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THE PHYSIOLOGY OF DIGESTION.*

BY THE EDITOR.

THE DIGESTIVE PROCESS.—Before the middle of the last century very little was understood respecting the real nature of the phenomena which together make up the complete process of digestion. Since that time, the subject has been studied so carefully and patiently that physiologists have now arrived at a pretty clear understanding of the matter. By far the greatest advances made in this study have been through the aid of several curious accidents by which the human stomach has been exposed to view during life, giving an opportunity for its inspection both when inactive, and when in a state of activity from the presence of food. Numerous cases of this nature have been purposely produced in the dog by physiologists for further study, and hundreds of canines have suffered unwilling martyrdom at the shrine of science for the gratification of man's thirst for knowledge on this subject.

We have already considered at sufficient length the anatomy of the digestive organs, the nature of the various digestive fluids, and the action of each of the digestive fluids upon the elements of food. We are now prepared to consider in a connected manner the several processes of digestion. As before remarked, the digestive apparatus consists of a series of organs of which the stomach is only one, and perhaps not the most important, since life can long be sustained without the activity of the

stomach, by alimentation through the lower bowels. In the complete digestive process each one of the series of organs acts successively upon the food; and the arrangement is such that the prompt and thorough action of each organ is essential to the successful action of the succeeding ones.

In order to simplify the idea of digestion in the mind of the reader, we may remark at this point a fact which is well sustained by the most careful study of the process, that digestion really depends upon two distinct vital actions; viz., secretion and muscular action. The alimentary canal is simply a muscular tube lined with mucous membrane, along which are situated at different intervals, secreting organs which pour into its cavity their potent juices by means of which the contents of the tube are, if possible, rendered soluble and dissolved. The chief objects of the muscular canal seem to be to move the food along and bring it in contact with the active agents of digestion. With this general view of the subject, let us now consider the several steps in the process.

In order to form an idea of normal or healthy digestion, let us observe the process in a healthy man, in whom all parts of it are purely physiological. He sits down to his breakfast about one hour after rising, having taken a little gentle exercise to arouse the activities of the system, and perhaps taken a small quantity of cold water a few minutes before to supply the demand for fluid without taking too much at the meal and to excite the gastric and intestinal secretions, as well

* "Digestion and Dyspepsia:" Good Health Pub. Co.

as that of the liver, thereby insuring both an active digestion and proper activity of the bowels.

MASTICATION.—Our subject places in his mouth a small variety of foods containing in proper proportion the several elements of nutrition, and simply prepared, without the admixture of stimulating or irritating spices and condiments. As the food is slowly received, it is thoroughly masticated, being ground and triturated by a set of sound teeth, capable of vigorous use, and aided by the salivary secretion, until it is reduced to a pulpy mass.

INSALIVATION.—At the same time that this grinding process is going on, the saliva, while also aiding the mechanical division of the food, is performing its specific work upon the starch of which the food is likely to be largely composed, converting it into sugar, so that the mass of food, or alimentary bolus as it is termed, becomes sweeter in flavor the longer it is chewed.

STOMACH DIGESTION.—After thorough mastication, each mouthful of food is in turn swallowed, being drawn down into the stomach by the muscles of the œsophagus, not simply dropping into that organ through an open tube, as many people suppose, the œsophagus being always closed, excepting only that portion which is occupied by the food in its passage to the stomach. Shortly after the food has reached that organ, its mucous membrane assumes, according to the observations of Beaumont on the stomach of Alexis St. Martin, a rosy appearance, and there may be seen oozing from its surface the gastric juice in tiny drops like perspiration on the skin. The secretion increases rapidly, and begins at once its specific action on the albuminous elements of the food, which have been made accessible by thorough mastication, which has broken up the food structures in such a manner as to expose freely all its different elements. It may occur that the gastric secretion has been excited before the food has been swallowed; in which case there is no delay whatever in the commencement of gastric digestion.

Dr. Beaumont observed, in watching patiently at the curious window-like opening in the stomach of St. Martin, that very soon after food is received into the stomach, the muscular structures of that organ begin to act,

setting up a sort of churning process, turning the food over and over, squeezing, pressing, and variously manipulating it, moving it along its lower border toward the pylorus, and returning it along its upper border to the pouch-like left extremity into which it is first received from the œsophagus.

If the food contains a large quantity of fluid, this is absorbed before the process just described begins, since it is evident that too great an amount of fluid would effectually prevent such action on the food by the muscular walls of the stomach. It is obvious, also, that a considerable amount of bulk is needed in the food, to enable the stomach to operate upon it effectually. When milk is taken, it is quickly coagulated by the gastric juice, and the whey being absorbed, the gastric juice acts upon the semi-solid masses formed. Soups, gruels, and all fluid foods are rendered semi-solid by partial absorption of their watery constituent.

At the same time that the gastric juice is acting upon its special elements, the digestion of starch continues through the activity of the mucus of the stomach, the saliva being neutralized by the gastric juice when the food reaches the stomach. Absorption of the portions of the food which are rendered liquid by digestion is all the time taking place, so that the semi-solid character of the mass is in a measure preserved.

After this process has continued for a time, which is longer or shorter, according to the nature of the food or the manner of its preparation, portions of food begin to pass out of the stomach. As the mass is moved along the lower border of the stomach toward the pylorus, the orifice is opened a little, instead of being tightly closed as before, and small portions of food which have been properly acted upon by the stomach and the gastric juice, are allowed to pass through. If approached by portions of undigested food, the pylorus contracts strongly and allows none to pass. By this means the food is kept in the stomach until gastric digestion has been well completed. A curious fact, however, rather difficult of explanation, is that the pylorus seems to possess a peculiar faculty for discovering whether substances brought in contact with it ought to be digested in the stomach or not. Unbroken

seeds, as cherry stones, apple and grape seeds, etc., together with pieces of glass, stone, or other insoluble substances, are allowed to pass without opposition. After a time, the acidity of the food becomes so great from the increase of gastric juice, that the stomach is excited to strong contraction, and the whole mass is crowded through the pylorus into the small intestine, where the work is completed. The length of time intervening between the ingestion of food and the emptying of the stomach varies from an hour or an hour and a half, when the article eaten is boiled rice or a melon apple, to between five and six hours after eating fat pork or similar food. The figurative expression used by laborers who claim that pork is an excellent article of food because it "sticks by the rib," rendered literally, means that it is so difficult of digestion that the stomach has hard work to get rid of it after it has been received.

THE AMERICAN HOG.

[WHATEVER may be thought of hogs of other nationalities, it is coming to be quite generally admitted that the American hog is a nuisance at home and abroad, as will appear from the following, which we quote from the *Dietetic Reformer*, published at Manchester, England.—Ed.]

The American hog appears to excite a good deal of attention on both sides of the water. On his arrival in this country he is viewed with suspicion, and his condition criticised even in Parliament. He is a source of gain, it is true, at home; but he is also the occasion of some very unsavory comment. According to a Cincinnati paper:—

"The hog has become almost omnipresent. He grunts and pants in dense herds in our streets, blocking them up and getting under our wheels. His effluvia enters our noses, and the stench of the offal from the great pork-slaughtering houses pervades the air of our cities, permeates our lungs and poisons our blood. He enters into the composition of half our articles of food; he lies down boldly in our meat-platter; he gets into our pies and cakes, making a sad mess of them. He is likewise at the bottom of much of our dyspepsia and biliousness. We cannot es-

cape him. He is everywhere, dead or alive. We eat hog, breathe hog; our midnight slumbers are disturbed by the yell of his drivers, "making night hideous;" and, finally, our humane sensibilities are shocked by his cries as he is being offered an unwilling victim to our swinish appetites."

After reading the complaint of this nuisance over yonder, we are the more ready to appreciate the happily expressed verses of Sir Charles Isham on the corresponding nuisance at this end:—

"What a pity they began
Importing this 'American';
John Bull ate twice too much *before*,
But now the Yankees cram him more,
And make his yellow money go
In that which he so well can grow.
If with their beef they well can fill him,
They little care how soon they kill him.
They do n't care how they overfeed him,
And say 'the doctor then may bleed him.'

"Oh! what a horror, what a grief,
To poor John Bull, is Yankee beef!
How much more of it will they send him!
Why cannot Parliament defend him?
The wise ones of us have found out
With butcher's meat we swallow gout,
And other nasty things besides.
But many truths the world derides—
Thus with our far too carnal mind
We now are fast becoming blind,
And, like ferocious beasts of prey,
Eat beef and mutton day by day.

"Why not encourage more the dove,
Who thrives on grain, and symbols love?
We, then, although devoid of wings,
Might soon attain to higher things."

MISTAKES CONCERNING ALCOHOL.

ALCOHOL, given in the form of beer, wine, or whisky, has in every case the same destructive tendency. I am well aware that some physicians claim a power for alcohol which it does not possess. They prescribe it as a restorative, and assert that in wasting diseases it is useful in arresting or preventing waste of tissue; neither of which effects, I am positive, it possesses, and for these purposes it is futile to prescribe it. I am quite sure that in a state of health, there is not a single organ or tissue of the body that derives any benefit from its use; and quite as positive that it is a most destructive agent to

every organ and tissue of the body either in a state of health or disease. Most mistaken ideas have long been entertained of the efficiency of alcohol in many diseases of the system, and its general effects upon the human body; but actual experiments have convinced several of the ablest and most profound thinkers in the medical profession that it has always and in every form proved itself the most pernicious agent that was ever employed mechanically or otherwise. Being, therefore, satisfied that its use in a state of health is never necessary, and in a state of disease it is most injurious, I have for years past abolished its use in the asylum.—*Dr. Dickson.*

A CHAPTER FOR BOYS.

Boys are scarce now-a-days. In the days of Methuselah, male human beings were still boys when nearly a century old; twenty-five years ago boys were still such until well out of their "teens;" now the interval between infancy and the age at which the boy becomes a young man is so brief that boyhood is almost a thing of the past. The happy period of care-free, joyous innocence which formerly intervened between childhood and early manhood is now almost unobservable. Boys grow old too fast. They learn to imitate the vices and the manners of their seniors before they reach their teens, and are impatient to be counted as men, no matter how great may be their deficiencies, their unfitness for the important duties and responsibilities of life. The consequence of this inordinate haste and impatience to be old, is premature decay. Unfortunately the general tendency of the young members of the rising generation is to copy the vices of their elders, rather than the virtues of true manliness. A strong evidence of this fact, if there were no other, is the unnaturally old-looking faces which so many of our boys present. At the present time the average boy of twelve knows more of vice and sin than the youth of twenty of the past generation.

It is not so much for these human mushrooms, which may be not inaptly compared to toadstools which grow up in a single night and almost as speedily decay, that we write, but for the old-fashioned boys, the few such

there may be, those who have not yet learned to love sin, those whose minds are still pure and uncontaminated. Those who have already begun a course of vice and wickedness we have little hope of reforming; but we are anxious to offer a few words of counsel and warning which may possibly help to save as brands plucked from a blazing fire, those whose moral sense is yet alive, who have quick and tender consciences, who aspire to be truly noble and good.

What are Boys for? This question was answered with exact truthfulness by a little boy, who, when contemptuously accosted by a man with the remark, "What are you good for?" replied, "Men are made of such as we." Boys are the beginnings of men. They sustain the same relation to men that the buds do to full-blown flowers. They are still more like the small green apples which first appear when the blossoms drop from the branches, compared with the ripe, luscious fruit which in autumn bends the heavy-laden boughs almost to breaking. Often, like the young apples, boys are green; but this is only natural, and should be considered no disgrace to the boys. If they grow up naturally they will ripen with age, like the fruit, developing at each successive stage of life additional attractions and excellent qualities.

Boys the Hope of the World. A nation's most valuable property is its boys. A nation which has poor, weakly, vicious boys will have still weaker, more vicious and untrustworthy men. A country with noble, virtuous, vigorous boys, is equally sure of having noble, pious, brave, and energetic men. Whatever debases, contaminates, or in any way injures the boys of a country, saps and undermines the very foundation of the nation's strength and greatness. Save the boys from vice and crime, give them good training, physically, mentally, and morally, and the prosperity of the nation is assured.

Man the Masterpiece. When a skillful artist perfects a work of art, a painting, a drawing, a statue, or some other work requiring great talent and exceeding all his other efforts, it is called his masterpiece. So man is the noblest work of God, the masterpiece of the Almighty. Numerous anecdotes are told of the sagacity of dogs, horses, ele-

phants and other animals, of their intelligence and ingenious devices in overcoming obstacles, avoiding difficulties, etc. Our admiration and wonder are often excited by the scarcely less than human wisdom shown by these lowly brothers of the human race. We call them noble animals; but they are only noble brutes, at best. Compared with man, even in his most humble form, as seen in the wild savage that hunts and devours his prey like a wild beast, a lion or a tiger, they are immeasurably inferior. And in his highest development, man civilized, cultivated, Christianized, learned, generous, pious, certainly stands at the head of all created things.

Boys, do you love what is noble, what is pure, what is grand, what is good? You may each, if you will, become such yourselves. Let us consider for a moment

How a Noble Character is Ruined. A noble character is formed by the development of the good qualities of an individual. A bad character is formed by the development of bad traits, or evil propensities. In other words, sin is the cause of the demoralization of character, the debasing of the mind, the loss of nobility of which we see so much around us in the world. Sin is the transgression of some law. There are two kinds of sins: those which are transgressions of the moral law, and those which are transgressions of physical laws. Both classes of sins are followed by penalties. If a person violates the laws of health, he is just as certain to suffer as though he tells a falsehood, steals, murders, or commits any other crime. Perfect obedience to all of nature's laws, including of course all moral laws, is necessary to perfect health and perfect nobleness of character. The nature of these laws and the results of transgression will be understood after we have taken a hasty glance at

The Marvelous Human Machine. All the inventions and devices ever constructed by the human hand or conceived by the human mind, no matter how delicate, how intricate and complicated, are simple, childish toys compared with that most marvelously wrought mechanism, the human body.

In order that an individual human being may live and develop, it is necessary that he should eat, drink, digest, and assimilate, and

that he should be able to move about, to perceive,—that is, to hear, see, feel, smell, taste, determine weight and distinguish temperature,—to think, and to express ideas in language. In order to keep his vital machinery in order, it is necessary that the body should also be able to repair injuries which may occur in consequence of wear or accident, and to remove out of the way worn-out material which would otherwise obstruct the working of the delicate machinery of which his body is constructed. Each of these functions requires special organs and apparatuses to carry on the work.

How a Noble Character and a Sound Body Must Be Formed. By obeying all the laws which relate to the healthy action of the body and the mind, a noble character and a healthy body may be formed. Any deviation from right will be sure to be followed by suffering. A boy who carefully heeds the advice of good and wise parents, who avoids bad company, who never indulges in bad habits of any sort, who cultivates purity, honesty, and manliness, is certain to grow up into a noble, manly youth, and to become an intelligent, respected, virtuous man.

The Down-Hill Road. In every large city, and in small ones too, even in little villages, we can scarcely step upon the street without being pained at meeting little boys who have perhaps scarcely learned to speak distinctly, but whose faces show very plainly that they have already taken several steps down the steep hillside of vice. All degrees of wickedness are pictured on the faces of a large proportion of the boys we meet upon the streets, loitering about the corners, loafing in hotels, groceries, and about bar-room doors. Everywhere we meet small faces upon which sin and vice are as clearly written as though the words were actually spelled out. Lying, swearing, smoking, petty stealing, and brazen impudence are among the vices which contaminate thousands and thousands of the boys who are by-and-by to become the men of this country, to constitute its legislators, its educators, its supporters, and its protectors. Is it possible that such boys can become good, useful, noble, trustworthy men? Scarcely. If the seeds of noxious weeds can be made to produce useful plants or beautiful flowers, or if a barren,

worthless shrub can be made to bear luscious fruit, then may we expect to see these vicious boys grow up into virtuous, useful men.

But the vices mentioned are not the worst, the traces of which we see stamped upon the faces of hundreds of boys, some of whom, too, would scorn to commit any one of the sins named. There is another vice, still more terrible, more blighting in its effects, a vice which defiles, diseases, and destroys the body, enervates, degrades, and finally dethrones the mind, debases and ruins the soul. We shall not explain here the exact nature of the sin, as very few boys are so ignorant or so innocent as to be unacquainted with it.

This sin is one of the vilest, the basest, and the most degrading that a human being can commit. It is worse than beastly. Those who commit it place themselves far below the meanest brute that breathes. The most loathsome reptile, rolling in the slush and slime of its stagnant pool, would not bemean itself thus. A boy who is thus guilty ought to be ashamed to look into the eyes of an honest dog. Such a boy naturally shuns the company of those who are pure and innocent. He cannot look with assurance into his mother's face. It is difficult for any one to catch his eye, even for a few seconds. He feels his guilt and acts it out, thus making it known to every one. Let such a boy think how he must appear in the eyes of the Almighty. Let him only think of the angels, pure, innocent, and holy, who are eye-witnesses of his shameful practices. Is not the thought appalling?

The Bible utters the most solemn warnings against sexual sins. The inhabitants of Sodom and Gomorrah were destroyed by fire and brimstone for such transgressions. For similar vices the wicked inhabitants of Palestine were destroyed, and their lands given to the Hebrews.

Those who imagine that they "have a right to do as they please with themselves," so long as no one else is immediately affected, must learn that we are not our own masters; we belong to our Creator, and are accountable to God not only for the manner in which we treat our fellow-men, but for how we treat ourselves, for the manner in which we use the bodies which he has given us. The man who

commits suicide, who takes his own life, is a murderer as much as he who kills a fellow-man. So, also, he who sins against himself in the manner we are considering, is a commandment-breaker.—*Plain Facts.*

PROPER DIET FOR CHILDREN.

[THE following remarks by Dr. D. B. St. John Roosa, one of the most eminent physicians of New York City, respecting the proper diet of children in early life, are of very great importance, and should be carefully heeded by every one who has the care of children. We are thoroughly convinced by personal experience that Dr. Roosa is correct in his statement that milk and farinaceous articles, including fruit, of course, are the only proper foods for children. There can be no doubt that many of the diseases of early life, the nervousness, the dwarfed development, the scrofula, and numerous other types of ailments which particularly affect small children, are chiefly due to the improper use of flesh food. The idea that meat is the most nourishing of all foods, is a very great mistake. Children need a nourishing, wholesome diet, but not one which is stimulating. In milk, oatmeal, cracked wheat, Graham bread, barley, and similar articles, we have food which is not only the most wholesome and easy of digestion, being suited to the capabilities and requirements of the young child, but that which is the most nourishing also.—Ed.]

"Here is another case of disease of the cornea. This baby is twenty months old. There is a white spot over the center of this little girl's pupil. It is soft looking, and I therefore know that it is recent. The child has nasal catarrh. It was weaned when six months old, and it is now just cutting its eye teeth. The mother says it is being fed with whatever there is upon the table; that it receives a little tea and coffee, and that it is allowed to suck pieces of meat, all of which is wrong. Do not allow it among your patients, gentlemen. If the good Lord had wished us to eat meat at the age of twenty months, he would have given us a full set of teeth ready for use at that time.

"Dr. Leaming, of this city, has for some

years had charge of an asylum in which large numbers of children are received and cared for, and he does not allow one of them to have anything except milk, and substances which can be dissolved in milk, until they are seven years of age.

"Every physician will, under rare circumstances, prescribe beef juice for infants, very much as brandy is prescribed upon rare occasions for small children, and I shall not quarrel with them upon that point. But I have a decided opinion that, under ordinary circumstances, no child should have anything except milk and farinaceous food until it has been provided with teeth with which to prepare other articles of diet for the stomach. Follow nature in your practice in ophthalmic as well as in every other kind of disease. I will engage, if this mother, who is anxious for her child, will listen to what I say about feeding it hereafter with milk, barley, farina, corn-starch, hominy, with perhaps a small quantity of sugar, that the teething will be easier, the bowels will be more regular, and diseases of the cornea will be less liable to occur."

UNHEALTHY SCHOOL-ROOMS.

THE Medico-Legal Society of New York has issued a report on school hygiene which has more than a local interest. Some time ago this society appointed a committee, consisting of well-known physicians, to investigate health questions connected with the public schools, and its report contains many statements calculated to surprise the public. The committee find that during the vacation months there is a marked decline in the death rate from scarlet fever, but as soon as the schools open the disease increases its ravages. The chairman of the Health Committee of the Brooklyn Board of Education remarks that over 3,000 children disappear from the time of entering the lowest grade and that of promotion to the next, and assigns the loss to the unsanitary condition of the schools. In many of our own schools, more in the country than in the cities, the want of ventilation is plainly apparent to any one entering them from the fresh out-door atmosphere. The class rooms are frequently crowded with children, many of whom,

either in person or clothing, are not over cleanly; the windows are kept closed to prevent a draught, and a large stove, the exhalation from the children's persons, and the carbon from their breaths, quickly convert the air of the room into a most subtle poison, and it is no wonder that delicate children exposed to such an atmosphere day after day, die, and the teachers become delicate and have to resign or wearily drag on, incapable of giving their best energy to their work.—*Hebrew Leader.*

TOBACCO-USING

A RELIC OF BARBARISM.

THE origin of a custom which has enslaved many millions of human beings in its toils, which has within a few centuries fixed itself so firmly upon the race and become so wide-spread as to be practically universal among mankind, whether civilized or savage, cannot be without interest to those who are users of the weed, as well as to those who wage war against this evil practice. The latter, especially, will find in the ignoble origin of tobacco-using an argument of no little force against this vile habit; and it is for this purpose particularly that we write.

Tobacco-Using Discovered.—In the month of November, 1492, when Columbus discovered the island of Cuba, he sent two sailors to explore it, who reported, when they returned, among many other strange and curious discoveries, that the natives carried with them lighted fire-brands, and puffed smoke from their mouths and noses, which they supposed to be the way the savages had of perfuming themselves. They afterward declared that they "saw the naked savages twist large leaves together, and smoke like devils."

To civilized human beings this was the first sight of the vile habit which has become so common that every city, town, and village is actually perfumed, or more properly fouled, with the vile stench of the poisonous weed. The impression made upon the unsophisticated Europeans was evidently not greatly in favor of the custom, since they compared the smoking Indians to devils.

Originating with the wild barbarians of

America, the smoking habit was after some years introduced into Europe, and receiving the sanction of physicians who just at that time chiefly occupied themselves in searching for some new nauseous compound with which to experiment upon the lives of their patients, it was rapidly adopted, not only by the lower classes, but by those in high authority, even princes and nobles participating in the new intoxication.

Origin of Snuff-Taking.—It appears that the taking of tobacco in the form of snuff was also discovered among the savage natives of this continent upon the second visit of Columbus to America, in 1494. A Roman friar, named Pane, who accompanied the expedition, thus describes the custom as it then existed among the Indians: "After reducing the leaves to a fine powder, they take it through a cane half a cubit long; one end of this they place in the nose, and the other upon the powder, and so draw it up, which purges them much."

The purging referred to evidently describes the violent sneezing which resulted from the inhalation of the powdered poison. If the sailors thought that the smoking savages appeared "like devils," they certainly must have been ready to compare a party of sneezing Indians to a group of lunatics. However, it must be confessed that the charge of lunacy could not be applied to the ignorant, barbarian snuff-takers with one-half so much propriety as to their civilized and enlightened, but certainly most unwise, imitators. How so filthy, unnatural, and eminently disgusting a habit could ever have been cultivated by rational beings is a most profound mystery.

Origin of Tobacco-Chewing.—In 1503, when the Spaniards landed in Paraguay, the natives attempted to repulse them, and came out against them in large numbers, beating drums, throwing water, and "chewing herbs and spurning the juice toward them." The herb employed was tobacco, and the object of its use in the peculiar manner indicated was to get the poisonous juice into the eyes of the intruders and thus disable them by depriving them of sight. From this it would seem that tobacco-chewing was first practiced as a means of defense, for which purpose the ex-

pectorated juice was undoubtedly quite effective. We have seen modern tobacco-chewers whose copious expectoration made it next to impossible for any one to approach within several feet without being soiled with the vile juice. In the days when warfare was carried on by hand-to-hand combat we can very readily understand that a wild Indian filling the air about him in all directions with poisonous, irritating, filthy, tobacco-juice, would be a very formidable object.

The Inventors of Pipes and Cigars.—The first smokers employed what was practically identical with the modern cigar. Dry tobacco leaves were made into rolls and wrapped with the leaves of Indian corn, one end being lighted, and the other placed in the mouth. Pipes were also employed, those used in North America being shaped almost exactly like the letter y, except that the stem was longer and the forked end was symmetrical. In use, the forked end was placed in the nostrils, and the other end in the dense smoke arising from tobacco leaves placed on glowing coals. In Mexico and South America pipes almost precisely like those now in use, with numerous other forms, were employed in the same way in which pipes are now used.

Thus it appears that tobacco-using, together with the implements of its use and all the different modes of taking it, originated wholly with the heathen barbarians who roamed like wild beasts over the plains and through the dense forests of this continent four centuries ago. Civilized men have made no improvements or discoveries of any account in connection with its use; they have simply followed the example of those naked savages whom the discoverers of America saw chewing, snuffing, and smoking "like devils" almost four hundred years ago. It is evident, then, that tobacco-using is a barbarous custom in the fullest sense. As to how savages learned the use of the weed, history does not give us any hint; but the fact that pipes and snuff-taking tubes are found in their most ancient burial mounds, which are often surmounted by huge trees which must have required many centuries for their growth, is evidence of its great antiquity; and in this habit we may unquestionably find one of the causes which have reduced the

American savage to his present degraded and deteriorated condition.

Reader, do you smoke, chew, or snuff the filthy weed, we would ask you to pause for a moment between your whiffs, or before you renew your quid or take a new pinch of the delectable poison, and consider whether it is worthy of the dignity of an intelligent, enlightened, cultivated human being to spend his money, waste his time, and squander his health in imitating a vice which originated with ignorant, degraded savages, and remains a relic of barbarism which has been engrafted upon civilization?—EDITOR.

HEALTHY WOMEN.

A writer, in urging the necessity for more attention to physical culture, notes as a favorable sign the fact that "the pale and interesting" type of female beauty is fast losing its popularity, and that men of position and influence are declaring for the healthy standard of womanly beauty, such as was ever recognized by Greece and Rome. This is certainly an important and happy change in public taste, and already the effects of it are to be detected in an improved condition of feminine health; for it will hardly be denied that on an average the women of to-day are physically superior to what they were a few years ago when tight-lacing and similar destroying customs prevailed. Young women take more exercise than they formerly did. They ride and walk more, and are more in the open air. They have not the insane dread of the sun's rays which they once had. But there is much room for improvement yet. Many homes are still presided over by invalid wives and mothers, who furnish a constant spectacle of sadness and misery to their families and friends, and are a subject of unlimited expense to their husbands. In such homes, the greatest of all blessings that could be hoped for would be the health of the mistress restored; but too often it is the one blessing which never comes.

American homes, more than any other, perhaps, in the world, have been saddened by sickly women. If this will be so no longer, it will be a great blessing to the nation. And the remedy is simple. American men are as

strong and healthy as those of other nations; there is no reason why American women should not be. All that is needed is a proper attention to dress and exercise. Let women dress, as men do, so that their bodies shall not be squeezed and pressed together, but have free room for motion, and let them go out into the air and sunshine, as men do, and exercise their bodies, and the race of American women will not become extinct, as it once threatened to do. On the contrary, it will be improved, built up, and beautified, and a time will shortly come when a healthy man will not have to hunt a whole country over to find a healthy wife. We are on the right track now; all that is needed is to go ahead, and the results will soon be manifest. Women will die to be in fashion; therefore let the fashion of female beauty be vigor and strength, and all the ladies in the land will be swinging dumb-bells, practicing archery, riding on horseback, and walking for a wager, but they will be in style.—*Selected.*

SMOKING BY BOYS.

How few persons realize that the money spent on tobacco in this country would feed and shelter every poor family in the land; that thousands of the finer organizations among men awaken in middle life to the consciousness that their brains are being gravely affected by the use of tobacco, only to struggle in vain against its fetters; that, directly and indirectly, tobacco hastens the death of large numbers of persons every year.

With these facts in view, parents should remember that the habitual use of tobacco has reached down to mere boys, many of whom strut the streets with cigars in their mouths, while others think it manly to have their smoking-parties.

Now, excesses of every kind during the period of growth smite fearfully at the very foundation of future health and life.

It is well known that Germans are inveterate smokers. They are often pointed at as a proof of the harmlessness of the habit. But a correspondent of the London *Times* calls attention to the fact that the authorities in Germany are taking measures to arrest the practice among the young, on the ground, as attested by the German physicians, that it

incapacitates them for the defense of their country.

"Smoking," he adds, "weakens the powers of the stomach at that important crisis of development when the largest quantities of food have to be assimilated to build up the growing frame. It lowers the vitality of the heart. Muscle, energy, endurance, indeed all that makes the man and the soldier, are thus at stake." Not only parents, but boys themselves, should heed this warning.—*Sel.*

A SANITARY POEM.

OUR drains! our drains! our foul, leaking drains!
They poison the air of our streets and our lanes,
In city and suburb, in hamlet and town,
'Neath dwellings and workshops, wherever laid down.
Can reason still fail young and old to convince
That sewer gas slaughters both peasant and prince?
How can we have health if the blood in our veins
Is poisoned by breathing foul air from the drains?

Our drains! our drains! our badly made drains!
That give out their smells ere and after it rains,
Sickening the robust man walking the flags,
Prostrating the half-nourished worker in rags;
Swift stealing through panels where fashion and rank
Sit proudly on cushions, in drives from the bank.
But headache and faintness and death-boding pains
Go home in the carriage to tell of the drains.

Our drains! our drains! our death-dealing drains!
Choked up, with no outlet for rotten remains;
Chronic hot-beds of typhoid, full of foul silt,
Reflecting our ignorance, proving our guilt,
And showing that we have been riding rough-shod
O'er Nature, and morals, and maxims of God.
For pure air and water, in cities and plains,
Spell health, if we keep right our dwellings and
drains. — *Young Folks' Rural.*

Health and Pluck.—A somewhat varied experience of men has led me, the longer I live, to set less value upon mere cleverness, to attach more and more importance to industry and to physical endurance. Indeed, I am much disposed to think that endurance is the most valuable quality of all; for industry, as the desire to work hard, does not come to much if a feeble frame is unable to respond to the desire. Everybody who has had to make his way in the world must know that while the occasion for intellectual effort of a high order is rare, it constantly happens that a man's future turns upon his being able to stand a sudden and a heavy strain upon his

powers of endurance. To a lawyer, a physician, or a merchant, it may be everything to be able to work sixteen hours a day for as long as is needful without knocking up. Moreover, the patience, tenacity and good humor, which are among the most important qualifications for dealing with men, are incompatible with an irritable brain, a weak stomach, or a defective circulation. If any one of your prize winners were a son of mine (as might have been the case, I am glad to think, on former occasions), and a good fairy were to offer to equip him according to my wishes for the battle of practical life, I should say: "I do not care to trouble you for any more cleverness; put in as much industry as you can instead; and oh, if you please, a broad, deep chest and a stomach of whose existence he shall never know anything." I should be well content with the prospects of a fellow so endowed.—*Huxley.*

Home-Made Medicine.—The following story we cannot vouch for, but it has become current, and if not true at least possesses the advantage over many fictions that it may have been true. It very naturally excites the query whether the imagination is not a very important element in a good many cases which receive such wonderful benefits as are sometimes attributed not only to "iron bitters," "iron tonics," but a host of other patent tinctures, compounds, and nostrums.

"A Rhode Island lady who was in the habit of taking large quantities of the tincture of iron found great benefit from the medicine, but also incurred large bills at the apothecary's, which her husband found it rather difficult to meet. Instead of brutally cutting off her medicinal supplies, this ingenious and humane man conceived the plan of manufacturing tincture of iron in the secrecy of his own woodshed. He therefore procured a pail, placed in it two pounds of old iron nails, three drachms of iron barrel-hoops and four scruples of miscellaneous iron. To this he added one gallon of *agua pura*, and stirred the mixture with a pitchfork three times a day for a week. At the end of that time he drew off the water with a siphon, placed it in pint bottles, and labeled it '*Tinct. Ferri*. Use as directed.' His wife took his

home-made tincture without any suspicion that it was not purchased at the apothecary's, and derived all the benefit from it which she had derived from the apothecary's own tincture. Although she had been afflicted for several months with extreme weakness, her strength revived under the influence of the tincture to such an extent that at the end of three weeks, when she accidentally caught her husband in the act of filling her bottle from the pail in the woodshed, she was able to lift a heavy pitchfork, and, after wielding it with great vigor for ten minutes, to assist the hired man in dragging her husband into the house, where she subsequently applied arnica and brown paper to nearly two-thirds of his entire surface."

Why a Tobacco-User Reformed.—A humorous story was related a long time ago in *The Christian Advocate*, of New York, by a gentleman whose reform from chewing tobacco arose from his mishaps in trying to be cleanly. Once he called upon a friend and was ushered into an upper room, and when fairly seated he found that he had forgotten to remove his quid from his mouth on entering, and his mouth was nearly filled with saliva. He looked round for a spittoon, but could not find any; he tried the window, but it would not move; there was no open fireplace in the room, and now what should he do? His mouth was bursting with fullness; he thinks of his handkerchief, but that, too, was missing; now he must swallow his spittle, at the risk of making himself sick, or must empty his mouth upon the carpet. At that moment he hears the approaching step of his friend, and he must address him. Frantic with perplexity, he rushes once more to the window, and by a giant effort he throws it up a little, thrusts his head out, and spits—spits upon the head of a lady who happens to be passing in the crowded street, and spoils a new bonnet! Immediately there was what we call "a time," on the sidewalk, made by the screams of the lady who had received this baptism of filth, and the outcries of sympathizing passers-by. The rest may be imagined; but it cured this one case of tobacco mania at the small expense, perhaps, of twenty dollars!

Not Used to Bathing.—The following anecdote related by a French paper suggests that the average Frenchman may be as little acquainted with the bath as are many Americans:—

"The surgeon had prescribed a bath for a soldier who was a little ailing, and ordered that he be conducted to an adjoining establishment by a sergeant. At the end of an hour's waiting at the bath-room door, the sergeant, hearing no noise, entered the room and found the soldier seated by the side of the bath-tub. The water was as it was when the soldier went into the room, except that its level had been perceptibly lowered. '*Ma foi, sergent,*' said the soldier, 'you may put me in the guard-house if you want to, but I can't drink another drop!'"

A Sanitary Catechism.—What is the chief end of man? To live long and prosper.

What is the first essential to do this? Good health.

How is it to be obtained? By using ordinary care and prudence.

What is a healthy man? A man of sense.

What is a sick man? Dr. Johnson called him a rascal; and in many cases he is a fool.

What is the first requisite to health? To have a healthy home.

What is the best security for this? To have the best of plumbing.

How can this be obtained? By employing a good plumber and paying him what his work is worth.

Here endeth the first lesson.—*The Plumber.*

A Singular Prescription.—An English doctor, who was called in to see a French marquis, and found his patient in an unwholesome condition, prescribed the external application of a certain number of gallons of warm water, with soap in proportion, and the gentle friction of a towel. "*Mon Dieu!*" cried the horror-stricken Marquis, "this is washing one's self!" "I must admit," replied the other dryly, "that the remedy has that objection."

—New York State has 21,242 licensed saloons, and but 7,000 churches.

LITERARY MISCELLANY.

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

THE TEST.

It matters not, my friend, how rich you are,
How grand or great;
How brightly o'er you shines ambition's star,
Or high estate:
It matters naught though rarest silks enfold
Your stately form,
And marble walls inlaid with gleaming gold
Shut out the storm.

But whether you have proved your noble birth
By noble deeds,
Regardless of the sneers and snares of earth,
Or useless creeds;
Whether your soul has soared in courage high,
Erect and free,
With resolution that can do or die,
Is much to me.

I care not whether you have won in fight
A warrior's fame,
Or graved in silver letters dazzling bright
A statesman's name:
It matters not that people bow the head
In flattering fear,
Or nations tremble with a nameless dread
When you are near,

But whether you have spoken words most kind,
And sown the seed
That bears rich fruitage in the human mind,
Of thought and deed;
Whether your heart has triumphed o'er its pride
With courage true,
And 'mid the lowly hearted turned aside
Its work to do;

Whether your eyes have learned to look in love
On all around,
And turning others' eyes and hearts above,
Their bonds unbound—
Reclining on the rich return that waits
For those who see
Beyond the portals of the golden gates,
Is much to me.

For he who learns to work and watch and wait—
Unvexed by any fortune, any fate—
Thus truly good is truly grand and great.

—I. Edgar Jones.

—Unless I see something beyond the grave
worth dying for, there is nothing on this side
worth living for.

THE DOCTOR'S PRESCRIPTION.

It was ten o'clock in the morning, and Dr. Saunders, who saw patients without charge up to that hour, was about to leave his consulting room, when Thomas Burns came in. Was he ill, or was he miserable, or both? He certainly had not the steady, determined walk, and upright figure, and manly, open look of a British workman who felt at ease in himself, and comfortable in the world. His clothes were dirty; why, there were even some beginnings of tatters, just peeping little holes, above the elbows and knees. His face, too, was not quite inviting. He must have lost his razor, mislaid his soap, and above all, quarreled with water—clean and cleansing, fresh and refreshing WATER.

Dr. Saunders, seeing him, laid down his hat, and sitting down, said, "What, you again, Burns! a return of the old illness, I'm afraid."

"Well, no, sir. I don't know that it is."

"Come, sit down, then," he added kindly, "and let me hear what it is. How do you complain?"

"I hardly know how I do complain, sir, but that I feel bad all over and almost like to die. As to appetite, I've none at all. I don't suppose I've eaten a pennyworth of bread this week; and nights I can't sleep to get rest anyhow, but dream continually; and I'm that weak I can hardly lift my tools, and all of a tremble almost all the while."

"Oh, Burns! it's the old story—you have been killing yourself again."

"Indeed, sir, I have not—well, that is to say, not anything that could hurt me."

"Tush, man, don't tell me so. Don't you know when I look at a man I see inside him as well as outside? You have been drinking again"—and the doctor brought his hand down on the table with an emphatic thump—"rum, gin, and the like."

"But I have not had too much, sir," persisted Burns. "I could not live if I had not

a little sometimes. Many is the day I could not do a stroke of work if I had n't a drop mornings."

"You cannot live if you *do* take it; and as to too much, when a man has once taken too much he must not talk about much or little—the least is too much for him then."

"Well, I never can do without it, that is certain."

"Man," exclaimed Dr. Saunders, starting from his chair, and standing at the fireplace,—"man, in one month do you wish your wife to be a widow and your children fatherless? One month more as you are going now and that will be a fact."

Burns looked bewildered, but did not answer.

"Do you wish your grave to be dug, and you to go down to the 'everlasting burning'? It is written, the drunkard 'shall not inherit the kingdom of God.'" Then coming toward him and taking his hand, the tears glistening in his eyes, Dr. Saunders added, in a gentle, imploring tone, "My good friend, 'turn ye, turn ye, for why will ye die?'"

"Oh! if I could give it up," groaned the unhappy man; "but it is too late now."

"Not too late, for Jesus lives, and he is 'mighty to save.' 'Is anything too hard for the Lord?' Cast yourself on the mercy of God in Christ Jesus. There is cleansing in his blood; there is power in his Spirit. Listen, it is the voice of God your Saviour, and he speaks to *you*—'Let the wicked forsake his way, and the unrighteous man his thoughts;' there is the first thing he bids you do, forsake the evil way; 'and let him return unto the Lord;' there is the second thing, return unto him as the prodigal son, who thought, 'I will arise and go to my father, and will say unto him, Father, I have sinned; . . . and *he arose, and came.*' (Read Luke 15.) 'Let him return unto the Lord, and he will have mercy upon him;' he *will*, believe it, Burns; 'and to our God, for he will abundantly pardon'—abundantly—there is a great word of promise for you, Burns. Does it not cover all the past sins, though they are more in number than the hairs of your head? 'He will multiply to pardon.' A pardon full and free, through the blood of Jesus, this is what your God offers to you to-day. Will you ac-

cept it? 'Return unto me,' he says, 'for I have redeemed thee.'"

Burns did not answer. He could not. But bowing his head on his hands he wept. There followed a few minutes' silence. Then Dr. Saunders, laying his hand gently on his shoulder, said, "Let us pray to the God and Father of our Lord Jesus Christ." They knelt side by side, and the doctor poured forth from his heart a prayer of effectual, fervent pleading with God for the soul of the poor drunkard. The sobs that shook his frame told that his softened heart went forth with each petition. And when they rose, he grasped his friend's hand and said, "God bless you, sir, for this."

Again Dr. Saunders sat down, and drawing pen and ink to him, wrote.

"I have written a prescription for you," he said, cheerfully, "and you are to be your own druggist, so it will not cost you a penny. But now, my friend, I want you to understand a little how these intoxicating drinks do you harm and not good. You see, in my profession I have studied these wonderful bodies of ours and know a little about them."

"Then, sir, if it is not making too bold to ask, why do the doctors almost always tell us to take spirits, if they do no good?"

"Ah, that is a question you may well ask, though it is hard for me to answer it. You see, the idea has taken hold of everybody that these drinks give strength, and somehow we medical men have fallen in with the popular idea, though it is certainly quite contrary to our knowledge of their effects, which are those of narcotic poisoning. I suppose we sucked it with our mother's milk. Now sit down there, opposite, and I'll look into you and tell you what is going on. You had a dram this morning—poured it down as if your body was made to be a spirit bottle. Well, first it went into your stomach, and made some inflamed places there, rendering it unfit to do its proper work of digesting your food. Then you get a foul tongue, no appetite, and grow lean."

"That is what I do, true enough."

"Next, this fiery spirit is in such hot haste that it cannot wait, like food, in the stomach to be digested, but makes its way out on

all sides through the stomach into the blood at once. And now it goes away like an express train through the blood-pipes, right up for your head, and when it has reached that terminus you know it, don't you?"

"Yes, times enough I've felt it there."

"And what does it do there? First, it makes you sing and shout and feel merry, forget your cares—not lose one whit of them—only forget, mind that. Well, this may be pleasant enough. But what more? While it adds to your mirth, it lessens the strength of your will. Now, a man's will is his power. Lessen this power, and you so much exactly lessen his self-control. That is the reason why, when you go in for only a pint and mean to come home sober, you cannot stop at the pint, and come home drunk instead."

"I never understood the reason of that before."

"And as you go on drinking and the brain gets fuller of it, it acts next on your spine, on which the lower part of the brain rests. Then your nerves tremble, your muscles grow weak, your limbs get unsteady under you, and next you are down in the gutter."

"I *have* been there, but for the last time, I hope, sir."

"Again, this fiery spirit finds its way in the blood to your lungs; what does it do there? I must explain a little to you first. Your heart is the fountain of the blood, which it sends into and receives back again from all parts of the body, at every beat, or, on an average, seventy times in a minute; thus, it goes out of the right side of the heart by the blood-pipes, which are called arteries, to all parts of the body, mending and replacing the muscle and nerve which you wear away at your work. The man whose hands work most wears away most muscle, and he whose head works most, thinking, wears away most nerve. Now, when the blood has done this useful work for us, what then? It returns back to the heart by other blood-pipes, called veins. But it does not come alone; it brings back along with it all the waste, worn-out muscle and nerve. Laden with this burden, it enters the heart, from whence it is conveyed by another set of blood-pipes into the lungs. You know we are constantly drawing fresh air into the lungs as we breathe. What

does this air do? A certain part of it, called oxygen, consumes or burns up the waste muscle in the blood, and in doing so helps to warm us, as you burn your waste chips and get heat from them. Now this spirit, that has also traveled to the lungs in the blood, is consumed much faster than the waste, and so the waste remains in the blood and is carried back to the heart, and goes out again by the arteries, the blood being thus rendered impure and quite unfit for its work of repairing the used-up muscle and nerve. And this waste with which it is loaded it is apt to deposit in the body, so producing in some persons the unhealthy fat which the advocates of strong drink ignorantly covet; while others, and more particularly spirit drinkers, grow lean.

"I have told you now only a part of the harm it does. It has a great love for the liver as well as the brain, and hinders it in its proper work of pouring out bile, which mixes with the food as it passes out of the stomach and helps to fit it for going into the blood, to keep up a supply of food of good quality. I could tell you much more if I had time; but I have told enough to show you that this spirit, which is in all intoxicating drinks, in beer as well as in brandy—the same thing, only differing in quantity—does you harm and not good."

"Indeed, sir, you have. I know a little more than I did when I came in this morning, and I am thankful to you for it."

"And now I must be off to my patients. Here, my good man, take my prescription, and mind you follow it; and let me see you again this day month and hear how it has agreed with you."

The prescription was as follows:—

"TAKE NOT

Ale, Porter, Cider, Brandy, Gin, Rum;

BUT TAKE

A sufficient quantity of water, milk, or other un-intoxicating drink, when necessary."

Burns folded his doctor's prescription, and putting it in his pocket, walked away a more resolute and a happier man.

That evening as he was returning from work, Bill Myers met him. "I say, Burns, let us turn in and have a pint together."

"No, I thank you. I am going home."

"Oh! come along, man; don't be unsocial."

"No, not to-night. I've been ailing rather lately, and I'm going to try if I'm better without it."

"Better without it! Why, you'll get as weak as a robin and as thin as a lamp-post."

"And the doctor says I shall die with it—told me so only this morning; so of two evils I mean to choose the *lesser*." And away he walked.

Yes, he was resolute. Still, it had been a hard struggle; but he had his reward in a quiet night and fewer dreams. Next morning the struggle was harder still. He craved his accustomed dram; but he took out his prescription and read it, and then Dr. Saunder's prayer with him the day before came into his mind, and he thought, why should I not pray too? Why, what an atheist I must be, living as if there were no God! for I've never bowed my knee in prayer these many years; and so kneeling down he tried to pray, but no words came. What ought he to pray for? He did not know. He half wished his wife was awake and would come down. He knew she prayed; perhaps she could help him; and yet he would not like for her to find him on his knees. It seemed strange to him to be kneeling down for such a purpose. And then again there came over him the raging thirst for his usual dram, and he groaned aloud. And now this thought rose in his heart, Why should not I ask God for just what I want now? If he is God, and if he hears when I speak, he is able to do it for me, and perhaps he will. "He will have mercy"—yes, I remember those are the very words. "O God! take away from me this accursed thirst, and have mercy on my soul." And again he prayed it; and this time the words came more earnestly, and the thirst for mercy and help seemed to become stronger than his evil thirst. His heart felt lighter, and rising up, he opened the door and went away to his work.

He got on comfortably till eleven o'clock. Then came a rub. All the men, twenty in number, at the carpenter's shop where he worked, adjourned every day at this hour for ten minutes to the public house near, for a pint. He went along with them. It would look so remarkable to remain back. Ah,

Burns, beware! In this world we must often be content to be alone in doing what is right. Walking with the many is oftentimes walking to destruction; still, he kept behind, hoping to avoid going in. He had, however, just reached the door of the "Man of Mischief," when who should come up but his friend Dr. Saunders.

"Burns, Burns, man! where is my prescription? Out of sight, out of mind, I perceive—go back, go back. God says, 'Look not thou upon it.'"

When his shopmates returned, they found Burns there before them quietly at work, and it began to be whispered that he had not gone in with them.

But at the dinner-hour the whisper rose to a positive certainty. He was actually going to drink nothing better than water! He had turned teetotaler for certain, that he had, and no teetotaler should work in that shop. They would soon teach him better manners than to come water-drinking amongst them. All this was very hard to bear, and yet Burns felt happier than he had done for a long time, and he certainly had a better appetite for his dinner. For the rest of the day his fellow-workmen avoided speaking to him, only now and then raising a laugh at his expense.

As soon as work was over, he went home. Johnny, the youngest, spied him coming, and ran in to tell mother, who could hardly believe such good news; for she had long left off looking for the comfort of his company in the evening. However, she made haste now to give him such a smiling welcome as made him feel there was something in home after all; and during the evening there came into his heart a feeling of rest and shelter there after the toils and jeers of the day. As for his supper, he thought it the best his wife had ever cooked, and she thought he did justice to it.

Next morning he was going away to work, his hand was on the door, when a voice seemed to say, Do n't live without God in the world; pray. And he knelt down at the same place as yesterday. And again with a lighter heart he set off. But soon his troubles began. If he was to be sober—and this, unless he abstained totally, past experience had taught him he could not be—he would have to fight

every inch of his way. Bob Sawyer sometimes swore at him, sometimes jeered. On one occasion he found one of his most expensive tools so injured that he could not use it, and was thereby prevented from finishing the work he had in hand at the time his master expected it. He told his master the simple truth.

"Hold on as you have begun, Burns," he replied; "I have noticed all. I only wish all my men were of your mind." This was quite a word in season to him, and cheered him greatly.

We cannot stay to follow him every day.

The month soon passed by, and on the appointed morning he presented himself in Dr. Saunder's consulting-room. Look close; where are those little elbow-holes? They have all disappeared in a new suit of clothes. Instead of swallowing his money, he has put it on him. What a fine, manly face! It does one good to look at it. The quarrel between it and water has evidently been made up, too.

"Why, Burns, what's the matter? How changed you look! Has my prescription been a failure?"

"Indeed, sir, I can never thank you enough for what you did for me that morning. I am not the same man."

"So I see. Now tell me a little about it."

"Well, sir, I am ready for my day's work with any man now; and I sleep without so much as a turn at night; and as to appetite, I am as hungry for my meals as even the children are; I have paid up my rent I had fallen behind with, and now this week my wife is getting new boots for Bob, and next week Jim is to have them also."

"Then I suppose your wife does not quarrel with my prescription?" asked the Doctor.

"She blesses God that you ever gave it to me, sir."—*British Workman*.

TEACH GIRLS A TRADE.

SURELY girls who are capable of earning a living for themselves ought to and can marry to much better advantage than those who must forever depend upon somebody to support them. While woman is free and independent, she marries for love, and love alone. But your other damsel of the useless

hand—why, she must marry anyway. If she cannot have a husband whom she loves and respects, she is obliged, by the pressure of her own helplessness, to take the best she can get, or run the risk of having no one to support her. Horrible thought! Any girl of average intellect, over twenty years old, ought to be ashamed to confess that she could not, if necessary, do something to provide for herself an honorable and independent living, no matter if her father could count his wealth by millions. Miss Faithful, who is an Englishwoman, says: "Every year thousands of my countrywomen are driven to the gates of death for bread;" and it is equally true of our country, in all its boasted freedom and refinement. A woman's stomach calls for food as well as a man's, no matter how much politeness may ignore the fact. So I say, in all justice and decency, give to all girls a trade, or occupation of some sort, without hanging like a mill-stone about the neck of a man.—*Sel.*

TRUE EDUCATION.

THE experience of a number of years as an instructor has convinced us that very few people entertain correct notions respecting the character of true education and its real value. The majority of persons suppose that education consists in the accumulation of facts, a mere memorizing of names, events, qualities, etc. Hence it is that parents who have children in whose education they are interested are usually anxious that their teachers should cram into their heads as many facts as possible in the shortest space of time.

We have seen scores of college graduates who were supposed to be very learned, who had very little real education indeed. True education is not simply a knowledge of facts; any bookworm may accumulate facts. A man may become an encyclopedia of facts, and still be very far from being an educated man. Education is culture. It is such a training of the faculties of mind and body as will develop all the power for usefulness, for enjoyment, for accomplishing the real purposes of life, that is possible for an individual.

For the accomplishment of this, thorough training and careful discipline are chiefly es-

sential. The facts which are imparted to a student by the true instructor are of far less consequence to him than the discipline which he receives while acquiring the facts, and which enables him to acquire other facts by himself, and in such a manner as to make them available for profitable use. If a student learns in school *how to study*, he has acquired what is of far greater value to him than the mere acquisition of knowledge without proper culture.

A writer in *Barnes' Educational Monthly* has compiled the following valuable opinions concerning education which have been expressed by various eminent men:—

“One old author says, ‘Education is a proper disposal of all the circumstances which influence character, and of the means of producing those habitual dispositions which insure well-doing.’ Another says, ‘Education is discipline or correction, culture, or instruction and exercise of the faculties of prudence and wisdom, and at last the formation of the moral disposition, or of character.’ Locke held that ‘a sound mind in a sound body is the chiefest care of education.’

“Pope has it:—

“‘Tis education forms the common mind;
Just as the twig is bent, the tree's inclined.”

“Milton indignantly descants against ‘the waste of time in our schools, with a miserable little Latin or Greek, and pleads for a virtuous and noble education, consisting in studies, exercises, diet, and music, likest to those ancient and famous schools of Pythagoras, Plato, Socrates, Aristotle, and others, of whom were bred such a number of renowned philosophers, orators, historians, poets, and statesmen.’

“John Draper says, ‘Education should represent the existing state of knowledge, and not the pretended wisdom of past ages.’ The great philosopher of Königsberg insisted that ‘the child is not to be educated for the world as it is, that it may get along in it, but that it must be brought up for humanity and a better future.’ Goethe says, ‘What is commonly called education makes of us bags filled with words, figures, and facts.’

“Montesquieu asserts that ‘education has for its foundation the same principles as the State: fear under despotism, pride under

monarchy, and virtue under a republic. And since virtue is formed by early habit, a republic must train children to simplicity and self-restraint.’

“Prof. A. R. Grote, of Buffalo, in a recent address before the American association for the advancement of science, says, ‘Education may be primarily conceived as the process of storing sense impressions in the brain; and the total condition and amount of the brain pictures we might call knowledge.’

“We believe true education to be exactly what the word indicates,—*e-duco*, a drawing out of all the faculties of our nature. It is not instruction, *in-struere*, a piling up or setting in order an army of facts or principles. It is not tabulating, arranging, or memorizing a subject. It is not learning set lessons or filling the mind with useful knowledge. It is leading the mind to think, act, judge, estimate, and reflect for itself. Agassiz said that the poorest service a teacher could render a pupil was to give him a ready-made answer. We believe he was right.”

True education disciplines the body as well as the mind, and thus adds vigor to both. The whole individual must be trained and disciplined together; otherwise, instead of an image of God, a distorted unbalanced development, a monstrosity.

Hindoo Regard for Life.—The religion of the believer in Buddha holds animal life almost as sacred as human. In consequence of this the Hindoos are, almost without exception, vegetarian in their habits, except that they make some use of fish. Rev. Mr. Hallam, for many years a missionary in India, informed us that when he once asked a Hindoo whom he discovered engaged in catching fish how he could reconcile his action with the requirements of his religion, the man very ingeniously replied that he did not kill the fish, he “only took them out of the water and they died of themselves.”

An exchange gives an account of a curious suit mentioned in the London papers a few years ago, between two servants of a Calcutta native merchant who quarreled over the division of their pay for “feeding bugs.” The magistrate’s inquiry elicited that the native merchants were much annoyed by certain pes-

tiferous insects at night. But religion forbade that these should be killed, hence servants were employed to sleep (lie awake, more likely) in the employer's bed an hour or two before his time for retiring, that the vexing appetite might be somewhat cloyed, and the master have a better chance for rest. It was the wages for this service of respect to the sacredness of insect life that the quarreling Hindoos could not divide.

The Cost of Raising a Boy.—The heaviest tax that can be imposed upon a nation is one that is paid in human lives. From whatever point of view the subject may be regarded, this conclusion is irresistible. If we look at it according to purely economical considerations, we may obtain very remarkable results. It has been estimated that an actual money cost of £300 is incurred in raising a boy, cradled among the poorest classes, from birth to manhood. It does not require us to ascend very high in the social scale before we find that this estimate is trebled. If we take what we may call the cost price of the human unit at any definite time, say at £500 on arriving at maturity, the producing power of the unit in question will bear some relation to that sum; the more costly and careful education producing, as a rule, the more valuable result, as to productive power. If the laborer who earns 14s. or 15s. a week adds £50 per annum to the wealth of the country, the physician, the scientific military or naval officer, the barrister, or the engineer, may look forward to the time when his yearly labor will be worth more than a hundred times that amount, even if appraised only by the price he is actually paid for his time. Taking any producing individual, whether valued at £50 or at £5,000 per annum, at any period of his career, no income tax to which he can be subjected can approach in its pressure the extravagant tax of death. For the payment of that tax at once annihilates the total earning power of which there was, until that moment, a fair mathematical expectation.—*Popular Science Monthly.*

—The wise man is happy in his own approbation; the fool, in the applause of his fellows.

POPULAR SCIENCE.

—Switzerland has a railroad on which the cars are run by water-power.

—The amount of heat annually received from the sun is sufficient to melt a crust of ice covering the earth to a depth of eighty feet.

—A scientist asserts that the so-called shooting stars are not larger than kernels of corn or hazel-nuts. It is only their combustion that makes them visible.

—Samples of hard wood made from straw have lately been exhibited in Illinois which are susceptible of all the polish and finish of the hardest black walnut or mahogany. Wood thus made is impervious to water, and is nearly fireproof.

—It is asserted by a French writer that stammerers are more abundant in the south of France than elsewhere, there being 12 or 13 cases in every 1000 people, while in other localities the proportion is only one to the 1000. He believes close inter-marriage to be the cause.

—An inventor has constructed a machine for raising cream by the centrifugal process which accomplishes in fifteen minutes the result formerly requiring twenty-four hours. In a recent experiment, the cream of milk was extracted and made into butter within an hour after it was taken from the cow.

A New Asteroid.—The 28th of July last, Prof. Peters discovered a new asteroid, which makes the number now known just two hundred.

Chlorine not an Element.—Prof. Meyer, of Zurich, has been engaged in a long series of chemical experiments which seem to show that chlorine is not an element, but a compound, of which oxygen is undoubtedly one of the components.

Artificial Gems.—The manufacture of artificial diamonds and other gems has become a great industry in France, in some parts engaging the attention of the whole population. By means of a recent invention the imitation is made so complete that detection from genuine diamonds can only be made by the most experienced experts, the only apparent difference being in the greater symmetry and beauty of the artificial gems.

Elephant Ants.—There is in India a species of black ant of which there occur very large specimens which are exactly like the others, differing from them only in size. A resident of the country where they are found writes of these curious insect giants, "They seem to act as the elephants of the community, carrying loads that the small ones cannot lift. Sometimes one of these elephants may be seen returning to the nest with several of the ordinary size clinging on its back."

The Sound-Box Tree.—A traveler describes a curious tree which grows on the island of St. Thomas. Its chief peculiarity, from which it derives its name, is its curious fruit, which is shaped somewhat like an orange, being made up of segments containing seeds. "When the fruit has become quite ripe and dry, suddenly all the capsules split up the back, opening with a strong spring, and the whole fruit flies asunder, scattering its seeds for a distance of several yards, and making a noise like the report of a pistol."

Magnets in Flour-Mills.—One of the most recent applications of the magnet is in flour-mills for the purpose of collecting the small particles of iron which find their way into wheat in various ways. Heretofore so great a difficulty has been experienced from this source that it had become a serious question whether it would not be necessary to discontinue the use of binding machines which make use of wire. There is now no objection to their use, and no possibility that any particle of iron, no matter how minute, shall find its way into the flour, as the magnet attracts with absolute certainty the smallest bits of iron and steel.

SHAKE-CHARMERS.

MUCH has been written by travelers about the wonderful performances of professional snake-charmers in Eastern Countries. A scientific writer in a recent article in *Nature*, asserts that the wonderful powers claimed by these persons are not really possessed; but that they are expert jugglers. He says:—

"I had not been many years in India when I had an excellent opportunity of seeing the so-called snake-charming, and of satisfying myself that it was only clever *legerdemain*. A couple of snake-charmers appeared in the compound and offered to purge it of all the

snakes it contained. I embraced the opportunity with great alacrity, but insisted on dictating my own terms, which, after some demur, were agreed to. I selected one man (the other remaining with the baskets), and offered him the choice of accompanying me, either in his *dhotee*¹ only, and a bare head; or with his *pugree*² and a *langootee*.³ He chose the latter costume, soon made his toilet, and stood before me all but naked. I satisfied myself that the *langootee* could not possibly conceal a snake, and I had yet to find whence the reptile could, or would be produced. So we proceeded to business, accompanied by a crowd of gaping servants. I led the way to a great prostrate trunk, beneath which a cobra (imaginary) was said to lodge, and here he started his rude bagpipe, and began his incantations and gesticulations. But the snake refused to be charmed, for the very good reason that it was not there, and the charmer could not evade my searching gaze. He now took the lead, and drew up before a tempting looking hole in a bank, where he felt sure he could seduce a snake. 'Very well,' said I, and we formed a semi-circle, in the middle of which he stood, and resumed his incantations. Suddenly, to divert my gaze, he pointed to the hole, and exclaimed, 'Dekho, sahib!' (look, master), and in a moment, extracted (apparently) a cobra from it. But he did not see that in that moment I had observed his hand, like a lightning flash, extract a snake from the folds of his *pugree*, and simultaneously appear to extract it from the hole. The *modus operandi* was clever *legerdemain*, but unmistakable cheating. One of my servants saw the trick too, and was about to exclaim, but I silenced him with a gesture, and appeared convinced at the marvel. 'Now,' said I, 'as you have found the snake, you must prove to me that it is poisonous,' and so a poor chicken was sent for, and placed under a coop with the snake, but here again the snake-charmer overdid his performance, for dislocating the chicken's neck with his finger and thumb as he placed it under the coop, he immediately raised it, and exhibited the poor animal dead. If it had been struck by the snake, ten to fifteen minutes would have elapsed before death. I still seemed convinced, and on his coolly asking for the chicken for his dinner, I said I could not think of allowing him to eat a poisoned animal, and so ordered it to be buried."

¹ *Dhotee*, the voluminous waist-cloth worn by all Hindoos.

² *Pugree*, the cloth worn round the head.

³ *Langootee*, a narrow strip of cloth worn between the thighs of the male just sufficient to hide his nudity.



GOOD HEALTH.

BATTLE CREEK, MICH., NOVEMBER, 1879.

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

TERMS, \$1.00 A YEAR.

POISONED MEAT.

Of all articles of food, meat is the most likely to become poisonous and dangerous to health without any designed attempt at poisoning, or intention on the part of any one to render it unwholesome. A little neglect or carelessness, allowing decomposition to proceed a little beyond the point of safety, is all that is required to convert a portion of meat into the most virulent poison. Not long ago thirty persons were fatally poisoned in Russia by eating fish which had thus become unfit for food. Persons who eat canned fish are constantly exposed to this danger, which is not always easy of detection, since the changes which take place are such as cannot always be discovered without a critical examination.

Very recently the people of Chicago have been not a little alarmed by the discovery that they have for some time been consuming upon their tables the half-rotten carcasses of animals which, being found at the stockyards in a condition unfit for further transportation, and just ready to die, hardly half alive, in fact, from the effects of overdriving, abuse of drivers, being jostled about in poorly ventilated railway cars with insufficient food and water, were taken to the abattoirs and dressed for the markets. Scores of people have been made sick by this cause, their illness being directly traced to it; and no doubt hundreds, if not thousands, have thus suffered injury whose ailments were not sufficiently pronounced to require the services of a physician, or whose diseases were attributed to some other supposed cause.

The meat which is furnished to the inhabitants of large cities, and, in fact, to those of most cities, is very inferior food at the best, being always liable to contamination with disease as the results of overfeeding, confine-

ment in close stalls, and deficient exercise of the animals before slaughtering. Many very intelligent people are raising the question whether it would not be wise to abandon meat as an article of food altogether, except in those cases which require it on account of peculiar conditions of the digestive organs, or from having been long accustomed to its use. We never enjoyed better health than at the present time, and have scarcely tasted meat for fifteen years. The great variety of fruits, grains, and vegetables supply all the elements of nutrition in abundance, and these can be eaten without any fear that there may be lurking among the particles of the food foul disease germs which may give rise to the most dangerous maladies.

REST FOR HEADACHE.

DR. DAY said, in a late lecture: "Whatever be the plan of treatment decided upon, rest is the first principle to inculcate in every severe headache. Rest, which the busy man and anxious mother cannot obtain so long as they can manage to keep about, is one of the first remedies for every headache, and we should never cease to enforce it. The brain, when excited, as much needs quiet and repose as a fractured limb or an inflamed eye, and it is obvious that the chances of shortening the attack and arresting the pain will depend on our power to have this carried out effectually. It is a practical lesson to keep steadily in view, in that there may lurk behind a simple headache some lesion of unknown magnitude which may remain stationary if quietude can be maintained.

"There is a point worth attending to in the treatment of all headaches. See that the head is elevated at night, and the pillow hard; for, if it be soft, the head sinks into it

and becomes hot, which, with some people, is enough to provoke an attack in the morning if sleep has been long and heavy."

Many persons who are troubled with sleeplessness on account of headache, or too much blood in the head without pain, often find great relief from wearing a wet head-cap at night.

COMFORT FOR THE DEAF.

A CHICAGO inventor has produced an instrument which promises to afford to deaf persons a means of hearing far superior to any other heretofore known. It is called the *audiphone*. In several trials to which it has been subjected it has afforded results which were really marvelous. Persons who had been deaf from infancy have been made to hear for the first time, and many persons from whom external sounds had been shut out for periods varying from a few years to a quarter of a century have been made happy by hearing conversation, singing, and the harmonies of musical instruments again.

The audiphone is thus described: "It consists of a flexible sheet of hard rubber with a handle attached, the whole resembling very much an ordinary fan. A string is attached in such a way that the rubber plate can be bent over toward the handle to a greater or less curve. The instrument is held in the hand and the top edge laid against the teeth, the convexity of the curved plate being out."

It would be too much to suppose that all cases of deafness can be relieved by this instrument, but there is no doubt that in cases in which the difficulty is chiefly confined to the external ear, and the nerve of hearing is intact, more benefit can be derived from this instrument than from any other. We are testing the instrument on a variety of cases and will report the results to our readers. If the instrument proves to be as successful as it now appears to be, we shall be happy to recommend it to our friends who are hard of hearing, having made arrangements with the manufacturers to furnish them at their lowest rates. Two kinds are made, one for conversation, and the other for use in listening to public speaking, the prices being respectively ten and fifteen dollars.

THE USES OF PAIN.

PAIN, physical or mental suffering, is never courted. It is something from which every one shrinks with dread. The strongest spirit instinctively recoils from pain. And yet, pain, viewed from the standpoint of the physician, the pathologist, should be regarded as one of man's best friends. Pain acts to the man who is transgressing Nature's laws like a fog-bell to the indiscreet or storm-driven mariner who is approaching the breakers upon which his vessel may be wrecked. Pain stands as a light-house to warn navigators on the sea of life whenever they are approaching the shoals of overfed idleness, the rough breakers of neglect and general disregard of Nature's laws, the giddy whirlpool of passions stimulated and gratified. In a recent number, *Temple Bar*, an English magazine, offers the following excellent remarks on this subject:—

"The power which rules the universe, this great, tender power, uses pain as a signal of danger. Just, generous, beautiful Nature never strikes a foul blow; never attacks us behind our backs; never digs pitfalls or lays ambuscades; never wears a smile upon her face when there is vengeance in her heart. Patiently she teaches us her laws, plainly she writes her warnings, tenderly she graduates their force. Long before the fierce red danger-light of pain is flashed, she pleads with us—as though for her own sake, not ours—to be merciful to ourselves and to each other. She makes the overworked brain to wander from the subject of its labors. She turns the over-indulged body against the delights of yesterday. These are her caution signals, 'Go slow.' She stands in the filthy courts and alleys that we pass daily, and beckons us to enter and realize with our senses what we allow to exist in the midst of the culture of which we brag. And what do we do for ourselves? We ply whip and spur on the jaded brain as though it were a jibbing horse,—force it back into the road which leads to madness, and go on full gallop. We drug the rebellious body with stimulants, we hide the signal and think we have escaped the danger, and are very festive before night. We turn aside, as the Pharisee did of old, and pass on the other side with our handkerchief to our nose. At last, having broken nature's laws,

and disregarded her warnings, forth she comes—drums beating, colors flying—right in front! to punish us. Then we go down on our knees and whimper about it having pleased God Almighty to send this affliction upon us, and we pray him to work a miracle in order to reverse the natural consequences of our disobedience, or save us from the trouble of doing our duty. In other words, we put our finger in the fire and beg that it may not hurt.”

Intemperance and Crime.—An English journal contains the following interesting facts which show beyond the possibility of refutation that the amount of crime committed in a country is exactly proportionate to the amount of liquor drunk:—

“In 1860 the amount expended on drink was \$430,000,000; in 1876 it was \$735,000,000; the number of drunkards in 1860 was 88,000; in 1876 it was 205,000; the criminals convicted by the magistrates in 1860 numbered 255,000; in 1876 they numbered 526,000. Thus, despite educational progress, notwithstanding church and chapel extensions, and all the efforts of good men, the number of our drunkards and criminals had more than doubled between 1860 and 1876. In 1877 the drink bill fell off from \$735,000,000 to \$710,000,000, the drunkards fell from 205,000 to 200,000, and the criminals from 526,000 to 519,000. This was the first time in any year, except one, since 1860 that the crime of the country had fallen at all; it had been growing as the drink bill had been growing.”

A Vegetable Diet.—“At a recent meeting of the London Medical Society, Sir Joseph Fayrer said that he had seen in the northwest provinces of India, whose inhabitants are pure vegetarians,—eating not even butter, eggs, or milk,—some of the finest specimens of the human race, as regards strength, endurance, and physical development.

“Their food consists chiefly of peas, beans, and the like—articles of diet specially rich in nitrogen, which is one of the chief elements of nutrition.

“Hence, no person needs to starve who can secure a dinner of beans accompanied

with good brown bread. The body finds in these the main things it requires to sustain life,—heat, strength and nourishment. Indeed, few persons could find a really better diet—provided their digestion is not impaired.”

Notwithstanding the constant accumulation of evidence of this sort, there are those who still continue to repeat over and over again the threadbare arguments which have been used for the last hundred years to show that human beings cannot live in health without consuming in their daily diet a large proportion of butcher’s meat. The experience of large numbers of the human race is constantly proving this argument to be false, as is shown in the paragraphs quoted above. We would especially urge upon parents the importance of rearing children upon a diet including no other forms of animal food than milk and perhaps eggs occasionally, but not too freely. If diet affects the character, as is unquestionably the case, such stimulating articles of food as beefsteak and the usually accompanying condiments must be in a very appreciable degree unfavorable to the development of those temperate and amiable qualities of character which are most to be desired.

A Remedy for Hiccough.—A physician asserts that this troublesome, though usually thought trivial, affection may be easily cured by swallowing a lump of sugar saturated with vinegar. Lemon juice would probably do as well as vinegar.

A Depraved Appetite.—A young girl in Australia at the age of six years exhibited a most singular taste for the most repulsive objects, feeding eagerly on slugs, beetles, cockroaches, spiders, and numerous other insects. The morbid appetite continued for nearly eight years, when it wholly disappeared, almost as suddenly as it appeared.

The case is regarded as a very remarkable one by many medical men, but it seems to us no more singular than the fondness exhibited by thousands of persons for the hind-quarters of frogs; soup made from turtles, another species of reptile; certain small bi-valves from the sea which fatten on the offal of the ocean, the filth from sewers which discharge into the

ocean, and similar food. There is no accounting for the strange tastes formed by human beings. Lower animals show a far greater degree of common sense in the selection of their food than do human beings, and we rarely see our humble relatives, the birds and quadrupeds, to say nothing of reptiles and fishes, turning from their natural diet and evincing a liking for unwholesome and, for them, improper kinds of food.

Transplanting Teeth.—The obsolete practice of transplanting teeth seems to be again coming into vogue among dentists. A physician in St. Louis makes a practice of extracting teeth which are troublesome to fill and painful to the patient, filling them while out and reinserting them in the jaw, in which they soon become as fast as ever. A dentist gives a curious account of two teeth which had been knocked out by an accident, in the case of a small boy, and which were successfully replaced. The interesting feature of the case was that although the teeth were but partially grown, the effect of the operation seemed only to be to delay development for a year, when they continued to grow as usual and became as large as though they had not been thus disturbed.

Sir John Hunter successfully transplanted a tooth to the comb of a cock, where it grew for a long time.

Dangerous Kerosene Oil.—The public generally are unacquainted with the danger which attends the use of kerosene oil, such as is commonly sold in the stores. It is also not generally known that there are different kinds of oil. It is this which makes the difference in price. The cheap grades of oil are little less dangerous than gunpowder or nitroglycerine. All they require is a favorable opportunity, and they will not only explode as violently as gunpowder, but with far greater destructive effect, since, in addition to the injury which directly results from the explosion, they scatter in every direction a most inflammable substance which will be certain to set fire to anything capable of combustion on which it may chance to fall.

For several years, chiefly through the zealous efforts of Dr. R. C. Kedzie, president of

the State Board of Health, Michigan has by means of an efficient system of inspection been protected from danger from the use of cheap oils. Unfortunately, the law was so modified as to allow ample opportunity for fraud on the part of manufacturers, the result of which, as stated by an intelligent and well-informed gentleman in our hearing a few days ago, has already been made apparent in the death of three persons and the destruction of a considerable amount of property.

We recommend to all to buy the highest priced oil to be obtained. Good and safe oil cannot be obtained for less than 35 cts. a gallon. The best of all oils is a brand which stands 300° fire test. It is perfectly safe, and when used in a student's lamp, or with an Argand burner, it affords the best light which can be obtained from oil lamps of any kind.

Flesh Food and Idleness.—The *Pall Mall Gazette*, a well-known English periodical, has the following sensible paragraph respecting the very extensive use of meat in that country:—

“The consumption of meat, there can be little doubt, might be reduced with great advantage. Even hard-working laborers in Scotland manage to subsist on oatmeal porridge, and to enjoy health and strength above the average; while thousands of brawny Welshmen have thriven for centuries on a vegetable diet. Yet many persons in this country, who never did and never will do a hard day's work in their lives, gorge themselves with meat at breakfast, at luncheon, at dinner, and often at supper, to the detriment of health and purse.”

Physical Culture.—The ancient Grecians gave much attention to the culture and discipline of the body. This was especially true of the Spartans, who, as a recent writer says, “paid much attention to the rearing of men. They took charge of the firmness and looseness of men's flesh, and regulated the degree of fatness to which it was lawful in a free state for any citizen to extend his body. Those who dared to grow too soft or too fat for military exercise in the service of Sparta were soundly whipped. In one particular in-

stance, that of Naucelis, the son of Polybius, the offender was brought before the Ephori and a meeting of the whole people of Sparta, at which his unlawful fatness was publicly exposed, and he was threatened with perpetual banishment if he did not bring his body within the regular Spartan compass, and give up his culpable mode of living, which was declared unworthy of a Spartan."

Ill Effects of Tea and Coffee.—Dr. Ferguson, an eminent physician, has been investigating the influence of tea and coffee upon the health and development of children, and he does not hesitate to assert that the effect of tea "is as bad in its effects as its use is universal." He says the same also of coffee. He found that children who were allowed tea and coffee grew but four pounds a year between the ages of thirteen and sixteen, while those who had been allowed milk only, instead, gained fifteen pounds in weight during the same period.

These observations are significant, and the thoughtful reader will undoubtedly ask himself, if tea and coffee will so antagonize the vital forces as to check the growth and development of human beings when the play of the vital forces is the most active, will it not certainly have a depressing influence upon the middle aged and those advanced in life? We never knew any real good to come from the use of these popular beverages, and we have witnessed hundreds of instances in which serious effects could be clearly traced to the use of these popular beverages.

Disease a Friend.—It may never have occurred to many of our readers that disease, which we so much dread, is really a friend to which we almost owe our existence. The fevers of which so many persons die each year are really remedial processes by which waste and poisonous elements are removed from the system, in which they would otherwise accumulate to such a degree as to wholly obstruct the vital operations, and so cause death.

It not infrequently happens that chronic disease is a means of prolonging life. Not that a sick person can live longer than one who is well, but a person who is not in good

health usually takes better care of himself; he eats more wholesome food, he avoids dissipation, he keeps regular hours, and in a variety of ways he seeks to avoid the dangers to which robust persons expose themselves, unwisely presuming upon the strength of their constitutions to withstand abuse.

Notwithstanding the facts stated, it is in no sense wise for an individual to make himself sick for the purpose of prolonging life, since it is evident that if a person who enjoys good health would exercise that care of himself and attention to the laws of health that the invalid is compelled to exercise, he would not be sick, or at least his liability to illness would be very greatly diminished.

Blue Glass Again.—The blue-glass mania which so excited the country two or three years ago appeared to be about dead; but a Boston doctor, probably a quack, is endeavoring to resurrect it again in a new form. He proposes to impart certain peculiar curative properties to water by allowing the rays of the sun to fall upon it through lenses of various colors. It is claimed that different temperaments require the influence of different colored rays: for example, a person of sanguine temperament, having red hair and a ruddy skin, is said to need the blue rays. One who is pale, with livid lips, purple veins and finger nails, must have the red rays. Nervous people need the yellow rays, etc.

The fallacy of the blue-glass theory was so thoroughly exposed so short a time since we do not anticipate that any very great excitement will be created by this attempted revival of the exploded theory; nevertheless it may be that a few people will be induced to enjoy the luxury of bathing in potentized water who would not otherwise adopt this very important sanitary measure. If so, it may really be the means of accomplishing some good, even though it be a patent humbug.

Prohibition in Madagascar.—The queen of Madagascar, Ravalonana, has recently made a law against the importation of rum into that island, in response to a petition from a number of consuls, missionaries, and other influential residents in that out-of-the-way

place. From the readiness with which the request of the petitioners was complied with, it would appear that the savage queen was much more readily convinced of the evils of the rum traffic than are the great majority of the wise (?) legislators and politicians of the civilized world.

Plugging the Nose.—This is an operation which is seldom needed, but sometimes hemorrhage of the nose occurs which is so severe that no other remedy is efficient in stopping it. The following method described by the *Southern Clinic* is much more simple and practical than that ordinarily recommended:—

“Roll up a lock of cotton into a cylinder an inch or an inch and a half in length; tie a strong thread to the middle of the roll; bring the two ends of the roll together, and then, opening the nasal orifice, pass the middle or folded part of the roll into the nostril; next, with the blunt end of a lead pencil, press in the cotton roll slowly along the floor of the nose an inch or more, and rest. If the blood passes down into the throat, you may be sure the bleeding spot is behind the roll; so push in your roll further and the blood will cease to pass behind. Then, holding on to the string, pass some loose cotton into the nostril, and push it down to the plug. The cotton will swell with the moisture and arrest the hemorrhage. In a day or two the natural secretions of the nasal surfaces will loosen the plug, and it may be easily removed by the string.

—The *Scientific Record*, published at Washington, D. C., and one of the liveliest scientific journals in the country has frequent compliments for GOOD HEALTH. The following appeared in its October issue:—

“GOOD HEALTH for October is filled with interesting and timely essays on health and temperance topics, and literary and scientific miscellany. This is one of the sprightliest of our exchanges, and its mission is one of great importance.”

—The report of an Irish benevolent society says that “notwithstanding the large amount paid for medicine and medical attendance, very few deaths occurred during the year.”

MEETING OF THE MICHIGAN STATE BOARD OF HEALTH.

THE following is an abstract of the proceedings of the State Board of Health at its last meeting, based upon the manuscript report, kindly sent us by the Secretary:—

The regular quarterly meeting was held at Lansing on Tuesday, October 14, 1879, a full Board being present. The Board consists of the following members: Prof. R. C. Kedzie, President; H. O. Hitchcock, M. D.; Hon. Le Roy Packer; D. C. Jaokes, D. D.; Henry F. Lyster, M. D.; John H. Kellogg, M. D.; and Henry B. Baker, M. D., Secretary.

Dr. Kedzie presented a paper on “The Waste of Human Life,” based, principally on the recent Adrian and Jackson horrors. The paper stated in strong terms the necessity for some efficient preventive measures, and by request of the author the subject was referred to the committee on legislation, with instructions to report in regard to existing laws the necessity for additional legislation, and, if necessary, incorporate a bill with its report.

A report was read, by the Secretary, of a fatal case of acute glanders, reported by S. P. Duffield, M. D. A young man residing in Wayne County purchased a horse in Detroit, afflicted with glanders. The young man took the disease from the animal, and died a horrible death. The secretary read a report of a similar case occurring in Troy, Oakland County, reported by Dr. J. A. Post. He also read an abstract of a paper on the subject of glanders, mentioning other cases which have been reported to the Board. This paper embodied a description of the disease, the methods by which it is communicated, suggestions for its prevention by means of a prompt report of cases, the isolation of animals or persons afflicted, the destruction of animals, disinfection of surroundings, the existing laws in this State, the laws in other States, and a proposed series of regulations to be adopted by local Boards of Health in Michigan.

A communication from Dr. O. Marshall, of Lansing, was read, relative to diphtheria in the town of DeWitt, Clinton County. A map accompanied this paper, showing the number of cases, and the paper showed the

deaths at each house, the order of the occurrence of cases, and the methods by which the disease was communicated from one person to another. He was able to trace such communication in nearly every case.

A paper on "Sanitary Protection Associations in Cities and Villages" was presented by Dr. J. H. Kellogg. He offered strong arguments for a sanitary association in every city and village in the State, which shall co-operate with the local Boards of Health, wherever possible, and secure action when they are inefficient. He also gave a detailed plan for the organization of such associations.

Drs. Hitchcock and Lyster, of the special committee, reported details of a plan for a sanitary convention to be held on Jan. 7, 8, next, at Detroit, and one at Grand Rapids during the month of February, 1880.

The Convention at Detroit will be held in St. Andrews Hall on the dates named above. There will be two sessions each day, from 9 A. M. till 12 M., and from 2 P. M. till 5:30 P. M. The officers of this convention are as follows: President, Ex. Gov. Hon. H. P. Baldwin; Vice Presidents, Hon. Jas. Birney, U. S. Minister to The Hague, Wm. Brodie, M. D., Hon. Wm. L. Webber, Mrs. John J. Bagley, and Mrs. Morse Stewart; Local Secretary, C. H. Leonard, M. D., 50 Lafayette Ave., W. Detroit, Mich.

The subjects to be presented at the Detroit Convention are,

1. Abattoirs for Cities.
2. School Hygiene.
3. Ventilation of Living and Sleeping Rooms.
4. Cooking Schools.
5. Plumbing for Dwellings.
6. Prevention and Limitation of Contagious Diseases.
7. Inspection of Food.
8. Water Supply for the Family.

The subjects to be presented at the Convention at Grand Rapids are,

1. Public interest in, and importance of, General Sanitation.
2. School Architecture, in respect to its hygiene aspects and importance.
3. Sewerage—its importance—its benefits, and its dangers.
4. Sanitation of the Sick-Room.

5. Infection—the every day dangers of it, and how to prevent it.

6. Habits, in their relation to health and disease.

The minor details of the Grand Rapids convention are not yet perfected, but these and the date will be announced hereafter. The President of the convention will be the Rt. Rev. Geo. D. Gillespie, and the Local Secretary will be Arthur Hazelwood, M. D.

There will be an evening session from 7 till 9:30 o'clock at the opening of the convention; on the following morning, a session from 10 A. M. till 12 M.; and a session from 2 P. M. till 5 P. M.

Manufacturers of all kinds of sanitary apparatus or appliances are invited to send specimens of their manufactures for exhibition at these Conventions in accordance with the following regulations:—

(a) The Board of Health reserve the right to decline any article not deemed suitable. (b) A full description of each article proposed to be exhibited must be forwarded to the Secretary of the Convention with the application for space. (c) There will be no charge to exhibitors for entrance fee or for wall or floor space. (d) Exhibitors will pay all expenses of transportation, storage, placing and removal of goods, and must themselves be responsible for any breakage or damage to their articles. (e) Every article exhibited, and every model, drawing, or photograph must bear a descriptive label giving a detailed statement respecting its construction, use, and the price at which it can be furnished, and the name and address of the agent and place of sale. (f) Exhibitors may employ persons to explain their exhibits, and properly solicit orders. (g) The position of articles in the hall will be determined by the Secretary of the Convention. (h) Exhibits will be received by the Secretary of the Convention, at Detroit, from Dec. 15, 1879, to Jan. 6, 1880. The time for entering articles at Grand Rapids has not yet been determined.

Competent judges will be invited to thoroughly examine the articles exhibited, and certificates of merit will be awarded. The records of the proceedings, papers and addresses, and a catalogue of articles exhibited, with the awards of the judges, will probably

be published in the Annual Report of the State Board of Health. Reprints of the proceedings may contain several pages of advertisements for which there shall be charged the following rates: \$10.00 per page, or \$6.00 per half page, the payment of which secures the advertiser ten copies of the reprint and additional copies at cost.

The admission to the exhibits and to all the sessions shall be free.

Dr. Lyster, special committee on proposed examinations by the Board in Sanitary science, reported a plan, which, with slight modification, was adopted. It contemplates the granting of certificates to such persons as sustain an examination showing them qualified to act as health officers. The first examination will be held in July next.

Dr. Hitchcock presented a report on epidemic, endemic, and contagious diseases, mainly relating to the subject of diphtheria; also, a report on slaughter-houses, rendering establishments, etc. In this paper he recommended and proved the economy of confining this business to one establishment in each city and village.

Dr. Lyster offered a paper on the reclamation of "drowned" lands, showing their great influence on public health. In this paper he includes a translation of a paper relating to the influence on health of "drowned" lands and their reclamation in a district in France, the facts covering a period of twenty years.

Dr. Jacokes presented a paper on "warming and ventilating private dwellings and public buildings already constructed." His paper contains diagrams illustrating the methods recommended.

After the transaction of a large amount of business, the Board adjourned.

Two Meals a Day at the North Pole.—The very interesting account of the cruise of the *Polaris*, which carried the North Polar Expedition under charge of the brave and talented but unfortunate Dr. Hall, contains many very suggestive hints regarding the relation of habits to health in various climates. Among other interesting facts it is noted that during a large part of the time but two meals a day were eaten. It is generally supposed that much more food is required when the

body is exposed to cold, than at other times, and the advice of many would have been that four meals should have been taken instead of two. The men were at work most of the time while taking only two meals, and were exposed to severe cold; yet the health of all was good. Meals were taken at 9 A. M. and 3 P. M.

Increase of Near-Sightedness.—According to reliable statistics near-sightedness is rapidly increasing, especially in cities, and particularly among school children and students. In village schools one per cent of the pupils are near-sighted. In city schools more than twenty per cent are so affected; and in colleges the proportion is forty per cent. The remedy is proper attention to the hygiene of the eye, now almost wholly neglected.

Killed by Tea.—A prominent official in the British army, now doing service in Africa, recently lost his favorite horse in a manner which is both singular and instructive. A cook left a few pounds of tea in the sack which had contained it, which was filled with corn by a Kafir groom who knew nothing of the presence of the tea. Upon serving out the corn to a troop of horses, of course the last one received the larger share of the tea, which was eaten greedily with the corn. The result is thus described:—

"The animal plunged and kicked, and ran backwards, at intervals galloping madly around, finally falling into a donga, where it lay dashing its head on the rocks, and was dispatched by an assegai thrust through the heart. The post-mortem appearances indicated extreme cerebral congestion."

Is it not quite evident that what will kill a horse will certainly injure a human being, even if the quantity taken may not be sufficient to produce immediate symptoms of poisoning?

—The Russians have been trying the experiment of feeding their horses on biscuit made of peas, oats, and linseed, with very satisfactory results. These biscuit are dried and strung on wires, and can be packed in such small compass that a horse can readily carry his rations for a week.

FARM AND HOUSEHOLD.

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

Cellars.—The requisites of a good cellar are light, freedom from dampness, and a temperature low enough to prevent decay. Light is quite as essential to the healthfulness of a cellar as it is to the sitting-room or parlor. Houses built so as to admit insufficient light and air are notoriously unhealthy, and every means is resorted to, to remedy the defect, yet the majority of cellars, country cellars especially, are fifty times worse than the darkest of houses, left without either light or ventilation, the seed-beds of disease and death.

Says the *American Builder*: "There are hundreds of houses in the country that are built over dark, noisome holes of dampness, impure air, decaying vegetables and rotting timbers. These holes in the ground are called cellars, but they are so unsuited for the purpose which they are designed to serve that they deserve rather to be called 'death traps.' All houses require cellars, both for the storing room they afford and their contribution to the comfort and health of the dwellers; but there is no reason why sanitary laws should be set at defiance in their construction, neither is there any necessity for groping about in darkness, and, besides, when light is admitted there is an immunity from the danger of fire which attends carrying a light into the darkness, and which, from accident or carelessness, results sometimes in a disastrous fire."

There will be no difficulty in securing the proper requisites if the cellars are constructed above ground. If the cellar is made under ground, drain it, if the soil is damp, and underdrain the surrounding soil, so that your cellar shall always be dry; and drive out all mustiness and mold by ventilation and by abundant use of whitewash. E. E. K.

Winter Decorations.—Much may be added to the beauty of a home by the many little decorations which may be provided from Nat-

ure's stock before the blighting frosts. *The Fruit Recorder* offers a timely suggestion for preparing grasses for winter. "Gather all the varieties of grasses you can and dry them. Do not hang them with the tops down to dry stiff, but tie them in small bunches, and set them up so they may fall gracefully. You will want them of different shades; they differ naturally, but some you will wish to have retain as much as possible of a green shade; these gather before they begin to ripen. While yet green, set them in a perfectly dark closet, where it is dry. Others you will bleach. These set a few days in the warm sun, but take them in if it rains. With your grasses you will want fern leaves. The hardy ferns and maiden hair press best, and retain best their natural appearance. Next, you want bright leaves to add to the beauty of your grasses and ferns." When you have gathered them, press them with a very heavy weight for two or three weeks, changing them once or twice in dry papers.

Balky Horses.—A Society for the Prevention of Cruelty to Animals recommends the following rules for the treatment of balky horses:—

1. Pat the horse upon the neck; examine the harness carefully, first on one side then on the other, speaking encouragingly while doing so; then jump into the wagon and give the word to go; generally he will obey.

2. A teamster in Maine says he can start the worst balky horse by taking him out of the shafts and making him go round in a circle. If the first dance of this kind does not cure him, the second one will be sure to do it.

3. To cure a balky horse simply place your hand over the horse's nose and shut off the wind till he wants to go, and then let him go.

4. The brains of horses seem to entertain but one idea at a time; thus, continued whipping only confirms his stubborn resolve; if

you can by any means give him a new subject to think of you will have no trouble in starting him. A simple remedy is to tie a stout cord around the fore leg below the knee. At the first check he will generally start off, and after going a few rods, stop him and untie the cord.

Keeping Potatoes.—A farmer gives the following advice for preservation of potatoes:—“All farmers I have known have granaries or corn-cribs with lath floor and sides, just the thing to put fresh dug potatoes into. All kinds of fruit, grain, and vegetables give off a certain amount of moisture after gathering, and if they are permitted to lie in heaps on the floor in the cellar, or anywhere out of a circulation of air, will keep wet, which tends to produce decay. My practice is to dig potatoes when the ground is dry, pick them up as dug, keep them covered by a blanket from the sun while in the wagon, and place them on the lath in my corn-bin, about eighteen inches thick, and leave them there until fear of freezing, when they are placed in bins in the cellar. The air coming up from beneath keeps them perfectly dry.”

To Preserve Winter Fruit.—Apples should be gathered as late as possible before cold weather, and should be picked with the hand to insure soundness. Pack carefully in a clean, tight flour barrel, shake down gently and head up; place in a cool, shady shed that is well open to the air, or on the north side of a building, and cover up the tops with boards. Lay the barrels on their sides on rails, and if very cold cover up with corn-stalks. Keep out of doors as late as possible and then remove to a cool, dry cellar, where air can be admitted on pleasant days. Here, also, the barrels should be laid on their sides and on rails.

Pears should be allowed to hang on the trees until frosty nights, when they should be carefully hand-picked and wrapped separately in paper and packed in shallow boxes, where they can be easily examined, for some of them will probably rot. Keep covered to prevent shriveling. Place in a cool, dry cellar, and as they begin to ripen bring into a warm room and wrap in woolen cloth, and their flavor will be highly increased.

Grapes can be kept well into the winter if care is exercised. Choose the late ripening sorts, such as the Clinton, Catawba, Diana, Isabella, etc. Select the finest and most matured bunches, carefully cutting out the decayed grapes, if any, being careful not to disturb the bloom; after sweating a few days on a shelf in a cool place, pack in baked sawdust or cotton batting, one layer of sawdust and one layer of grapes, and so on; keep at an even temperature and cool as possible, at about freezing point.—*Lake View Horticulturist.*

Husk Mats.—One of the most convenient and useful of household articles for this season of the year is the husk mat. An exchange gives the following easy method of preparing one. “Take nine husks and tie the butt ends with a piece of twine; then divide them equally in three parts for braiding. As each strand is laid over, have three more husks ready to put in, leaving about an inch and a half of the butt ends out. The underside of the braid will be smooth while the upper side will be rough as possible. It takes from six to ten yards of braid for a mat, according to the size which you wish to make it. If the husks are very dry, it is easier to dip them in water as you braid. The braid must be wet when you sew it, which must be done with stout twine and a very long needle, fastening the ends well.”

Stained Hands.—Stains upon the hands from preparing fruit or vegetables may be removed by rubbing the hands while washing with a little tartaric acid, afterward rinsing them in clear water, then using soap and fresh water. Once or twice using will clean every stain, and the hands will be soft and white. The juice of ripe tomatoes will remove the stains of walnuts and most fruits from the hands.

—Leaves should be raked up not only as a matter of neatness, but for the use which can be made of them. They are one of the best possible covering materials for plants in winter.

—Don't bank the house with material from the barn-yard. Use clean straw and dry earth. Do not cover the cellar windows.

NEWS AND MISCELLANY.

- France has only 252 colleges.
- Boston will soon celebrate its 250th Anniversary.
- Spain will send 4,000 troops to Cuba in November.
- Moody and Sankey are holding meetings in Cleveland.
- Nevada is the only State which grants a license for gambling.
- In Sydney, Australia, the university is to be open to women.
- China is reported to be making preparations for war with Japan.
- A school for training nurses has been established at Washington.
- A meteorite weighing 300 lbs. has been found on a farm in Rockford, Ill.
- The first University in Siberia is to be opened the present year at Tomsk.
- Roumania is threatened with a famine as the result of an extended drouth.
- The cost of elementary instruction in Prussia amounts to \$3,100,000 annually.
- The British mission at Cabul remains vacant, with no applicants for the position.
- Women have the privilege of voting on school questions in nine States of the Union.
- Count Schouvaloff will leave the Russian embassy in London the first of November.
- The king of southern Abyssinia has abolished the slave-trade throughout his dominions.
- The revenue of the present year in Russia is said to exceed the estimates by 40,000 roubles.
- James Parton wrote the lives of Gen. Butler and Geo. Washington without changing his pen.
- In the United States there are 530 lady doctors, 420 lady dentists, 68 women preachers, and 5 who practice law.
- A meeting has been held at Aosta, Piedmont, to consider a scheme for the construction of a tunnel under Mont Blanc.
- Dr. Talmage has returned from Europe. He lectured and preached ninety-six times while on the other side of the ocean.
- No less than 2987 fires occurred in Russia during the month of August, causing damage to property to the amount of \$16,000,000.
- America has realized an average of \$100,000,000 per year from the export of bread stuffs since 1865, the amount last year being \$181,777,841.
- A jubilee celebration in honor of the first temperance sermon in Europe, preached by Rev. Dr. Edgar, in 1829, will be held at Belfast, Ireland this year.
- A telegraph station, the highest in Europe, has been lately established at a hotel under the Ryffelhorn, in the Valais. It is some 8,500 feet above sea level.

—An industrial and agricultural fair was held this season at the White Earth Reservation by the Chipewewa Indians which seemed quite significant of progress.

—A silk-manufacturing firm of Lyons, France, is making photographs on silk. Several specimens representing pictures by the old masters have been exhibited.

—It is stated that the words "abstemious" and "facetious" are the only words in the English language in which the vowels follow each other in their proper order.

—Prof. Hughes, the inventor of the microphone, has recently invented an instrument, called the audiometer, by which a person's ability to hear may be accurately measured.

—The new Mexican railway across the Isthmus of Tehuantepec is already in progress. It is to be 150 miles in length and must be completed, according to contract, in three years.

—The Gotthard tunnel is being pushed rapidly toward completion. Four thousand men are now engaged on the work, and the advance averages nearly 8 meters per day.

—There were only four newspapers in America a century ago. The *Annapolis Gazette* is the oldest newspaper in the United States. Its first number was issued in Jan., 1745.

—By means of a telephone in the Petrovsky Agricultural Academy, near Moscow, Russia, the professor of practical agriculture directs the work in fields several miles distant without leaving the library.

—The International Exhibition at Sydney, New South Wales, was opened Sept. 17. America has 150 industrial exhibits there, and thirty or more of our leading manufacturing firms are represented.

—Dr. Richardson, a distinguished author of temperance works, has been chosen president of the British Medical Temperance Association, an organization numbering over 100 leading physicians of England.

—Prof. Gray has been recognized as the inventor of the telephone, and is to receive 20 per cent of the profits from the rental of the telephones in America. The large number of telephones in use will give him an enormous revenue.

—In disinfecting Memphis, the National Board of Health has used 170,105 lbs. of copperas, 9,000 barrels of lime, 40 barrels of sulphur, 1,215 lbs. of sulphate of zinc, 15 barrels of carbolic acid, and 1,200 gallons of a solution of salts of zinc and iron.

—Of the great number of persons who have found employment on the East River Bridge since its construction was begun on Jan. 2, 1870, only four now remain who begun work on the first day. The number at work varies from 10 to nearly 900 men.

—The South will raise this year about 5,000,000 bales of cotton, 300,000 hogsheads of sugar, and nearly 600,000,000 pounds of tobacco. This will be half a million more bales of cotton, twice as much sugar, and 12,000,000 more pounds of tobacco than she has ever raised before.

—A coopering establishment in Cincinnati has manufactured a vessel which will hold 18,000 gallons. It is 15 ft. high, the same in diameter, and weighs nearly six tons. The amount of wood employed in its construction was 8,125 ft. It is the

largest vessel in the world excepting the great Tun of Heidelberg, made in 1751, by order of Elector Carl Theodore, which is estimated to contain 99,067 gallons.

—According to the report of the agricultural bureau, the corn crop of 1878 was valued, in round numbers, at \$480,000,000; wheat at \$395,000,000; hay at \$272,000,000; and cotton at \$220,000,000; from which it appears that cotton is now fourth instead of first on the list as in former times.

—A new temperance movement, taking the form of a joint stock company, has been organized in England. It is to have a capital of \$5,000,000, divided into shares of \$5 each. It proposes to open temperance houses all over the kingdom. The Archbishop of Canterbury heads the list in the prospectus of the enterprise.

—The foundation-stone of the new Eddystone Light-house was laid Aug. 19, by His Royal Highness, the Duke of Edinburgh. The tower will be 130 feet above highest water level and the light will have a range of seventeen and a half miles. It will take four years to complete the structure at an estimated cost of about \$350,000.

LITERARY NOTICES.

TWO FORMS OF COMPARATORS OF LENGTH. By Prof. W. A. Rogers. New York: Hitchcock & Wall.

STANDARD MEASURES OF LENGTH. By the same Author.

Prof. W. A. Rogers, the well-known astronomer in charge of the observatory of Harvard University, has been for several years engaged in the study of the various problems involved in the construction of standard measures of length; and the two pamphlets named will be instructive to all interested in this subject. Among the most noticeable results of the labors of the learned professor in this direction are the most beautiful and accurate micrometers which have ever been produced in this country. He has constructed machines for ruling which enable him to rival the world-famous ruled plates of Nobert. Every microscopist ought to be provided with a stage and eye-piece micrometer made by Prof. Rogers, as these are undoubtedly the most accurate standards for microscopic measurements to be obtained in this country.

MORBID FEAR AS A SYMPTOM OF NERVOUS DISEASE. By Geo. M. Beard, M. D. New York.

This is a very concise and interesting paper on a subject concerning which little is known by the profession generally, and upon which almost nothing has been written. Dr. Beard says of fear as a symptom of disease: "Morbid fears are the result of various functional diseases of the nervous system, and imply a debility, a weakness, an incompetency and inadequacy, as compared with the normal state of the individual. A healthy man fears; but when he is functionally diseased in his nervous system he is liable to fear all the more; to have the normal, necessary fear of his physiological condition descend into an abnormal pathological state, simply from a lack of force in the disordered nervous system." A number of

different varieties of morbid fear are described, together with the indications of each. The principal forms to which distinct names are given are *astraphobia*, or fear of lightning; *topophobia*, or *agoraphobia*, or fear of places; *anthophobia*, or fear of man; *gynophobia*, or fear of woman; *monophobia*, fear of being alone; *pantophobia*, or fear of everything; *mysophobia*, or fear of contamination.

REPORT ON MILK AND DAIRIES. New Orleans Auxiliary Sanitary Association.

This report was prepared by a committee appointed for the purpose by the New Orleans Medical and Surgical Association. The Committee seem to have done their work well, and their report is a thorough exposure of the shameful frauds which have long been perpetrated in their city. Among other very interesting facts they ascertained "by a calculation based upon data carefully acquired that the people of New Orleans pay annually for the water often impure and dangerous, which they purchase as milk, believing it to be milk, the sum of \$229,950.00."

THE EVIL AND THE REMEDY FOR THE PRIVY SYSTEM OF NEW ORLEANS. Published by the New Orleans Auxiliary Sanitary Association.

This pamphlet is a report of a committee appointed by the Association named, to consider the subject mentioned in the title and suggest a remedy. After thoroughly exposing the danger to which New Orleans and other cities in a similar condition are exposed, the committee describe in detail a remedy which has been successfully tried elsewhere, chiefly in England, and which seems to us to possess advantages offered by no other plan yet suggested. This plan is known as the Rochedale system, having been first employed in that city, in England. It is thus described:—

"It consists of a closet of strong and simple construction, beneath the seat of which is placed a 'pail,' made from half a kerosene barrel, capable of holding one hundred pounds; but in fact the average weight of its contents, after a week's use by an ordinary family, proved to be forty-one pounds. This is removed weekly, and an empty, disinfected pail substituted. In the case of very large families, or of work-shops, two or more pails are used, or the removal is made twice or thrice a week. At the time of removal a tightly fitting metal lid is placed upon the pail. The process is quite inoffensive, and is systematically performed."

The receptacles described are kept in a wholesome condition by throwing into them daily the ashes from stoves and ranges, which makes them, in effect, a form of earth closet, ashes being used instead of dry earth. The success attending the system at Rochedale has caused its introduction into Manchester, England, where it has been equally successful. We introduced a similar plan into a community four years ago, with most gratifying results.

THE MEDICAL ADVANCE. Quarterly. Detroit.

A lively medical journal now in its third volume. Each number contains quite a number of appropriate illustrations, together with much useful and interesting matter on medical and allied subjects.

Publishers' Page.

☞ A blue cross before this paragraph indicates that your subscription expires with this number. We would be pleased to receive your renewal. Please notify us at once, that your name may not be removed from our list.

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Those who wish to engage in the work should send at once for an agent's outfit, which includes a book of instructions how to canvass, a subscription book, sample copies, etc.

Just What Was Wanted.—The volume entitled "Digestion and Dyspepsia," recently published at this Office, has proved to be just what was needed. Every one who has purchased a copy has been delighted with it. It contains a vast amount of information presented in very readable style, and boiled down to the last degree of condensed richness. Every dyspeptic ought to have a copy, and every person who does not wish to become a dyspeptic may read it with equal profit. Beautifully bound, with a colored frontispiece. Price, 75 cts., post-paid.

☞ We would call the attention of old subscribers to the fact that if they wish to subscribe to some other journal as well, they can save money by sending their subscription to the Office of GOOD HEALTH along with their subscription for 1880. By special arrangement with the publishers of nearly all of the best journals published in this country, we can furnish to our subscribers their publications at much less than the usual rate. In many instances enough will be saved to more than equal the subscription price of GOOD HEALTH. In another column we give a few of the numerous journals which we can furnish in this way. Almost any other periodical can be furnished at equally favorable rates. Probably there are very few of our patrons who do not take at least one other periodical besides this; and doubtless many will like to avail themselves of this opportunity to get two journals for the price of one.

☞ The Sanitarium is flourishing, as usual, having a larger number of patients than at this time last year. Rooms are rapidly filling up with patients who

expect to spend the winter there. It is becoming known among the invalids of the West that a winter is much more pleasantly and profitably spent at the Sanitarium than in the midst of the mud and rain and chilly dampness of a Southern State.

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Youth's Companion.....	1 75	2 25
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Harper's Magazine.....	4 00	4 20
Lippincott's Magazine.....	4 00	4 00
Littell's Living Age.....	8 00	8 00
Rural New-Yorker.....	2 00	2 75
MEDICAL JOURNALS.		
New York Medical Journal.....	4 00	4 00
Atlanta Medical and Surgical Journal.....	3 00	3 25
Buffalo Medical and Surgical Journal.....	3 00	3 00
Sanitarium.....	3 00	3 25
Philadelphia Medical Times.....	4 00	4 00
Medical Record.....	5 00	5 00
Detroit Lancet.....	3 00	3 25
SCIENTIFIC JOURNALS.		
Scientific American.....	3 20	3 60
Popular Science Monthly.....	5 00	5 00
Boston Journal of Chemistry.....	1 00	1 75
Scientific Farmer.....	1 00	1 70
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