulgence. His feeling of comfort and well-being is henceforth dependent on the use of the poison; and on the altar to his new god he sacrifices health, cleanliness of person, sweetness of breath, comfort of friends, his money, and perhaps his own soul's salvation.

His wife detests the smell of tobacco on his clothes and in his breath. It is nauseating to her; but she stifles her feelings and bravely tries to get used to the smoke nuisance. But he *must* have his tobacco. He has created the necessity. His children's clothes may be ragged and their shoes worn. They may even lack for food; but the father *must* have his tobacco. He has created the necessity.

Why should we, oh, *why should we* be so foolish as to create, through evil habits, necessities which need never have existed? Why can we not (if we are not already free) assert our independence of every habit, of every necessity which, siren-like, would lure us on to disaster?

We may add, in conclusion, that when one has created a necessity by becoming a reader of the HEALTH JOURNAL, he is to be excused, for it will be found to be a necessity which will enable him to rid himself of harmful necessities.

IT is not because things are difficult that we do not dare to attempt them, but they are difficult *because* we do not dare to do so.—*Seneca.*

A GOOD man doubles the length of his existence; to have lived so as to look back with pleasure on our past existence is to live twice.—*Martial.*

A Purpose in Life.

BY EMMA G. SANDERSON.

IN conning the world's history we find but few characters whose lives have been successful. There are a limited number of men and women who have out-distanced their fellows, whose ambitions and hopes appear to have been realized. But of the mass of humankind it is simply recorded that they live and die. They have been only the creature of circumstance, following whatever impulse impelled for the moment, being carelessly guided by habits unconsciously formed and carried out in the life without thought or aim or ambition. In this latter lies the real source of so much failure—lack of real purpose or aim. Men drift along from day to day, perhaps with the sole object of sustaining the life of which they find themselves the recipients.

A vessel upon the boundless sea needs to have in view a port for which she steers, otherwise she drifts endlessly, at the mercy of wind and wave. But to reach this end she must have propelling power sufficient to baffle storms and head winds, and with this must be a strong, trusty rudder controlled by the master mind, which shall keep in view the port ahead, and bear as directly as possible to that point. She may be torn and baffled by the elements, may, for a time, be turned aside from her course, but she will eventually overcome these difficulties and ride safe into harbor, if she but preserve her force and steering power. But she must have the two combined. Force alone will never secure the desired haven, and a faithful rudder will serve to no purpose if the power is wanting. Just so our life must have strength and purpose, or it fails miserably.

As the captain of the ship knows not what may await him on his voyage, what storms or calms he may encounter, so the human voyager may not know by what means, fair or foul, he is to reach the goal. He may not judge his way more prosperous if he pass along swiftly and without harm. Strong adversity, if courageously met, can not harm him nor hinder the accomplishment of his desired end. Instead, it will give strength and firmness to his purpose, and he will have greater confidence in his ultimate success.

On the other hand, how often do we see those who, in their childhood and youth, gave promise of a successful life, fail to develop all that lay within simply because life passed on so easily and smoothly as to call forth no effort on their part. Much better for them had it been to have met baffling storm and tide than to be left to drift in a dead calm.

It is well for us to see the nobility in the simplest and most obscure life. We need not be the one whom the world calls great or good. We may find truest pleasure in doing faithfully and with our best effort whatever may need to be done at the present moment. The world's greatest and noblest characters are not always those whose names we find recorded. They live their quiet lives, known and loved by a few, but the world at large may never hear of them. Still these characters are the foundation stones upon which earth's structure is reared. The ones whose names and lives are known to all the world serve to show the existence of these substantial ones, for whose building they furnish the adornment.

God sees not with the eye of man. To Him a life well lived is one which has as its highest aim the purpose to be true to the best that is possible for that life, to be each day all that is best and noblest in us. To such a life there is no such word as failure. Come what may, it but serves to develop and strengthen and build up, both in its own and in the lives of all around.

Dietetic Treatment of Gastric Disorders.

BY G. H. HEALD, M. D.

BEFORE beginning the consideration of the various disorders of digestion it will be well to call to mind, very briefly, some points in the physiology of the digestive organs. The office of these organs is, of course, to prepare food for assimilation, and in the execution of this change, a number of processes are carried on, among which may be mentioned:—

1. The secretion of substances which have the power to change the food into soluble and absorbable substances.

2. The maintaining of a periodical motion by which the food material is propelled through the intestinal tract.

3. The absorption of the products of digestion.

Changes may take place in one or more of these functions without any apparent change in the structure of the digestive system. For instance, there may be an excess or a deficiency in the secretory power of the glands; or there may be an excess or a deficiency in the muscular action; or there may be a deficiency in the absorptive powers; or there may be a change in the functions of the nerves. Of these changes, those which are most important are the changes in secretion, and especially the deficiency in muscular power of the stomach. Of all stomach disorders, this is probably the most frequent, or at least it is most frequently that which calls attention to the stomach as the seat of trouble. For with good motor power in the stomach and intestines so that the food is passed on promptly from stomach to intestines and is not allowed to stagnate in the intestines, the excess or deficiency of the digestive fluids, unless exceedingly marked, will cause comparatively little trouble. It is only when the stomach fails to empty itself at proper periods, and retains food from one meal to another, that it begins to make itself known as an offender.

In the mouth one can get along with an excess of saliva; and other fluid can be utilized in case of deficiency of the saliva; but if the patient can not swallow, serious trouble ensues. So in the stomach, if there is a deficiency in the gastric juice, the intestinal juice can do the work; and if there is an excess in the gastric juice, it will be neutralized soon after it reaches the duodenum. But if the stomach fails to "swallow," the retained material is certain, sooner or later, to cause serious disturbance. There are cases in which, with no free hydrochloric acid after an ordinary test meal, the person has no consciousness of stomach trouble and is apparently well nourished, the deficiency in hydrochloric acid having been discovered accidentally. In a case that comes to my mind now, the individual who supposed herself to be perfectly sound in every way, submitted to a test breakfast for experimental purposes. The result, showing an entire absence of free hydrochloric and very little combined hydrochloric acid, was unsatisfactory to her, and another test was made, which corroborated the first.

It has been customary of late years to base treatment of stomach disorders largely on the nature of the stomach fluid; but it will be readily perceived that this gives only part of the imformation necessary to a proper treatment of the disorder. We must not only know the nature of the secretion; and whether there is fermentation; but also whether the stomach muscles still contract properly.

There is also another large class of disorders of the stomach characterized by structural change, the principal ones being catarrh of the stomach, ulcer, and cancer. Gastric ulcer is always accompanied by excessive secretion of hydrochloric acid. Cancer, on the other hand, is accompanied by absence of free hydrochloric acid, so that these diseases may simulate those diseases whose principal manifestation is a disordered secretion. They have this distinguishing characteristic, however, that they are accompanied by localized pain, more or less constant, and occurring after meals or sometimes manifested on pressure. They are also frequently accompanied by vomiting of blood, either comparatively fresh or in a dark "coffee ground" condition.

Gastric catarrh is nearly always accompanied by a change in the secretions of the stomach. There may be excessive secretion of mucus and of gastric fluid, or both mucus and gastric fluid may be deficient or absent according to the stage and severity of the case.

Again, there are intestinal disorders which require dietetic management, but these will be taken up in a later series of papers.

Before beginning a detailed description of the various disorders of the stomach and their dietetic treatment, I wish to state that, notwithstanding the custom which is usually followed, to prescribe flesh meats in many gastric disturbances, I have no hesitancy in stating that I not only do not consider meat necessary in treatment of these disorders, but that a more permanent and more radical cure may be effected on a non-meat diet. It may take some time for a person accustomed to the use of meat to adapt himself to a non-meat diet, and occasionally the change must be made more or less gradually. On the other hand, one sees patients who have been on a meat diet, and who have been told by their physicians that they must eat meat in liberal quantities in order to get well, make rapid improvement as soon as their meat is taken away from them.

It should not be forgotten that stomach disorders can not be diagnosed by the symptoms alone; and often it is necessary for an individual to consult some physician who has made a special study of the diseases of the stomach, and who has the knowledge and the facilities to make a thorough chemical, physical, microscopical and bacteriological examination before a proper diagnosis can be made. Should any one following these directions not experience relief he should place himself in the hands of a competent physician.

(*To be continued.*)

NATURE'S price for health is regularity. We can not safely bottle up sleep to-night for to-morrow night's use, nor force our stomachs at one meal because we expect to eat sparingly at the next, nor become exhausted in working day and night, expecting to make it up later. Nature does nothing before her appointed time, and any attempt to hurry her invariably means ultimate disaster. She takes note of all our transactions, physical, mental, and moral, and places every item to our credit. There is no such thing as cheating nature. She may not present her bill on the day we violate her law, but if we overdraw our account at her bank and give her a mortgage on our minds and bodies, she will surely foreclose. She may loan us all we want to-day; but to-morrow, like Shylock, she will demand the last ounce of flesh. Nature does not excuse man for weakness, incompetence, or ignorance. She demands that he be at the top of his condition.—*Success.*

Nature's Method of Living.

BY G. H. HEALD, M. D.

THE vital principle, spoken of in a former number of the JOURNAL, is simply the life of God in us. God "breathed into his nostrils the breath of life, and man became a living soul." When man dies "his spirit [literally, "breath"] returns to God who gave it."

The grain of corn contains a life principle which has come through successive generations from the original corn, which itself received it from God at creation. This life principle, then, which animates the corn, is really part of the life of God, who is *life*, and whose life finds expression in all animated creation. "He giveth to all life, and breath, and all things." In the form of a seed, that life may remain dormant for years. Placed under proper conditions of moisture, warmth, and soil, it manifests its life in growth. The moisture and warmth can not give life. They simply enable that life already present to manifest itself in growth.

Crush the grain, or expose it to a boiling temperature, and no amount of manipulation can cause the return of the departed life. That life principle within the corn which tends to maintain the existence of the individual and of the species—that God-life formerly in the grain of corn—can not be replaced.

The egg contains the same life principle. The mother hen, as she hovers over the egg, does not give life to it, but supplies the warmth which is necessary in order that the already existing life may manifest itself.

So with man. The vital principle within—the God-life—is the only source of health. It is God that "giveth to all life, and breath, and all things." He gives not only to man and animals, but to plants as well.

This inner life principle, though it utilizes various resources (such as food, air, sunshine) in order to maintain the good health of the individual, can not make use of poisons for the same purpose, though the temporary impression conveyed by the use of drugs may be that they are beneficial.

Alcohol, for instance, is used as a stimulant to the heart; but it does not in any sense stimulate. It always paralyzes. There are two sets of nerves going to the heart, one increasing and the other decreasing its action. These, acting together in response to messages from the brain, regulate the heart's action. Alcohol, paralyzing that nerve whose function it is to decrease the heart's action, causes the heart, perhaps already nearly exhausted, to work with increased force. Having no break, it runs away, as it were, and is soon worn out.

Medicines, of whatever kind or whatever name, act so as to cause an apparent increase of life force, but their permanent action is to lessen the vitality.

The life principle is within. We can take nothing to increase this life principle or to give life. The most we can do is to remove those influences which tend to prevent, and to surround ourselves with

those influences which the life force can utilize in the building up and perpetuating of a perfect life. Such are hygienic measures. Such are nature's remedies—so simple that many turn from them with incredulity, so wonderful in their results that he who has the utmost confidence in them is often surprised.

Electricity and Quackery.

BY DAVID PAULSON, M. D.

ELECTRICITY is a sort of mysterious thing, and it has therefore always been a fruitful agent for the mind-curist and quack.

To prove this, I might refer to the use of "magnetic belts"—and some who wear them imagine that they derive a great deal of benefit from them.

In New York, a few years ago, a sort of horseshoe magnet was constructed out of a couple of thirty-two foot cannon; they were wound with miles of wire and then were converted into a great magnet, and were strong enough to pull a piece of metal weighing several tons, which would adhere so firmly that a team of horses could not pull it away from the magnet.

Experiments were then commenced upon dogs. They put a dog between these two cannon and he seemed to enjoy it; all that tremendous power of magnetism did not affect the pulse, the respiration or the temperature of the dogs that were the subjects of the experimentation. Afterwards several men ventured to place themselves in the same position, and not the slightest effect could be observed, but of course it must be borne in mind that currents of electricity and magnetism are different things altogether.

There is something in electricity; we have different currents,—and I will illustrate them by comparing them to currents of water. Electricity is so much like water that it can be illustrated in this way: The gulf stream, which flows smoothly along through the ocean, will illustrate galvanism. Then we have choppy waves which are somewhat troublesome,—they may illustrate faradism or faradic electricity. This electric current is broken like choppy waves. Then we have the nice, smooth waves,—such as we love to bathe in; likewise we also have a kind of electric current which flows in a similar way; we call it the sinusoidal current. This current is strong part of the time and weak part of the time, but there are no sudden breaks in it; it is an excellent remedy, and can be used without causing much pain. Sometimes we have water-spouts, and the water then comes down with great force; this may illustrate static electricity, which does just that thing. In general, it can be said that electricity stimulates nutrition; it stimulates every cell of the body with which it comes in contact to do more work. Quieting effects may likewise be secured from it.

BETWEEN the ages of twelve and seventeen the boy life is peculiarly susceptible to external influences, whether they be either good or bad.

KINDNESS is the music of good-will to men, and on this harp the smallest fingers may play heaven's sweetest tunes on earth.—*Elihu Burritt.*

Reply to Professor Atwater.

THERE is going the rounds of the press a report of the experiments of Professor Atwater, of Middletown, Connecticut, on the effects of alcohol on a man shut up from four to twelve days in a small air-tight metal chamber. Here, in addition to an ordinary diet, he was fed with alcohol to the amount usual in three glasses of whisky per day, and all his bodily processes watched. From the effect of the alcohol as noted in this experiment, in conditions wholly outside of ordinary human experience, broad deductions and generalizations are drawn which Professor Atwater thinks should change the present temperance teaching of the pulpit, the platform, the Sunday-school and public school.

Happily, in the abstract of his report he tells what he thinks are the errors in the present teaching which call for correction to make it tally with the case of this man in the box.

He says:—

"The errors are in insisting that alcohol is not a food but a poison, and that in any quantity, large or small, it is necessarily harmful and not useful."

Professor Atwater further says: "The question of alcohol being called a poison depends on the definition of the term 'poison.'" If so, any teaching on the question of whether alcohol is a poison or not, should be based on a correct definition of a poison.

After admitting that so much depends on the definition, Professor Atwater fails to give his definition of a poison except as the following statement, applied to alcohol, may be considered one. He says:—

"Alcohol used in quantities and ways which cause no injurious effects can not be called a poison."

Would he say that no substance which can be used in quantities and ways which cause no injurious effects can be called a poison? If so, a new classification of nearly all substances known to the scientific and popular mind as poisons would be called for. A long list would have to be taken out of the catalogue of poisons, such as strychnia, arsenic, belladonna, opium, and others used by physicians as medicines in quantities and ways which they claim cause no injurious effects, but benefit instead. If the possibility of these substances being used in ways which are not injurious does not take them out of the poison list, why should the same possibility, if such possibility exists, take out alcohol?

STANDARD DEFINITIONS OF A POISON.

Professor Atwater's definition of a poison, if a definition it may be called, differs essentially from that which appears in such standard authorities as medical dictionaries, encyclopedias, and the writings of eminent medical men. The instruction concerning alcohol as a poison given in the indorsed physiologies used in the public schools, is based on these standard definitions. Professor Atwater's criticism of this instruction is based on a conception of a poison which is entirely different from the definitions of the standard dictionaries.

"A poison is a substance which when absorbed into the blood is capable of seriously affecting health or of destroying life," says Alfred Swain Taylor, M. D., F. R. S., in his standard work on Medical Jurisprudence. His definition is virtually the one used by the scientific world of to-day, and is the one followed in the foregoing public school instruction. Dr. Taylor classes alcohol as a poison.

Quain's Dictionary of Medicine says:—

"A poison may be defined as a substance having an inherent deleterious property which renders it capable of destroying life by whatever avenue it is taken into the system," and among such poisons it enumerates alcohol.

Dr. Adolf Fick, professor of physiology in the University of Wurtzburg, Germany, says:—

"From an exhaustive definition we shall have to class every substance as a poison which, on becoming mixed with the blood, causes a disturbance in the function of any organ. That alcohol is such a substance can not be doubted."

It will be found, on examination, that the definitions of a poison given in the indorsed temperance manuals for the public schools are in harmony with the foregoing authorities and that in calling alcohol a poison, the school text-books teach that alcohol is a substance with inherent properties which render it *capable* of injuring health and destroying life. Who can deny that it has this capability?

In the indorsed manuals for public school use, a definition in substance like the foregoing is given in direct connection with the statement that alcohol is a poison, in nearly every case. Thus there is no occasion for misconception as to what is meant by this term. Whoever is taught from the pulpit, the platform, the Sunday-school, or public school, that a poison is a substance which has the inherent power, when introduced into the circulation, to injure health and destroy life, and that alcohol is such a poison, is learning truths he will not have to unlearn.

The question whether alcohol as a medicine can be used in quantities and ways which cause no injurious effects is not a topic for the public schools, but for medical colleges. The nature and effects of alcoholic *drinks*, that is, of alcohol as a beverage, not as a medicine, is what the laws of forty-one states and the National Congress require taught all pupils in all public schools, as a part of physiology and hygiene. Therefore the effects of alcohol when used as a medicine are purposely omitted from the endorsed school physiologies.

SHOULD ALCOHOL BE CLASSED WITH THE WORLD'S FOOD SUBSTANCES?

Professor Atwater says, "Whether alcohol is to be called a food or not depends upon the definition of a food." We wish he had given the public his definition of a food, that we might know whether in using that term he means what is generally understood by it.

The common idea of a food is a substance which can be depended on to nourish the body without doing it immediate or ultimate injury.

Professor Atwater apparently considers that anything that can be oxidized in the body and yield energy should be classed as a food. This may be a proper chemical definition of a food, but it is not the ordinary definition. If it were, many violent poisons, as, for instance, muscarine, the active principle of the poisonous mushroom plants, which is oxidized in the body and thus liberates energy, should be classed as foods.

If chemistry, for its own purposes, frames a definition of a food which will admit such known poisons, together with alcohol, it should, in all honesty, tell the people that by a food it does not mean a nutritious food.

It is evident that other considerations than the mere ability to oxidize and yield energy, must enter into the determination of food values from any rational or practical point of view. Alcohol is a narcotic, and like other narcotics it has the power to create an uncontrollable desire for itself. Sugar and fats are not narcotics, and have not this power. On the contrary,

the desire for them is soon satisfied, and then no more is relished. Professor Atwater himself admits that "many begin with the moderate use [of alcohol] which leads to disastrous excess." No one can tell how soon his attempted moderation will result in excess. "The evil of this excess," Professor Atwater says, "is one of the most serious facts with which the physiologists, sociologists and moralists of to-day have to deal."

Truth, the whole truth, can be trusted; it will not beguile to destruction. The whole truth in regard to alcohol stated in its proper relations will not leave the false idea that alcohol is a food in the same sense that fat and sugar are foods.

NOT PROVEN.

In conclusion we submit that inasmuch as Professor Atwater says the classification of alcohol as a food or a poison depends upon the definitions of these terms, and inasmuch as he has not proven the standard definitions of a poison inaccurate, nor the popular ideas of a food wrong, therefore he has not sustained his charge that the pulpit, platform, Sunday-school, and public school are in error when teaching in accordance with these definitions and ideas.

If by any merely technical definition which the world will accept, Professor Atwater is able to claim that alcohol is a food, we reply by quoting the following statement concerning alcohol, from Wood's Therapeutics:—

"For a person in health, it must be considered as one of the most wasteful, uncertain, and often deleterious of known substances which are considered foods."

MARY H. HUNT.

Superintendent of Scientific Temperance Instruction for the World's and National Woman's Christian Temperance Union.

PHYSICAL EXERCISE FOR BRAIN WORKERS.

IT is difficult to lay down exact rules, but it is a pretty safe rule that all, especially those who do much mental work, shall take sufficient exercise each day to make them perspire. The original curse pronounced upon man after his fall was that he should earn his bread by the sweat of his brow. Some sweat by means of sweating-baths, etc., without work, but it is better to do work enough to make one sweat. So, practically, a person who is taking four hours' mental taxation should take at least an hour's vigorous exercise to balance it—for instance, such exercise as brisk walking, a vigorous ride on the bicycle, or work in a gymnasium. But don't raise a twenty-five pound dumb-bell a few times until you get red in the face, and then lay it down and call that exercise. Do some vigorous work, and continue it until you feel a glow all over your body. A little of this kind of exercise will balance a good deal of mental work.

Now this story is often told me by business men: "I have to be very busy, as there is such strong competition, and I don't feel like exercising." After a man has worked hard all day in his office, it somehow requires a good deal of determination for him to take hard physical exercise by way of walking or work in the garden, but such need to train themselves until it becomes a part of their life, as much as common honesty; for if those in sedentary life do not accustom themselves to a certain amount of hard physical work daily, they will lie down in early graves. DAVID PAULSON, M. D.

IT is not wealth nor ancestry, but honorable conduct and a noble disposition, that makes men great.—*Ovid.*

Mutual Helpfulness.

MUTUAL helpfulness is an important element in the unity of the home. Let its members seek not their own, but each another's good. Children need to be trained to do this; it is not a spontaneous growth. There is danger that the child's strong sense of personality will degenerate into selfishness; there is no better safeguard against this danger than training children to do for others. Make each feel that he has his share to do in the home work, and that if he neglects it, so much will be lost out of the comfort and pleasure of home. Children thus trained will be not only helpful children—a beautiful characteristic—but they will be unselfish, because they are continually doing for others, and in accordance with the law enunciated by John Locke, two hundred years ago, their characters are being formed by this unselfish doing.

My heart is often pained by the way children are trained to selfishness through mistaken mother love that continually does for them instead of teaching them to do for themselves and for others. I have in my mind a family of a half dozen children, with a frail little mother, devoted to them and working herself to death for them, but never teaching them to do anything for themselves or for each other. The eldest was an unusually strong girl of twelve, who could be very helpful to her mother and the younger children, yet I never knew her to offer to do anything for any one of them. She did not seem to feel the slightest responsibility in regard to the younger children; indeed, the bonds of family affection seemed very slight between those brothers and sisters, and one great cause was that they were not trained to work for each other and the family good.

It is a characteristic of human nature, as distinguishing it from brute nature, that our love for any object is increased by doing loving service for it. If we do not train our children to this loving service to parents and to each other, we sadly weaken the bonds of family unity. This is doubtless one reason why we often find these bonds strongest, not among the rich, where plenty of servants take away the necessity, and often the opportunity, of doing kindly deeds to others, but in the homes of moderate competence, where loving hands minister to each other's necessities. O the blessedness of this ministry! Christ came not to be ministered unto, but to minister. Here, even more than in pecuniary things, it is far "more blessed to give than to receive."

As ministering to each other strengthens the love of brothers and sisters, and of children to parents, so does work for the common good strengthen love for home. This work should not be excessive nor harshly imposed, or it will have the opposite effect. But the consecrated commonsense of father and mother can find much for children to do, and can incite them to doing it in such a way as to bind them to home. It is a good thing for a boy to take pride in the garden, or barn, or farmyard, and for a girl to feel the same commendable pride in a well-kept house and a well-stocked pantry, because they had something to do in making them so.

To me it seems utterly impossible to develop a symmetrical womanly character without giving our girls thorough training in all housewifely arts.

In the same way, and for the same reason, boys should share the labors of their father. We know a wise father who often puts himself to great inconvenience to take his boys with him when he goes to

the blacksmith shop, into the country to buy hay or oats for his horse, and on similar expeditions. And just as soon as they are old enough—before most fathers would thus trust their boys—he sends them on such errands alone. In his city office there is not very much that they can do, so he takes pains to utilize every occasion for employing them in service for the family good. He is thus preparing them for actual life, and is strengthening their interest in home by making them workers together with him for the common good.—*Mary Allen West.*

SEASONABLE HINTS.

BY G. H. HEALD.

AS FALL approaches, it behooves one to be especially careful to avoid all sources of contamination which might tend to favor the production of typhoid fever or of malaria.

The water, if not from a source that is entirely above suspicion, should be tested occasionally by a bacteriologist to determine its condition ; or better, it should be boiled before being used for drinking purposes.

In cases of an epidemic, or in places where an epidemic of typhoid or malaria have existed previously, no food whatever should be eaten until after it has been cooked. Take your water and your food only after it has been sterilized, and you will greatly lessen your liability to be attacked by these diseases.

Above all, so eat and live as to keep your system in a condition in which it will repel the invasion of germs.

MUSIC AND LONGEVITY.—Notwithstanding I will soon pass my eighty-first birthday, my mind and body are still in good condition; which I attribute to the fact that I have a variety of occupations, which induces me to give exercise to different parts of my brain as well as of my body, without overworking and exhausting one part.

I have collected some statistics about men occupied exclusively in one kind of mechanical labor, and found that they die before the average of the life of such as have to perform labor which does not require the continuous exercise of the same parts of the body, but who are occupied in labor which allows the exercise of almost all parts; so, for instance, men whose main occupation is the use of the sledge hammer are very short-lived, and several crippled old men have testified to me that they were overworked in one certain pursuit without variation.

It is the same with the mind as it is with the body, and even more so; men occupied year after year with bookkeeping, or being cashiers, or teaching one exclusive branch of knowledge, or giving music lessons to beginners, or clergymen preaching orthodox sermons or praying according to the same system, break down early. Hence broken-down clergymen abound. When the mind is free to rove wherever reason calls it, a better mental health results than is the case when the mind is trammeled by theological dogmas.

But, as in the usual course of life, men frequently have monotonous daily duties to perform, which wear out their mind and body, it may be a blessing to them when they can indulge in another occupation which is utterly different from any daily routine; and such an occupation is music, which has the double advantage that it can be enjoyed also by those who have not been musically educated, but whose tastes run in such a direction as to be able to enjoy good music.—*Scientific American.*

A Prickly Preacher.

"SISTER, I can't get this sum right. Won't you help me?" asked little Nellie, coming into the room with her slate.

"You must be dreadfully stupid not to understand such a simple thing as that," Marian answered, as she took the slate impatiently out of the child's hand. "Now, if I have to stop and fuss with your old arithmetic, I shan't have any time to practise."

"Never mind," said Nellie meekly, starting to go.

"Oh, you needn't go away! I suppose I can spare the time somehow."

And very clearly, though in a disagreeable manner, Marian explained the puzzling example, so Nellie found out where her mistake had been.

"Marian!" called her mother from the kitchen, "I am afraid Tom forgot to stop at the grocer's and order the peaches. Did you remind him again before he went?"

"No'm; I thought he ought to remember for once without being reminded all the time," Marian answered pettishly. "I suppose I have got to go and order them."

"You need not, if you are busy," her mother answered. "I can manage to wait for them until this afternoon, when Tom comes home."

"No, that is not worth while; I'll go." And Marian put on her hat, and executed the errand.

It was a warm morning, and when Marian returned from her walk, she went out on the porch where it was cool. A green, prickly chestnut burr had dropped from the tree in front of the house, and grandfather pushed it meditatively about with his cane, saying:—

"It's too bad that anything with as good a heart as a chestnut burr should have such a prickly, sharp covering, is'nt it?"

"Yes, I'd rather go without the chestnut than hurt my hands opening such a prickly burr," answered Marian, fanning herself with her broad-brimmed hat.

"Yet it's only the outside that is sharp," said grandfather, musingly. "It has a velvet lining to its prickly exterior, and there are no sweeter nuts anywhere than the brown, polished beauties which nestle in their soft hiding-place. That chestnut burr makes me think of some one I know."

"Whom?" asked Marian with interest.

"A young friend of mine, who has the kindest heart possible. She is always ready to do a kindness for any one, and she never refuses to grant a favor; but she always is so ungracious about her kind deeds, and says so many sharp, irritable things, that one is tempted to forget the warm heart underneath, and remember only the prickly burr. If she would only do her kind deeds in a kindly way, they would be doubly appreciated."

Marian blushed.

"I suppose you mean me, grandfather," she said, after a little pause. "I didn't think it mattered much if I do grumble a little, so long as I always do what I am asked."

"It makes people feel sometimes as if it was hardly worth while to get their fingers pricked for the sake of the nut," grandfather answered. "Let this prickly preacher preach you a sermon, dear; and learn to do good deeds kindly."—*M. E. Kenney, in the Presbyterian.*

WHEN about to commit a base deed, respect thyself if thou hast no other witness.—*Ausonius.*

Worry.

THE word "worry" is not of classical origin. It is not a Latin or a Greek word, but probably Saxon or old English. It originally meant to seize by the throat and strangle, as when a dog seizes a sheep, or even a rat. The dog worries these animals to death.

The name "wolf" was given to the creature because it always worries its prey, torments it, tires it out. Warga, the old name of the wolf, meant a strangler, or one who worries its prey to death. The cat worries the mouse. Anything that worries produces unpleasant emotions, and these prevent the healthy action of both body and brain.

In modern times the wolves and the dogs which worry us are not real wolves and real dogs, but the small cares and troubles which keep us anxious and uneasy. They do not strangle us to death, but they strangle our better selves, and often reduce the value of our lives to a minimum. Dr. Beaumont, who studied the digestive processes of a patient who had an opening into his stomach so he could see the operation of digestion, stated that when this patient was worried or angry, digestion was slow and imperfectly performed. The stomach was worried as well as the brain. The action of sorrow, anxiety, and worry is to derange and obstruct the whole of this beautiful and important process. One might as well attempt to build a house of cubes of soft, moist clay, as to construct, or rather reconstruct, the human body with undigested food. Dyspepsia is a disease whose pains are relentless and unmanning, and whose consequences are grievous to be borne.

In most cases, consumption, cancer of the stomach, ulcer of the stomach, and (in infants) rickets, scrofula, and general wasting are preceded by dyspeptic conditions.

Can women, who have more little cares and trials than men, go through life without worry?—Not unless they take charge of their own feelings, and keep them in their proper place. It is simply a matter of self-government and self-control. Self-control is one of the more recent requirements of the race, and is not yet so fully developed as it will be some day; but even now many can control themselves if they will. It is a matter of will, and women, it is said, are not lacking in this respect.

One of the rarities of our age is a person who is happy. The happiest people are generally those who, while cultivating habits of prudence and forethought, desiring only a comfortable independence, are indifferent to the accumulation of great wealth, and addicted to simple pleasures and home entertainments; who cherish a wholesome aversion to ostentatious hospitality and ceremonious display; who select their friends on account of their sterling character, and never think of inquiring how much they are worth. We meet with such now and then, who at eighty retain something of their youthful freshness of feeling and warmth of heart.

If there was a wolf constantly following any of us to worry out our lives, would we not at once try to have it destroyed? The same course should be pursued with regard to the many little wolves,—the cares and trials of life which strangle our happiness and destroy our health.—*Journal of Hygiene.*

MANY enterprises which seem impracticable to little minds, succeed by trying. —*Tacitus.*

EASILY PREPARED DESSERTS FOR CONVALESCENTS.

LEMON JELLY.—Cover one-third of a box of Nelson's gelatin with cold water, and let it soak for fifteen minutes; then add one cup of sugar, juice of one lemon, and one cup boiling water; stir until the sugar is dissolved; strain through gauze and stand on ice to harden. Any other desirable flavor may be substituted for the lemon.

ORANGE FLOAT.—Moisten one tablespoonful of corn-starch with a little cold water and stir it into a cup of boiling water, stirring constantly; add one tablespoonful of sugar and the juice of one lemon; cut two oranges into small pieces, put into a dish, and pour the boiling corn-starch over them; put on ice until needed.

TART FAIT.—Beat the yolk of an egg and a tablespoonful of sugar to a cream; add one tablespoonful of milk and one of flour; beat until smooth; add the juice and rind of a lemon and the white beaten to a stiff froth; turn into a buttered cup, dredge the top of the custard thickly with pulverized sugar, and bake in a quick oven for fifteen minutes.

STRAWBERRY SPONGE.—Cover one-half box of Nelson's gelatine with cold water and cook for half an hour, then pour over it one pint of boiling water; add one-half cup of sugar and stir until dissolved; add one-half pint of strawberry juice and strain into a basin; put this basin into a pan of cracked ice to stand until cold and stiff; stirring occasionally; then beat to a stiff froth, add the well-beaten whites of four eggs, and beat until smooth; then place on the ice to harden.

CUP CUSTARD.—Beat one egg until light; add one teaspoonful of sugar, beat again; add three-fourths cup of milk, flavor to taste and stir until the sugar is dissolved; pour into a buttered cup, place the cup in a pan of boiling water, and place in the oven; bake until the custard sets, then set away to cool.

GERMAN TRIFLES.—In a small glass dish place a thin layer of sponge cake, then a layer of sliced orange, and pour custard over it. The white of an egg and one tablespoonful of pulverized sugar, beaten very light, may be piled on top when ready to serve.

APPLE FLOAT.—Stew and strain one large, tart apple; when cold add a tablespoonful of sugar and the well-beaten white of one egg. Serve as soon as made.

RICE SNOW.—Wash one tablespoonful of rice and boil until tender in a double boiler; add one tablespoonful of milk, one teaspoonful of sugar, a few drops of vanilla; while boiling, stir in the stiff-beaten white of one egg. Serve with cream either hot or cold.

WILL-POWER.

THERE is no chance, no destiny, no fate,
Can circumvent, or hinder, or control
The firm resolve of a determined soul.
Gifts count for nothing; will alone is great;
All things give way before it, soon or late.
What obstacle can stay the mighty force
Of the sea-seeking river in its course,
Or cause the ascending orb of day to wait?
Each well-born soul must win what it deserves.
Let the fool prate of luck. The fortunate
Is he whose earnest purpose never swerves,
Whose slightest action or inaction serves
The one great aim.
Why, even death stands still
And waits an hour sometimes for such a will.

—*Ella Wheeler Wilcox.*

CHILDREN are what their parents make them, by their instruction, discipline, and example.

GLUTTONY and anger will deform a face.

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PUBLISHERS' DEPARTMENT.

THE work on the main building is nearing completion. The physicians' offices will be occupied and also a number of the sleeping rooms by the time this JOURNAL reaches its readers.

A MACHINE for making granose biscuit has been added to the plant of the Health Food Company, and now we can supply customers with granose biscuit fresh from the oven in quantities to suit.

DR. BRIGHOUSE, who has been doing some advanced work in Chicago, will probably return to the coast ere this number of the JOURNAL is published, to enter her work as lady physician at the Sanitarium.

THERE is no end to the sky,
And the stars are everywhere,
And time is eternity,
And the here is over there;
For the common deeds of the common day
Are ringing bells in the far-away.

—*Henry Burton.*

THE timidity of public sentiment concerning the sale and use of spirits is phenomenal. Men without sentiment, on reform questions, become silent and hesitate when the drink question is called up. Only when the injuries from rum become personal in their family and circle are they aroused to recognize its dangers.

IN this number we publish an article from the pen of Mrs. Mary H. Hunt, superintendent of the World's and National Woman's Christian Temperance Union, written as a reply to the argument recently presented by Professor Atwater in favor of alcohol as a food. It deserves a careful reading; and its sentiments should be a matter of public discussion.

THE September number of the JOURNAL will be a special issue. The articles will be written with direct reference to the hygienic needs of the latter part of the warm seasons of the year; and it will be an unusually helpful number. Steps have been taken to give it a wide circulation; and we solicit the aid of our friends in bringing it to all those who feel interested in matters of temperance and personal hygiene and healthful living.

THE JOURNAL is determined to increase its subscription list. The aim shall be to furnish such a journal that those who have enjoyed reading it will long for its visits, and will take pleasure in introducing it to others who should have the benefit of its instruction. Have you been benefited by it? Kindly pass it on, then, that others may have a like benefit. If you have a little spare time (and who has not?), you can earn money by introducing the JOURNAL to your friends and acquaintances. Write to the publishers for terms.

BILLS to establish asylums for inebriates have been introduced into the Legislature of Illinois every year for a long time. They are always killed in the committee. This year a new bill has appeared; it is called the Saloon-gag Bill, and provides for the erection of two hospitals in the state for the proper care, custody, and treatment of inebriates. To pay for the running expenses of this institution, a tax is imposed on all saloons to the extent of ten per cent over and above all moneys collected as licenses for selling liquor. Justices of the peace and police magistrates are to judge whether a person is a fit subject for treatment, and they must furnish to proprietors of saloons, at least each six months, a list of those persons sent to the asylums. When a patient is adjudged cured of the drink habit he is to be let out on parole, and if he again indulges his appetite he is to be immediately sent back. If the saloon-keeper sells liquor to a habitual drunkard, he will be heavily fined. It is claimed by a number of liquor dealers that it would be cheaper to be taxed to support drunkards than to pay judgments obtained by relatives of men to whom they sell too much "fire water."

THAT only is really disgraceful to a man which he has deserved to suffer.—*Phædrus.*