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THE PHYSIOLOGY OF DIGESTION.*

BY THE EDITOR.

THE CHEMISTRY OF DIGESTION.

WHILE the numerous and really remarkable changes which take place in digestion are by no means chemical in character, in the sense in which the word is generally understood, yet we may allow the term if we understand that by it is meant, in this connection, not the reactions which take place in dead matter in obedience to the laws of chemical affinity, and which the chemist can command at will in his laboratory, but a living chemistry, working, through the laws of organized or living matter, changes infinitely more wonderful than any chemist can produce, and which he is powerless to imitate except through the same agencies.

Let it be understood, then, that digestion is not a chemical, but a vital process. Before the process was understood as well as it now is, the changes wrought were supposed to be those of fermentation, to which, indeed, the process is in some degree analogous; but we now know that fermentation occurs in conjunction with digestion only as an incidental and abnormal—though, unfortunately, a very common—process.

ACTION OF THE SALIVA.—The saliva contains a peculiar organic principle which possesses the property of converting starch into sugar. This property of the saliva can be studied at will in the following manner: Place in the mouth a fragment of a dry

cracker containing no sugar, or a small portion of well-boiled rice. Now chew it for five minutes. It will be observed that after the first few seconds it begins to have a perceptible sweet taste, which increases as the mastication is continued. A quantity of pure starch treated in the same manner will secure the same result. Evidently, sugar is formed during the chewing, as it did not exist in the starch before it was masticated. While undergoing the process of chewing, the saliva was brought in contact with the starch, and the change noted was effected. Further proof of this change is afforded by the chemist, by means of the chemical test for sugar. If a quantity of starch be submitted to the test referred to before coming in contact with the saliva, it will be found that it contains no sugar. If the same test be applied after the starch has been mixed with saliva for a few moments, an abundance of sugar is found. This experiment we have often made in the presence of an audience, in illustrating lectures on digestion, and with effects clearly visible to all. It should be mentioned that the saliva has the same effect outside of the body as in the mouth, provided that the proper temperature is maintained.

It has been recently discovered that most of the fluids of the body possess the power of converting starch into sugar in some degree.

The secretion of saliva is excited by the presence of food in the mouth, or by any sweet, acid, or other sapid substance. Even the odor of agreeable foods will excite the secretion very strongly. It is also increased to a considerable extent by the act of chew-

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

ing, even if the article chewed does not possess either sapid or odorous properties.

ACTION OF THE GASTRIC JUICE.—After many years of patient study and experimentation, physiologists have at last arrived at quite an accurate knowledge of the nature of gastric juice and of its action upon the food. About the first knowledge gained was by an ingenious experimenter who inclosed different kinds of food in small perforated wooden tubes which he swallowed, and afterward vomited. He found that albuminous substances were dissolved in the stomach, so that the wooden tubes containing such foods were vomited empty, while those containing starch and fatty substances remained unchanged. Some years later, a most remarkable opportunity for the study of the gastric juice and its action was afforded by a serious accident suffered by a young Canadian. While hunting, he received in his side the full charge of a gun loaded with buckshot, and fired at the distance of a few yards. An immense rent was made in his body, which exposed not only the lungs but the inside of the stomach. Fortunately, the wounded man fell into the hands of Dr. Beaumont, an unusually intelligent physician, by whose skillful care, together with his own powerful constitution, he was restored to health after many months of suffering and imminent peril to life from the extensive sloughing of the soft parts, with injured ribs and cartilages, being finally left with a large opening through the abdominal wall into the stomach. Through this opening the food was, at first, expelled after each meal, unless retained by a bandage; but after the lapse of a few months, thoughtful nature drew a membranous curtain before it, when the injured man suffered no further inconvenience, although he could expel food through the opening at will, and often performed the experiment of drinking a quart of milk and pouring it out through the abdominal opening. The accident served in no way to interfere with his general health, and according to late accounts he is still living in Canada, though very old.

Dr. Beaumont was not slow to embrace this excellent opportunity for observation and study, and retained St. Martin for several

months, and at intervals for a number of years, for the purpose of experiment and investigation. Allowing him to eat various articles, he had but to push aside the little curtain, and the long-studied mystery of stomach-digestion appeared before his eyes, solved by an accident. Dr. Beaumont soon discovered that the principal work of the gastric juice is to dissolve the albuminous elements of food. This conclusion was also proven then, as it has been hundreds of times since, by the fact that a portion of pure gastric juice, collected from the stomach, possesses the property of dissolving albuminous substances, as meat, boiled eggs, the curd of milk, gluten, etc. In repeating the experiment, physiologists have purposely produced similar openings in the stomachs of dogs, thus enabling them to collect a quantity of gastric juice for examination at any time desired. It is even possible to separate from the gastric juice, or from the mucous membrane of the stomach of various animals, *pepsin*, the active principle of the gastric juice, and by means of it to experiment at pleasure upon its digestive properties. The pepsin which can be extracted from the stomach of a healthy dog has been estimated to possess sufficient digestive power to dissolve two hundred pounds of albumen, which would be equivalent to more than two thousand eggs.

It has also been observed that the gastric juice of calves, horses, and other herbivorous animals, is much less active in digesting animal food than that of carnivorous animals.

The secretion of gastric juice is excited by the presence of food in the stomach, especially of semi-solid food, by the presence of the saliva, by sudden alternations of heat and cold, especially by the application of heat. A temperature less than that of the body causes its action to cease; a slight elevation of temperature increases its activity. Alcohol, alkalies, and tannin antagonize its action, since they precipitate the pepsin and the digested albuminous elements. Bile, which is occasionally forced upward into the stomach, has the same effect. Antiseptics of all sorts, that is, such substances as will prevent fermentation, also interfere with digestion. The metallic salts, as compounds of lead, zinc, iron, copper, etc., together with

omponents of lime, magnesia, and other salts found in hard water, hinder digestion.

ACTION OF THE BILE.—It has long been well known that the bile is an excrementitious fluid; but more recent investigations show that it also has an important office to perform in the process of digestion. The alkaline character of the bile enables it to emulsify the fatty elements of food, and by thus permanently dividing them into very small particles, renders possible their absorption. It is probable, also, that the alkaline elements of the bile to some extent saponify the fats, and thus render them soluble in water. An additional office of this digestive fluid is to stimulate the absorption of the digested food, as well as to encourage activity of the intestinal mucous membrane. Deficiency in the quantity of the biliary secretion is a cause of constipation.

ACTION OF THE PANCREATIC JUICE.—This peculiar digestive fluid is unlike those which have been previously mentioned, in that its action is not confined to a single element of the food. Its office is to digest both starch and fat. It also converts cane sugar into grape sugar, or glucose. It thus acts upon two of three classes of food elements.

ACTION OF THE INTESTINAL JUICE.—This juice, of still more complicated nature than the pancreatic, digests all three of the classes of digestible foods, acting alike upon the farinaceous, the albuminous, and the fatty elements of food. This complicated function well corresponds with the compound nature of the secretion, it being the mixed product of several glands.

Having now considered in detail the action of each of the digestive juices, we find that of the five separate fluids, three digest one each of the three classes of digestible food, while one of the remaining two digests two of the elements, and the other three, or the whole food. Considering the nutritive elements, we find that starch is digested by three separate juices, fats by three, and albuminous elements by two, which would seem to intimate that the digestion of fats and farinaceous substances is more difficult than that of albuminous elements, a fact which is abundantly confirmed by experience in the treatment of disorders of digestion.

INFLUENCE OF PUBLIC SCHOOLS UPON HEALTH.

In a work entitled, "Deterioration and Race Education," published by Lee & Shepard, of Boston, Mr. Samuel Royce presents facts respecting the damaging influence exerted upon the health by the unhygienic conditions met by students in the average school-room, which certainly must be startling to those who have not before investigated this subject. We quote a few paragraphs as follows:—

"That our schools look more to geography, grammar, and spelling, than to the life, health, and strength of the rising generation, may be seen from the last report of the Commissioner of Education, in which Dr. Thomas F. Hunter, of Buffalo, is quoted to have said in his inaugural address before the Medical Society of the State of New York: 'In the primary department little children have hardly room to breathe and stretch out their little arms. The United States hospitals allow from 800 to 1,200 cubic feet of air to the individual. The British India jails give the prisoners 648 cubic feet of air. Some of our schools give our (growing?) children 56 cubic feet! No wonder that scarlet fever, diphtheria, typhoid fever, and blood poisoning of every sort are more or less prevalent. A large proportion of these dread disorders are generated and propagated in our public schools. But acute diseases are not the only results of this criminal crowding. Tuberculosis, scrofulous and brain affections, developed at various periods, are generated in our schools. Better for society and better for themselves would it be that these infants were not educated at all than at such risk.'

"And such schools may be found in every large city of the land!

"The average number of cubic feet to the scholar in the schools of Philadelphia is 143. The proportion of carbonic acid to the air is 500 per cent. larger in these crowded rooms than in the normal atmosphere, and cannot but vitiate the blood. Every individual, says Dr. Bell, requires 2000 feet of fresh air every hour, and if only 300 feet are allowed to the scholar, the air must be changed every twenty minutes, and with less provision contamination is sure to follow; the sensibilities are blunted, the intellect is obtused; stupidity, idiocy, and physical deformity are promoted.

The depressed condition of the children in our schools predisposes them to epidemics, from which they suffer also more intensely than others.

"An examination of the public schools of Brooklyn, in 1874, showed 50, 49, 30, 29, and even as little as 24, cubic feet of air to the scholar. Such is the condition of the schools in Brooklyn. It is, as we have seen, not much better in Philadelphia, and very much the same all over the country."

"Theory and practice have both established the hygienic effect of gymnastics, never more indispensable in childhood or mature age than under our present division of labor, which affords to hardly anybody the harmonious exercise of all the parts and organs of his body. Still our schools are criminally indifferent about this reform, alike necessary to the health and development of the human system.

"The one-sided mental culture of our seminaries leads to mental degeneracy. The criminal pride and foolish vanity of the world, the excess of imagination and passion, and other disturbing elements cultivated by our literary schools, prepare the way for insanity, to which students thus deteriorated fall an easy prey in after-life.

"But it is not necessary to enter upon a hygienic analysis of our present scholastic system. Dr. Ray, a most eminent observer, sketches in a few lines the future mothers of our physically enfeebled race, as sickly young women, daughters of healthy mothers who went to school hale and hearty, and returned with an enfeebled constitution, the face pale, and the spine not infrequently curved, to give existence to children as weak as themselves.

"The examination of a noted physician proved the fact that there was not one girl out of forty who have spent two years at a boarding-school that was not more or less crooked."

"Nervous diseases are daily becoming more frequent, and our mad-houses, though of the size of towns and daily increasing in number, are overflowing with their unhappy tenants."

"Health is the first condition of success and happiness, and, hence, hygiene and gymnastics are the first steps in education. Gymnastics direct the organic activity of the body from the great nervous centers to the muscular sys-

tem, and lessen thereby an excess of sensibility, which, among other baneful influences, counts also that of a premature and morbid sexual development, ending in that terrible vice which destroys the youths of the land by the tens of thousands. Our one-sided education, failing to combine physical with mental exercise, is greatly responsible for this race-deteriorating pest.

"Too many lessons lead to evening studies, an excited brain, an unsound sleep, dreams, and self-pollution. Muscular exercise and fatigue induce a sound sleep and a clear head for morning study.

"Germany is following in the traces of ancient Greece, and gymnastics form a part of its common schools, of which it is fast reaping the benefit.

"Prof. Tyndall, like others, strongly condemns our one-sided culture. 'Few persons,' he says, 'are aware how great a promoter of study labor is. Those whose occupations are of the intellectual kind, frequently become brain-weary, and this sort of weariness is very exhausting. The brain needs rest, gets it most effectually in muscular toil, and returns to study with a keen appetite.' Tyndall recommends alternation of farm and shop work with study, and concludes, '*This habit of work should be formed early in life if we would have it a source of pleasure.* Work is the greatest educator and blessing that we have, or are likely to have.' And this initiation in the mechanical arts, horticulture, or agriculture, while affording relaxation from mental exercise, would prepare us for the active duties of life, and add greatly to our material wealth."

DISINFECTANTS, AND HOW TO USE THEM.

PROF. C. F. CHANDLER, chairman of the committee appointed by the National Board of Health to prepare concise directions for disinfection, presents the following report, which is a model of clearness and brevity:—

It has been the aim of the committee to prepare concise directions for disinfection, so simple and clear that they may be easily followed by any person of intelligence.

In the selection of disinfecting agents the aim has been, first, to secure agents which

can be relied upon to accomplish the work; second, which can be procured in a state of comparative purity in every village in the United States; third, so cheap that they can be used in adequate quantities.

It is extremely important that the people should be instructed with regard to disinfection. They must be taught that no reliance can be placed on disinfectants simply because they smell of chlorine or carbolic acid, or possess the color of permanganate; and that, in general, proprietary disinfectants with high-sounding names are practically worthless, as they either have no value whatever, or, if of value, cost many times as much as they are worth, and cannot be used in sufficient quantity.

EXPLANATIONS.

Disinfection is the destruction of the poisons of infectious and contagious diseases.

Deodorizers, or substances which destroy smells, are not necessarily disinfectants; and disinfectants do not necessarily have an odor.

Disinfection cannot compensate for want of cleanliness or of ventilation.

I.—DISINFECTANTS TO BE EMPLOYED.

1. Roll sulphur (brimstone) for fumigation.
2. Sulphate of iron (copperas) dissolved in water in the proportion of one and a half pounds to the gallon; for soil, sewers, etc.
3. Sulphate of zinc and common salt, dissolved together in water in the proportions of four ounces sulphate and two ounces salt to the gallon; for clothing, bed linen, etc.

NOTE.—Carbolic acid is not included in the above list for the following reasons: It is very difficult to determine the quality of the commercial article, and the purchaser can never be certain of securing it of proper strength; it is expensive, when of good quality, and experience has shown that it must be employed in comparatively large quantities to be of any use; it is liable by its strong odor to give a false sense of security.

II.—HOW TO USE DISINFECTANTS.

1. *In the Sick-Room.*—The most available agents are fresh air and cleanliness. The clothing, towels, bed linen, etc., should at once, on removal from the patient, be placed in a pail or tub of the zinc solution, boiling hot if possible, before removal from the room.

All discharges should either be received in vessels containing copperas solution, or, when this is impracticable, should be immediately covered with copperas solution. All vessels used about the patient should be cleansed with the same solution.

Unnecessary furniture—especially that which is stuffed—carpets, and hangings, when possible, should be removed from the room at the outset; otherwise, they should remain for subsequent fumigation and treatment.

2. *Fumigation* with sulphur is the only practicable method for disinfecting the house. For this purpose the rooms to be disinfected must be vacated. Heavy clothing, blankets, bedding, and other articles which cannot be treated with zinc solution, should be opened and exposed during fumigation, as directed below. Close the rooms as tightly as possible, place the sulphur in iron pans supported upon bricks, set it on fire by hot coals or with the aid of a spoonful of alcohol, and allow the room to remain closed for twenty-four* hours. For a room about ten feet square, at least two pounds of sulphur should be used; for larger rooms, proportionally increased quantities.

3. *Premises.*—Cellars, yards, stables, gutters, privies, cesspools, water-closets, drains, sewers, etc., should be frequently and liberally treated with copperas solution. The copperas solution is easily prepared by hanging a basket containing about sixty pounds of copperas in a barrel of water.

4. *Body and Bed Clothing, etc.*—It is best to burn all articles which have been in contact with persons sick with contagious or infectious diseases. Articles too valuable to be destroyed should be treated as follows:—

a. Cotton, linen, flannels, blankets, etc., should be treated with the boiling hot zinc solution, introducing piece by piece, securing thorough wetting, and boiling for at least half an hour.

b. Heavy woolen clothing, silks, furs, stuffed bed covers, beds, and other articles which cannot be treated with the zinc solution, should be hung in the room during fumigation, pockets being turned inside out, and the whole garment thoroughly exposed. Afterward they should be hung in the open air,

beaten, and shaken. Pillows, beds, stuffed mattresses, upholstered furniture, etc., should be cut open, the contents spread out and thoroughly fumigated. Carpets are best fumigated on the floor, but should afterward be removed to the open air and thoroughly beaten.

5. *The corpses* should be thoroughly washed with a zinc solution of double strength, then wrapped in a sheet wet with the zinc solution, and buried at once. Metallic, metal-lined, or air-tight coffins should be used when possible, certainly when the body is to be transported for any considerable distance.

TYPHOID FEVER AND MILK.

[THE following account of an outbreak of fever in Melbourne, from the *Sanitary Record*, presents very strong evidence in support of the germ theory of the disease, and its communicability through the medium of milk.—*Ed.*]

The medical officer of health for Melbourne has reported to the City Council that a milkman who had typhoid fever in his family had been supplying milk in a certain neighborhood of the city, and that no fewer than fifteen cases of fever had broken out amongst his customers. One of his children has since died of the fever. Mr. Girdlestone thus traces the origin and progress of the outbreak: "After a careful examination of the locality, and a house-to-house visitation, I have come to the conclusion that the exact origin of the recent outbreak is, as usual, obscure. But there can be no doubt that the disease has been communicated through the milk supplied by one dairyman, in whose house there was a case of typhoid fever which terminated fatally on the 2d inst.

"A brief history is necessary to throw light on the course of the contagion. In 1878 there were two cases of typhoid fever in a house in Jolimont Terrace, on the high ground, which is at the eastern side. One of these cases terminated fatally at the end of the year, and was quickly followed by two other cases in the same house. In January, 1879, the family moved from this house to the country, and there has been no case in it

since then. They used to keep their own cow, which was fed at home.

"In November, 1878, a gentleman, then residing with other members of his family at 8 Jolimont Place, was also attacked with the same kind of fever. He recovered in the following December. The disease did not spread, but the family left the neighborhood on the 1st inst. While at Jolimont they took their milk from Baker's dairy.

"The next case occurred in the same street as the last one mentioned, a few doors farther down the hill, at 3 Jolimont Place, on or a little before March 19, 1879, in the young man who died of the disease on the 2d inst. His father, a milkman named M'Auley, served a good many families in the neighborhood, and continued to follow his calling during his son's illness and after his death. He used to keep four or five cows, which were milked in a small, confined back yard, behind the house, where also the cans were washed. I am informed that his Jolimont customers were for the most part supplied with milk from these cows, and it was frequently delivered by one of his children. He also kept cows in the country, whence he received a considerable quantity of milk for other customers. But the carts which carried the country milk frequently called at his yard at Jolimont Place.

"Soon after his son's death, M'Auley left his residence at Jolimont, but continued to supply milk. I am obliged to refer to this particular dairyman, because all the cases, or nearly all (there being one only which may be doubtful), which subsequently occurred in Jolimont, were among his customers.

"The result of my investigation is that I have obtained statistics from the seventy-four different families or households, the domestic servants included, which virtually comprise the whole of Jolimont. Only two or three small families—about six or seven persons—are omitted, owing to absence or other causes. Since January, 1879, typhoid fever has appeared in eleven different houses. The first of these attacks was on, or perhaps one or two days before, the 19th of March, and at the dairy in Jolimont Place, as already stated.

"The next two cases both occurred on the 25th of the same month, in a house in Joli-

mont Square. From this day to the 15th of April inclusive, altogether twenty persons residing in Jolimont in ten different houses were attacked. There has been no fresh case since the 15th inst., and no death in the twenty cases. Some are convalescent, but the majority are still ill. Twenty-eight Jolimont families took their milk from M'Auley during the time his son was ill, and it is most significant that all the subsequent attacks in the locality occurred among these persons. That is to say, out of twenty cases of fever nineteen received their regular milk supply as just stated, and the remaining one, a girl aged nineteen, visited the dairy three times, and took home a pint of milk on one occasion, of which she drank some in her tea, and a portion by itself, unboiled, eight days before she became ill. Of the remaining families, forty took their milk from other dairies, and of five houses the source of supply is unknown, but in these forty-five households not a single case of fever has taken place. Moreover, infected milk is not confined to Jolimont, and although there are difficulties in tracing its ramifications, I have discovered six houses in other localities in which twelve persons, all supplied with M'Auley's milk, were attacked with typhoid fever between March 23 and the 15th inst."

BRAIN WORK AND SKULL GROWTH.

THE *London Medical Record* sums up as follows the results of some very interesting measurements of heads by two French physicians, Messrs. Lacassagne and Cliquet:—

Having the patients, doctors, attendants, and officers of the Val de Grace at their disposal, they measured the heads of one hundred and ninety doctors of medicine, one hundred and thirty-three soldiers who had received an elementary instruction, ninety soldiers who could neither read nor write, and ninety-one soldiers who were prisoners. The instrument used was the same which hatters employ in measuring the heads of their customers; it is called the conformator, and gives a very correct idea of the proportions and dimensions of the heads in question. The results were in favor of the doctors; the frontal diameter was also much more considerable

than that of the soldiers, etc. Nor are both halves of the head symmetrically developed; in students the left frontal region is more developed than the right; in illiterate individuals, the right occipital region is larger than the left. The authors have derived the following conclusions from their experiments: 1. The heads of students who have worked much with their brains are much more developed than those of illiterate individuals, or such as have allowed their brains to remain inactive; 2. In students the frontal region is more developed than the occipital region, or, if there should be any difference in favor of the latter it is very small; while in illiterate people the latter regions are the largest. —*Dental Register*.

THE STATISTICS OF INTEMPERANCE.

[THE following valuable statistics of the manufacture, sale, and effects of alcoholic liquors in this country we quote without being able to give the original authority; but from a somewhat careful examination of the facts stated we are satisfied that they are reliable.—ED.]

1. The grain distilleries in the United States number about 1000, the breweries about 3000, and the fruit distilleries about 7000.

2. These manufacture annually 100,000,000 gallons of distilled spirits, 400,000,000 gallons of brewed liquors, and an unknown amount of fermented liquors.

3. They employ not less than 50,000 men directly in the business of manufacturing. They use annually 50,000,000 bushels of grain and 10,000,000 of fruit, besides other materials. This makes not far from two bushels to each inhabitant, and furnishes 87,000,000 gallons of pure alcohol—enough to give two and one-half gallons to each individual. This comes to the consumers in 100,000,000 gallons of distilled spirits, 400,000,000 gallons of beer, and 20,000,000 gallons of wine, besides slops to the amount of over 400,000,000 gallons.

4. In the sale of these liquors there are 6000 wholesale houses, which employ 30,000 men, and 110,000 retail places, which employ 250,000 men.

5. About 4,000,000, or one-half the entire

male adult population, drink—2,000,000 of these drink only occasionally, 1,500,000 are moderate drinkers, and 500,000 hard drinkers and sots. It is estimated that 200,000 women drink more or less—probably an under-estimate, if we include those who make a practice of drinking by medical prescription.

6. The deaths directly from drinking, or from the diseases caused thereby, are as many as 75,000 annually; from resulting accidents, and the neglect, want, and abuse in drunkards' families, 25,000.

7. The retail cost of the liquors is \$600,000,000. Half of this, representing the actual cost of the liquor—namely, the labor bestowed on its production—is a dead loss, since the product is worthless. The other half goes into the pockets of the rum makers and sellers, but it is really lost only to the final purchaser. A sum nearly or quite equal to the retail cost is totally lost in the time consumed in drinking and drunkenness. Add to these the losses from the use of intoxicating liquors, by shortening human life, by crimes, fires, shipwrecks, and other accidents, by disease, by doctors' bills, etc., etc., and this country would be the gainer by at least \$1,200,000,000 if no alcoholic liquors were drank therein.

8. Other countries where statistics have been gathered tell a like story. In Great Britain the annual cost of liquors averages £110,000,000. Enough was spent in this way in the six years previous to 1871 to pay off their entire national debt.

CANON KINGSLEY ON CORSETS.

I SUPPOSE you will all allow that the Greeks were, as far as we know, the most beautiful race which the world ever saw. Now, these people had made physical as well as intellectual education a science as well as a study. Their women practiced graceful, and in some cases even athletic, exercises. They developed, by a free and healthy life, those figures which remain everlasting and unapproachable models of human beauty; but they wore no stays.

The first mention of stays that I have ever found is in the letters of dear old Synesius,

Bishop of Cyrene, on the Greek coast of Africa, about four hundred years after the Christian era. He tells us how, when he was shipwrecked on a remote part of the coast, and he and the rest of the passengers were starving on cockles and limpets, there was among them a slave girl out of the far East, who had a pinched wasp-waist, such as you may see on the old Hindoo sculptures, and such as you may see in any street in a British town. And when the Greek ladies of the neighborhood found her out, they sent for her from house to house, to behold, with astonishment and laughter, this new and prodigious waist, with which it seemed to them it was impossible for a human being to breathe or live; and they petted the poor girl, and fed her, as they might a dwarf or a giantess, till she got quite fat and comfortable, while her owners had not enough to eat. So strange and ridiculous seemed our present fashion to the descendants of those who, centuries before, had imagined, because they had seen living and moving, those glorious statues which we pretend to admire, but refuse to imitate.

It seems to me that a few centuries hence, when mankind has learned to fear God more, and therefore to obey more strictly those laws of nature and of science which are the will of God—it seems to me, I say, that in those days the present fashion of tight lacing will be looked back upon as a contemptible and barbarous superstition, denoting a very low level of civilization in the peoples that have practiced it. That for generations past women should have been in the habit—not to please men, who do not care about the matter as a point of beauty—but simply to vie with each other in obedience to something called fashion—that they should, I say, have been in the habit of deliberately crushing that part of the body which should be specially left free, contracting and displacing their lungs, their heart, and all the most vital and important organs, and entailing thereby disease, not only on themselves but on their children after them; that for forty years past physicians should have been telling them of the folly of what they have been doing; and that they should as yet, in the great majority of cases, not only turn a deaf ear to all warnings, but actually deny the offense, of which one glance of the

physician or the sculptor, who knows what shape the human body ought to be, brings them in guilty: this, I say, is an instance of—what shall I call it?—which deserves at once the lash, not merely of the satirist, but of any theologian who really believes that God made the physical universe.

Let me, I pray you, appeal to your common sense for a moment. When any one chooses a horse or a dog, whether for strength, for speed, or for any other useful purpose, the first thing, almost, to be looked at is the girth around the ribs; the room for heart and lungs. Exactly in proportion to that will be the animal's general healthiness, power of endurance, and value in many other ways. If you will look at eminent lawyers and famous orators who have attained a healthy old age, you will see that in every case they are men, like the late Lord Palmerston, and others whom I could mention, of remarkable size, not merely in the upper, but in the lower part of the chest; men who had, therefore, a peculiar power of using the diaphragm to fill and to clear the lungs, and therefore to oxygenate the blood of the whole body. Now, it is just these lower ribs, across which the diaphragm is stretched like the head of a drum, which stays contract to a minimum.

If you advised owners of horses and hounds to put their horses or their hounds into stays, and lace them up tight, in order to increase their beauty, you would receive, I doubt not, a very courteous, but certainly a very decided, refusal to do that which would spoil not merely the animals themselves, but the whole stud or the whole kennel for years to come. And if you advised an orator to put himself into tight stays, he, no doubt, again would give a courteous answer; but he would reply—if he was a really educated man—that to comply with your request would involve his giving up public work, under the probable penalty of being dead within the twelvemonth.

And how much work of every kind, intellectual as well as physical, is spoiled or hindered; how many deaths occur from consumption and other complaints which are the result of this habit of tight lacing, is known partly to the medical men, who lift up their voices in vain, and known fully to Him who will not interfere with the least of His own

physical laws to save human beings from the consequences of their own willful folly.—*Health and Education.*

How the Race Degenerates.—Horace Mann, the eminent educator, asserted that “degeneracy must not only be considered as one of the greatest calamities that can befall a people, but it must be entered on the catalogue of its greatest sins. As the inevitable consequence of unhealthful habits, debility or sickness ensues, old age is anticipated, feeble parents are succeeded by feebler children, the lineage dwindles and tapers from less to less, the cradle and swaddling-clothes are frequently converted into the coffin and shroud, occasional contributions are sent off to deformity, to idiocy and insanity, until sooner or later, after incredible sufferings, abused and outraged nature, finding all her commands broken, her admonitions unheeded, her punishments contemned, applies to the offending family her sovereign remedy of extinction. On the broad and firm foundation of health alone can the loftiest and most enduring structure of the intellect be reared.”

AN OPIUM ASYLUM IN CHINA.

ONE of the most eminently practical missionary enterprises with which we are acquainted is the opium asylum at Foochow, China. At this institution more than eleven hundred habitual opium-eaters have been treated, five hundred and forty-four within the last year, of whom all but twenty-four, who ran away, were cured. In his annual report the superintendent, Dr. D. W. Osgood, presents the following very interesting facts:

“As a majority of these cases have come under my personal supervision day after day, I hope that I shall not be accused of egotism or cant when I write that in my opinion the use of opium is an unmitigated curse. It is equally true that rich and poor alike suffer from the continued use of the drug. It causes anorexia, indigestion, constipation, a general loss of vitality, anæmia, and in many cases difficulty in breathing. The confirmed smoker usually becomes impotent. His sallow skin, emaciated form, and languid step, tell the

story. I am free to admit that there are cases where opium is used constantly for twenty or even thirty years in small quantities, with comparatively little injury to the user; but these cases are the exception and not the rule. It is also true that a given amount of opium smoked is less injurious than when swallowed. *I have never yet heard a heathen Chinaman defend the use or sale of opium, but on the contrary they universally condemn them.* The only apologists for the use of opium have been representatives of Christian lands, many of whom have had but little practical knowledge of the evil resulting from the use of opium. We append a table giving statistics of 1000 opium patients, showing their occupation and the amount used, etc. :

“Farmers, 273; Literati, 83; Officials, 5; Shop-keepers, 304; Mechanics, 43; Buddhist priests, 2; Taoist priests, 3; Soldiers, 17; Carpenters, 23; Bamboo-workers, 16; Tailors, 22; Attendants in opium shops, 8; Brokers, 6; Doctors, 5; Miscellaneous, 190.

“Number treated under twenty years of age	5
From twenty to thirty years of age.....	208
“ thirty to forty “ “	454
“ forty to fifty “ “	261
“ fifty to sixty “ “	68
“ sixty to seventy “ “	9
The number using from one candareen to one mace.....	51
From one mace to a mace and one-half.....	89
“ one and one-half to two mace	187
“ two to three mace	317
“ three to four “	195
“ four to five “	77
“ five to six “	36
“ six to seven “	16
“ seven to eight “	5
“ eight to nine “	8
One ounce.....	3

“Fifteen ate opium instead of smoking it. The amount used ranged from five candareens to three mace of the prepared opium.

“As some of our readers are not familiar with Chinese weights, we may say the ounce is divided into ten mace, and the mace is again divided into ten candareens. The ounce is equal to 38 grammes.

“The above-mentioned quantities are of the extract of opium; each ounce of the extract is said to represent one and a half ounces of the crude opium.

“Number who had used opium less than five years.....	239
Number who had used opium from five to ten “ “ “	311
“ “ “ ten to fifteen....	251
“ “ “ fifteen to twenty	94
“ “ “ twenty and more	103
“ “ “ thirty years.....	7
“ “ “ thirty-five years...	1
“ “ “ forty years.....	1

“Among the patients there was a Buddhist priest who smoked an ounce of opium daily. He remained about ten days, and at the time of his discharge said that he had no desire for opium.”

THE CONFESSIONS OF A DYSPEPTIC TOBACCO-USING LAWYER.

AMONG our passengers was a tall young man, of fine appearance, but somewhat delicate, not to say sickly. He passed into the second-class car, lighted his cigar, and began to smoke. Here, I said to myself, is an opportunity to do some good to a person to whom great good needs to be done. Approaching him in a respectful manner, I said, “I believe, sir, we are strangers to each other, and, as this interview may be our only one, will you allow me as a medical man, to give you a word of advice?” Looking at me with a little apparent surprise, he said, “Certainly I will.”

“Well, then, my dear sir, let me say that I discover in your countenance, and in your whole appearance, that, young as you are, your constitution is already beginning to suffer from some bad influence. It may be the use of tobacco or it may be something else. Pray, what is your employment?”

“I am a lawyer, sir; but law has not hurt me. I am killing myself with tobacco, and I know it.”

“How long have you smoked tobacco?”
 “I have never smoked very much till of late; but I have chewed the article ever since I was sixteen years old.”

“How old are you now, sir?”
 “Thirty-three.”

He had, consequently, chewed the weed about seventeen years. He told me that he had never been sick with fever, but had had a great deal of ill health. “It is well,” said I, “that you have escaped severe disease requiring medical attention, for you would

probably have been a greater sufferer on account of the use of tobacco. Not only will disease be more dangerous at the beginning, but more difficult to manage."

On further inquiry, I found that he was suffering from dyspepsia. His liver was somewhat affected, as well as the whole alimentary canal.

"How much tobacco do you chew in a year?" I asked.

"I use a pound of the best paper tobacco a week."

"Fifty-two pounds a year, then?"

"Yes, quite as much as that."

"Then you expend twenty-six dollars a year for tobacco, and have done so seventeen years. Do I understand you correctly?"

"Certainly you do."

"This is quite a heavy tax on your purse!"

"I know it is. I would give \$500 to be freed from the vile habit."

"Why, then, do you not leave it off?"

"I cannot do it. I have tried a great many times."

"You look as though you had force enough to be able to quit it."

"I cannot do it. I must die a miserable slave."

"You ought to last fifty years. You inherited a good constitution."

"One of the very best."

"Are you willing to dwindle away and perish at fifty, when you might as well live on to eighty or ninety?"

When the cars stopped I obtained a promise that he would abandon the habit. Men have done such things at fifty and sixty years of age, and have been made young again; but they are rare instances.—*Ex.*

A Handy Anesthetic.—Forced respiration has recently been recommended as a very efficient means of securing freedom from pain during slight surgical operations. An English surgeon has made use of this means to a very considerable extent. In the following paragraph a gentleman describes the mode of applying the remedy as well as its application for the relief of toothache:—

"Several evenings since I was attacked with a severe dental neuralgia. After resorting to friction, cold and hot applications,

etc., without obtaining any relief, I lay upon my bed trusting that sleep might come and give me respite. Still the excruciating pain continued, and while I was suffering the 'tortures of the doubly damned,' undecided whether to arouse some tired druggist for a bottle of chloroform or chop my head off (with a decided preference, however, for the chloroform), I suddenly bethought me of what I had read in an anesthetic book we always carry with us. Thereupon I began to inflate my lungs to their utmost capacity, and then forcibly blew out all the air I could. Immediately the pain began to lessen, and after a few repetitions of the process it had entirely ceased, being displaced by a delightful tickling sensation in the gums. Furthermore I know not; for in less time than it takes to tell it I was sound asleep, awakening next morning delightfully refreshed and without a symptom of my ailment left. Hence, you see, I was not simply temporarily relieved but entirely well again. I wish other sufferers would try this, and report results."

Imitating the Barbarians.—It is stated that King James of England, in 1609, on the introduction of tobacco into his kingdom, issued a counterblast, in which he characterized the custom as loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and the black, stinking fumes thereof resembling the horrid stench of the pit that is bottomless. From whom did we Americans acquire such a universal habit as to require so much capital invested, and so many men engaged in the trade to supply our wants? In the front of the store you have the answer. Very significantly and appropriately stands the Indian, with a sample of the seductive article in one hand and a raised tomahawk in the other. If you enter, remember, that "where in my barbarous state I slew my thousand, now in my civilized state I slay my ten thousands."—*Golden Censer.*

—Since its formation, the "Society for the Prevention of Cruelty to Animals," originated by Mr. Henry Bergh of New York, has prosecuted and convicted 6,809 offenders, and prevented the abuse of animals on 10,857 occasions.

LITERARY MISCELLANY,

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

THE TWISTER.

"A twister, in twisting, would twist him a twist,
And, twisting his twists, seven twists he doth twist;
If one twist, in twisting, untwist from the twist,
The twist, untwisting, untwists the twist."

A RAVELED rainbow overhead
Lets down to life its varying thread:
Love's blue,—Joy's gold,—and, fair between,
Hope's shifting light of emerald green;
With, either side, in deep relief,
A crimson Pain,—a violet Grief.

Wouldst thou, amid their gleaming hues,
Clutch after those, and these refuse?
Believe,—as thy beseeching eyes
Follow their lines, and sound the skies,—
There, where the fadeless glories shine,
An unseen angel twists the twine.

And be thou sure, what tint soo'er
The broken rays beneath may wear,
It needs them all, that, broad and white,
God's love may weave the perfect light!
—*Mother Goose for Grown Folks.*

HOW THE CHINESE MAKE SMALL FEET.

THE Chinese women seem to have the same mania for small feet that many American women possess for small waists; and their manner of securing the desired quality is exactly the same. The following interesting description of the process is given by a gentleman who spent a considerable time in studying their character and customs:—

"It is supposed by many foreigners that this curious compression of the feet is accomplished by means of wooden or iron bound shoes placed upon the feet in infancy, effectually dwarfing them by preventing their growth altogether. But this is by no means the case. It is next to an impossibility for a foreign gentleman to secure the privilege of examining a foot thus deformed; but after more than a week of the most skillful diplomacy, in all of which I was aided and abetted by Miss Lucy H. Hoag, preceptress of the mission-school for girls in Kiu-kiang, I succeeded in persuading a girl about fifteen years

of age to allow me to be present when the gay covering was removed from her foot; afterward in Shanghai, by the liberal use of money, an elderly woman of the small-footed class was persuaded to gratify my curiosity by removing the bandage from her foot; and from the knowledge gained on those occasions and afterward I will briefly describe the method of 'making the foot,' as it is called.

"The binding is rarely, if ever, commenced before the child is five years, and in most cases not until she is six or seven years old. This delay is to allow the limbs a vigorous start and growth, and the girl to learn how to walk firmly. The operators are usually women who make this their business, although frequently the mother, or some other female member of the household, takes the matter in hand. In the first place, all the toes, excepting the great toe, are folded down under the foot, the fleshy part of the heel is forced downward and forward, and a bandage (consisting of a strip of colored muslin four or five feet long and three inches wide) is wound back and forth in a figure of eight, over the folded toes, along the length of the foot, across the instep, and around the heel, pressing that toward the great toe to shorten the foot. The bandage is wound snugly at first and then tightened a little at each succeeding operation. This gradually throws the instep up, and virtually breaks it, so that when the bandage is removed the front part of the foot may be moved like a door upon its hinges. Under this process the foot becomes attenuated until it is merely a mass of bones covered with tendons and skin. The development of the muscles of the calf is also checked, and the leg tapers from the knee downward, and the entire limb loses its elasticity, although no excessive weakness is observed. How the circulation is kept up through the extremities is more than I can understand.

"In the course of six or eight years, if daily attended to, the elongated bone of the heel,

which is about all that is left of this part of the foot, is brought within a very few inches of the great toe; the broken instep and folded toes are bound together with the ankle in an ugly bunch bulging outward above what seems to be the foot, and the great toe and the heel alone are thrust into the little embroidered shoe, and it is pronounced a perfect lady-foot. The heel is usually an inch or more higher than the toe, and a block of wood is placed in the back part of the shoe to support it. This gives the woman the appearance of walking

as any heavy work is concerned, small-footed women are useless; and the housework in families where the women have small feet is always performed by males, or by female servants who have natural feet.

"At first the operation of bandaging is very painful. The bandage is removed every morning; the foot is cleansed, carefully inspected, and then rebound. Of course, before the foot is utterly 'dead,' as it is termed, the quickening of the circulation when the bandage is removed and the severe compression when it is again applied cause excruciating pain. In the early morning hours the traveler, in moving about a Chinese city, will hear from almost every house the cries of little girls undergoing their daily torture.

"A well-known missionary gives the following illustration:—

"I remember being greatly distressed one day by the crying of a child: "O auntie, auntie, *don't* do so, it hurts; it hurts *so* much!" And then followed a long, quivering, sobbing "O-o-oh!" I tried not to mind it at first, and kept on with my writing for a little while; but I could n't stand it very long,—the sobbing was too piteous. So I laid down my pen, put on my hat, and went round the corner into the alley from which the sounds came. It was dirty enough and narrow enough, I can assure you; but that was nothing.

I only wanted to ascertain what could be the cause of this most pitiful outcry, and what it was that "auntie" was doing. So I pushed open the door that led into one of the court-yards, and there I saw how the matter stood. On a high bench, with her feet dangling half-way to the ground, sat a little girl about five years old, her face swollen with crying, and the tears pouring down her flushed cheeks; and near by, seated in a chair, was that dreadful "auntie," a fat, middle-aged woman, who held one of the child's feet in her hand, while the other foot was hanging down bandaged very tight, and locking more like a large pear, tied round with blue cotton cloth, than a natural-shaped foot. There the old auntie sat, with the other little bare foot in



upon her tip-toes, as she wriggles along, stepping with nervous rapidity, and throwing out her arms to balance herself. A lady with very small feet is obliged to use a cane in walking, or to rest her hand upon the shoulder of a servant, which is a mark of especial gentility.

"The wide and embroidered trousers conceal the unsightly bunch above the shoe, and the uninstructed observer supposes that he is looking upon a tiny but perfectly formed foot. The length of the shoe is really a mere matter of taste. The most fashionable length is, I think, about three inches, although I have a pair in my possession, once worn by a woman in Foochow, which are but two and one-half inches long on the bottom. Of course, so far

her hand, looking at it first on one side and then on the other, and particularly examining the parts where the little toes had been turned under and compressed by the bandages which had just been removed. She found these parts full of cracks and sores, and into these what do you think she put? *Powdered saltpeter*, to keep the sores from mortifying; and then she bound up the little foot again as tight as she could, and left the poor little sufferer, with streaming eyes and dangling feet, still sitting on the bench!

“Girls often grow thin and spiritless during the first year after binding is begun. Often the skin cracks or (just over the instep) it bursts, and severe disease sets in, and not infrequently mortification or gangrene ensues; and as amputation is regarded as very dishonorable, and is, therefore, not allowed, of course the little sufferer soon dies.

“When three or four years have passed, if the operation has been carefully performed, the foot becomes, so far as feeling is concerned, lifeless, and ceases to give pain. But, all through life, the bandaging must be continued, to keep the foot in shape, and to enable the woman to walk at all. Unbandaged, the foot would have no firmness,—it would be a mere powerless mass upon the limb, with which it would be impossible to move. With the foot firmly bandaged, some of these poor creatures mince along at quite a respectable rate of speed, and strange as it may seem, some of them will even walk ten or twelve miles in a day on their way to and from some especially sacred temple, or in making visits to their friends.

“Notwithstanding the severe pain resulting from this bandaging at first, mothers insist upon it, and little girls are often quite anxious to have it begun; for it is the fashion, and, according to the average female estimate in all lands, a little suffering, more or less, is of no consequence when contrasted with the disgrace of being ‘out of fashion.’ Of course, the little girls are not always under the immediate eye of their mothers; and when, for a moment, the pain overmasters their pride, they will slyly loosen the bandage; but the fault is soon discovered, and the relieved member unmercifully brought back to its cruel bondage.

“So far as I can learn from those most familiar with the facts, compression of the feet is more inconvenient than dangerous, either to life or health; and intelligent natives have frequently assured me, with all that superior wisdom which an educated Chinaman knows so well how to assume, that they did not regard it as half so pernicious as the custom our American ladies have at times adopted, of compressing their waists, since the former, at the worst, only endangers the individual, while the latter entails feebleness and suffering upon posterity.

“Some travelers in China profess to be greatly pleased with what they call the dainty little feet of the ladies, and go into ecstasies over their exquisitely wrought shoes; but to me, especially after I became familiar with the *modus operandi*, it was a hideous and repulsive deformity, all the more offensive since it was self-imposed. No amount of sentiment could reconcile me to the sight of those poor cripples hobbling along in momentary danger of falling,—the very picture of degraded helplessness. Perhaps in justice I ought to add, that some few Chinamen of advanced ideas whom I met, professed to regard this custom as useless and wrong; but even while they were ready to admit its evils, they were no less emphatic in the opinion that there is no help for it. Custom is a *law*, which no one dreams of violating.”—*Rev. R. C. Houghton.*

A BATH IN THE DEAD SEA.

IT has often occurred to us that persons who have unbounded faith in mineral waters would do well to visit the Dead Sea, in the waters of which they would undoubtedly find “salts” enough to satisfy them. If not, there is a mineral spring in this State to which we could recommend them if they want something that will take the skin off. A correspondent of the *Washington Star* gives the following description of a bath in the Dead Sea:—

“The water, which is quite clear, and nearly the color of the Niagara River below the falls, seemed to me a little more bitter and salt than that of Salt Lake, although brighter and more attractive to the eye when seen close at hand. Its supporting power struck me as a little greater, also, than

that of Salt Lake, as the body floated more easily, and the difficulty of swimming was greater on account of the inability to keep one's feet under water. So large a quantity of salt is held in solution that the water has what is called, I believe, a 'ropy' appearance, much like a plate of well-made tapioca soup. I observed, however, that when we came out of the water there was not a large deposit of salt crystals on the body, as after a bath in Salt Lake, and the feeling of the skin, instead of being dry and prickly, as I expected, was rather oily and sticky. Our dinner that night was seasoned with salt made from Dead Sea water by solar evaporation. It was a little lighter in color than the best article of brown sugar. Its crystals were large and hard, and though foreign substances were evidently present, in considerable quantity, it was not unpleasant to the taste.

"I was told that two quarts of the water will produce one quart of salt, but this is probably an exaggeration. To complete the statistics of this remarkable body of water, I may add what many of my readers may already know, that there is no living thing of any kind in it; that even the driftwood brought down by the floods in the Jordan is speedily cast upon its shores; that its length is about 45, and its greatest width about 10, miles; that it is over 1300 feet deep at the deepest place, and that the immense quantity of fresh water poured into it daily is undoubtedly taken up by evaporation, as its great depth below the basin of the Mediterranean must preclude the idea of a subterranean outlet."

HOME COURTESIES.

A WRITER in *Harper's Bazar* makes these excellent suggestions concerning courtesy at home:—

"The placing of the arm-chair in a warm place for mamma, running for a footstool for auntie, hunting for papa's spectacles, and a score of loving deeds, show unselfish and loving hearts. But if mamma never returns a smiling 'Thank you, dear,' if papa's 'Just what I was wanting, Susie,' does not indicate that the little attention is appreciated, the children soon drop the habit. Little people are imitative creatures, and quickly catch the

spirit surrounding them. So, if when mother's spool of cotton rolls from her lap, the father stoops to pick it up, bright eyes will see the act, and quick minds make a note of it. By example, a thousand times more quickly than by precept, children can be taught to speak kindly to each other, to acknowledge favors, to be gentle and unselfish, to be thoughtful and considerate of the comfort of the family. The boys, with inward pride of their father's courteous demeanor, will be chivalrous and helpful to their younger sisters; the girls, imitating the mother, will be gentle and patient even when big brothers are noisy and heedless. In the home where true courtesy prevails it seems to meet you on the very threshold. You feel the kindly welcome on entering. No rude eyes can scan your dress. No angry voices are heard upstairs. No sullen children are sent from the room. A delightful atmosphere pervades the house—unmistakable, yet indescribable."

FLIRTATION.

WE cannot find language sufficiently emphatic to express proper condemnation of one of the most popular forms of amusement indulged in at the present day in this country, under the guise of innocent association of the sexes. By the majority of people, flirtation is looked upon as harmless, if not useful, as some even consider, claiming that the experience gained by such associations is valuable to young persons, by making them familiar with the customs of society and the ways of the world. We have not the slightest hesitation in pronouncing flirtation pernicious in the extreme. It exerts a malign influence alike upon the mental, the moral, and the physical constitution of those who indulge it. The young lady who has become infatuated with a passion for flirting, courting the society of young men simply for the pleasure derived from their attentions, is educating herself in a school which will totally unfit her for the enjoyment of domestic peace and happiness should she have all the conditions necessary for such enjoyment other than those which she herself must furnish. More than this, she is very likely laying the foundation for lifelong disease by the dissipation, late hours,

late suppers, evening exposures, fashionable dressing, etc., the almost certain accompaniments of the vice we are considering. She is surely sacrificing a life of real, true happiness for the transient fascinations of unreal enjoyment, pernicious excitement.

It may be true, doubtless is, that the greater share of the guilt of flirtation lies at the door of the female sex; but there do exist such detestable creatures as male flirts. In general, the male flirt is a much less worthy character than the young lady who makes a pastime of flirtation. He is something more than a flirt. In nine cases out of ten, he is a rake as well. His object in flirting is to gratify a mean propensity at the expense of those who are pure and unsophisticated. He is skilled in the arts of fascination and intrigue. Slowly he winds his coils about his victim, and before she is aware of his real character, she has lost her own.

Such wretches ought to be punished in a purgatory by themselves, made seven times hotter than for ordinary criminals. Society is full of these lecherous villains. They insinuate themselves into the drawing-rooms of the most respectable families; they are always on hand at social gatherings of every sort. They haunt the ball-room, the theater, and the church when they can forward their infamous plans by seeming to be pious. Not infrequently they are well supplied with a stock of pious cant, which they employ on occasion to make an impression. They are the sharks of society, and often seize in their voracious maws the fairest and brightest ornaments of a community. The male flirt is a monster. Every man ought to despise him; and every woman ought to spurn him as a loathsome social leper.

Flirting is not confined to young men and women. The contagion extends to little boys and girls, whose heads ought to be as empty of all thoughts of sexual relations as the vacuum of an air-pump of air. The intimate association of young boys and girls in our common schools, and, indeed, in the majority of educational institutions, gives abundant opportunity for the fostering of this kind of a spirit, so prejudicial to healthful mental and moral improvement. Every educator who is alive to the objects and interests of his pro-

fession knows too well the baneful influence of these premature and pernicious tendencies. Many times has the teacher watched with a sad heart the withering of all his hopes for the intellectual progress of a naturally gifted scholar by this blighting influence. The most dangerous period for boys and girls exposed to temptations of this sort is that just following puberty, or between the ages of twelve and eighteen or twenty. This period, a prominent educator in one of our Western States once denominated, not inappropriately, "the agonizing period of human puppyhood." If this critical period is once safely passed, the individual is comparatively safe; but how many fail to pass through the ordeal unseared!

The most painful phase of this subject is the tacit—even, in many cases, active—encouragement which too many parents give their children in this very direction, seemingly in utter ignorance of the enormity of the evil which they are winking at or fostering. Parents need enlightenment on this subject and need to be aroused to the fact that it is one of the most momentous questions that can arise in the rearing and training of children.—*Plain Facts.*

THE UNITY OF LANGUAGE.

SOME of the most interesting researches of the present century have been made with regard to the probability of the original unity of language. These investigations have traced all language back to three great centers:—

1. The *Aryan*, the parent of the ancient Sanskrit, Persian, Greek, Latin, Celtic, Gothic or Teutonic, and through these the modern European tongues and our own English language.

2. The *Semitic*, embracing the Hebrew, Syriac, Arabic, and some African languages.

3. The *Turanian*, comprising the dialects of the Mongols, Tartars, Turks, and Indians.

The fact that many of the principal words of the languages classed as *Aryan*, such as father, mother, fire, sun, hand, mouth, etc., have similar sounds in these different tongues, and that ideas connected with a more advanced state of civilization, such as ink, paper, gun, etc., have no similarity, seems to prove that the Aryan nations sprang from a common stock in Central Asia. By compar-

ing the Sanskrit, the oldest of the Aryan languages, with others of that class, very much has been learned concerning the social, political, and intellectual conditions of these people. Prof. Papillon and Max Müller assert that it is more than probable that the material elements with which the Semitic and Aryan started were originally the same.

It is now announced that Prof. Rudolph Falb, of Germany, who has been spending the last two years in South America, has discovered additional proofs of the affinity of languages. While in Bolivia, he studied the Aymara tongue, which is of very ancient origin, having been in use before the Spanish conquest, and being still spoken by 8,000,000 people of the aboriginal blood. He finds in it an unmistakable affinity to the Semitic, Arabic, and Hebrew. From this, Prof. Falb affirms that the high plateau of South America was the cradle of the Semitic, as that of Asia was the home of the Aryan races.

Four miles south of Lake Titicaca is the ruin of an Aymara temple containing a large stone covered with hieroglyphs which Prof. Falb claims to have interpreted, finding in them proof of a great flood.

Animal Intelligence.—I had a setter dog which was greatly afraid of thunder. One day a number of apples were being shot upon the wooden floor of an apple room, and as each bag of apples was shot it produced through the rest of the house a noise resembling that of distant thunder. My dog became terror-stricken at the sound, but as soon as I brought him to the apple room and showed him the true cause of the noise, he became again buoyant and cheerful as usual.

Another dog I had used to play at tossing dry bones to give them the appearance of life. As an experiment, I one day attached a fine thread to a dry bone before giving him the latter to play with, and after he had tossed the bone about for a while, as usual, I stood a long way off and slowly began to draw it away from him. So soon as he perceived that the bone was really moving on its own account, his whole demeanor changed, and rushing under a sofa, he waited horror-stricken to watch the uncanny spectacle of a dry bone coming to life. I have also greatly

frightened this dog by blowing soap-bubbles along the floor. One of these he summoned courage enough to touch with his paw, but as soon as it vanished he ran out of the room, terrified at so mysterious a disappearance. Lastly, I have put this dog into a paroxysm of fear by taking him into a room alone and silently making a series of horrible grimaces. Although I had never in my life hurt this dog, he became greatly frightened at my unusual behavior, which so seriously conflicted with his general idea of uniformity in matters psychological. But I have tried this with less intelligent dogs without any other result than that of causing them to bark at me.—*Nineteenth Century.*

A Singular Religion.—The religion of the Hindoo leads him to perform the most onerous duties and subject himself to the most severe trials of physical endurance. A form of self-inflicted punishment or self-imposed penance which we have never before seen mentioned is described as follows :—

“Stretching himself on the earth on his back, the devotee takes a handful of moist earth, and placing it on his upper lip he plants in it some mustard seed and exposes himself to the dews of the night and the heat of the day till the seed germinates. In this position the man must lie, in a fixed, motionless condition, without food or drink, till the vegetating process liberates him, which will be, generally, about the fourth day.”

Curious Names of Editions of the Bible.—Among the many strange and curious things of the early literature of printing are several quaint and humorous titles which have been given to certain old editions of the Bible. An edition called the “Bug” Bible was printed in London in 1551 by Nicholas Hyll. The nickname arose from the following: “So thou shalt not nede to be afraid for any Dugges by night.” Now it is, “Thou shalt not be afraid for the terror by night.”

The “Breeches” Bible was printed in Geneva in 1560, and is so called from that word being used in Gen. 3 : 7, instead of “aprons.”

The “Treacle” Bible was printed in 1568 by Richard Jugge. It reads: “Is there no

tryacle in Gilead?" In 1609, the word "tryacle" was changed to "rosin:" "Is there no rosin in Gilead?" The word "balm" was not introduced until 1611.

The "He" Bible, printed in London in 1611 by Robert Baker, takes its nickname from a curious error in Ruth 3:15: "He measured six measures of barley and laid it on her, and he went into the city." In the same year, another and entirely distinct edition was printed, in which the word "she" was substituted for "he," above mentioned, and hence the name "She" Bible was given it, to distinguish it from the "He" Bible.

The "Vinegar" Bible of 1717 is so called because the headline of Luke, chapter 20, read, "The parable of the vinegar," instead of "the vineyard." The printer of this edition was one J. Basket, of Oxford, and because of the numerous typographical faults, it was sometimes called the "Basketful of errors."

Telltale Lips.—"I have noticed," said Leigh Hunt, "that lips become more or less contracted in the course of years in proportion as they are accustomed to express good humor and generosity, and peevishness or a contracted mind. Remark the effect which a moment of ill-temper and grudgingness has upon the lips, and judge what may be expected from a habitual series of such movements. Remark the reverse, and make similar judgment. The mouth is the frankest part of the face; it cannot in the least conceal its sensations. We can hide neither ill temper with it, nor good; we may affect what we please, but affectation will not help us."

Remains of an Ancient Race.—A recent number of the *New York Times* contained an account of the existence in the interior of New Mexico of fourteen villages of Indians who are the only living representatives of the old Aztec race which inhabited this continent long before its discovery by Columbus. The tribe numbers about 7000 in all. One of their villages, containing 800 individuals, consists of two immense stone houses shaped like pyramids, and five stories in height. In the interior of these curious houses their religious rites are performed and the sacred fire of Montezuma maintained.

Self-Luminous Dials for Clocks.—These recently invented curiosities can be easily made by almost any one as follows: Cover a white enamel card with a layer of white varnish or white wax dissolved in warm turpentine. Before the coating is dry, dust upon it by means of a fine sieve sulphide of barium, one of the substances which possess the peculiar property of shining in the dark after having been exposed to sunlight or a very bright artificial light. Sulphide of calcium has the same property in a lesser degree.

—The famous old Dr. John Brown, who was of old the minister at Haddington, England, was in the habit of talking to his divinity students in a way which might wisely be followed by some of the professors of the present time. He would say to them, "Young gentlemen, ye need three things to make ye good ministers; ye need learning, and grace, and common sense. As for the learning, I'll try to set ye in the way of it; as for grace, ye must always pray for it; but if ye have na brought the common sense with ye, ye may go about your business."

—The Japanese have many queer customs, most of which seem to be exactly the opposite of what, considered from our standpoint, they should be. For instance, the carpenter pulls his plane toward him instead of shoving it, and the teeth of his saw are set in such a way as to cut only with the upward pull. Their books are printed on but one side of the leaf, and they commence reading at what we would call the back side of the book. The lines run up and down the page instead of across, pages being numbered at the foot. In their clock the face turns instead of the hands.

—Success is found at the end of hard work. "Many people have no other way to succeed in this world than to pull others back; but the true way is to elevate others as high as we can, and then put ourselves above them."

—There is no time spent with less thought than a great part of that which is spent in reading.

—A quarrel is, nine times out of ten, merely the fermentation of a misunderstanding.

POPULAR SCIENCE.

New Metals.—The researches which are being made by numerous able chemists at the present time into the character of peculiar mineral substances, especially one known as *gadolinite*, found in Sweden and Norway, are bringing to light many new and curious facts. Within the last two years the discovery of no less than ten new metals has been announced. The following is the list: *davyum*, *mosandrium*, *philippium*, *ytterbium*, *decipium*, *neptunium*, *lucsesium*, *scandium*, *uralium*, and, lastly, *norvegium*.

The Power of Niagara.—Dr. Siemens, who is an authority on such subjects, declares that “the waterfall of Niagara—a hundred millions of tons an hour, falling a hundred and fifty feet—may be made, by dynamo-electrical machines, to yield a motive power equal to all the mechanical forces of the world. Yet it was not so long ago that the opinion entertained of its usefulness was very limited, though expressed by a practical man. ‘With a couple of cows,’ mused an American in the dairy trade, this ‘waterfall would make the finest milk-walk upon earth.’”

The Phosphorescence of the Sea.—That curious spectacle, the luminosity of the sea which causes its waves to look like billows of fire, often seen in tropical regions, is also visible in northern latitudes at this season of the year. It is due to the phosphorescent properties of a minute little creature with a somewhat formidable name, the *Noctiluca miliaris*. “It is a gelatinous little speck of a fellow, in shape like a peach, but only $\frac{1}{8}$ of an inch in diameter. The light, which is of a greenish hue, arises from scores of minute points. A glass of water taken where these creatures are present may contain myriads of them. Nets and ropes drawn through the sea pick up millions of *Noctiluca*; and the ropes and meshes are made luminous by them until they become dry.”

The Flying Fox.—This is the name given to a large bat found on the Bonin Islands. Like other bats, this curious creature is nocturnal in its habits, flitting about in the night and frequenting the banana and other fruit trees during the day-time. It feeds upon fruit, rice, sweet potatoes, boiled peas,

and similar food. “If a big piece of potato is given it, the fragment is grasped by one of the hind legs, and not having an opposable thumb, it is held firmly against the breast. Reaching up the head, the bat tears away a large mouthful and then chews it a long time, making a smacking sound in the act, and at each movement of the jaws thrusts out its lanceolate tongue. The fiber of the potato and the pulp of the fruit are invariably ejected from the mouth, and just before doing this, one or two vigorous sucks are heard, as if the animal was drawing out the remaining juice. This performance is accompanied by a singular jerk of the head. In the act of chewing, the morsel is changed from one side of the mouth to the other. When its appetite is fully satisfied it begins to scratch its body with its hind leg. The long tongue also comes into service to cleanse the fur. It is a curious sight to see the long nail on the thumb used as a toothpick. The toes are also employed for a similar purpose.”

The Boomerang.—The stories told about this strange instrument by visitors to the wilds of Australia are so strange and marvelous that for a long time they were considered incredible; but it is now pretty well established that the boomerang is not a myth. It is thus described by a scientific journal:—

“This curious weapon, peculiar to the native Australian, has often proved a puzzler to men of science. It is a piece of carved wood, nearly in the form of a crescent, from 30 to 40 inches long, pointed at both ends, and the corner quite sharp. The mode of using it is quite as singular as the weapon. Ask a black to throw it so as to fall at his feet, and away it goes full 40 yards before him, skimming along the surface at 3 or 4 feet from the ground, when it will suddenly rise in the air 40 or 60 feet, describing a curve, and finally drop at the feet of the thrower. During its course it revolves with great rapidity, as on a pivot, with a whizzing noise. It is wonderful so barbarous a people should have invented so singular a weapon, which sets laws of progression at defiance. It is very dangerous for a European to try to project it at any object, as it may return and strike himself. In a native’s hand it is a formidable weapon, striking without the projector being seen; like the Irishman’s gun, shooting round a corner equally as well as straight-forward.”



GOOD HEALTH.

BATTLE CREEK, MICH., OCTOBER, 1879.

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

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WHAT IS MALARIA?

THIS interesting question has been often asked, and frequently answered, though not in a manner which has been considered satisfactory. During the present season Prof. Klebs, of the University of Prague, and Tomassi-Crudeli, of the University of Rome, have together conducted an investigation of the malaria of the Roman Campagna, with the following conclusions:—

1. The poison of malaria is met with in malarious localities even during the season when man does not contract malarial disease.

2. At this season of the year the poison is found in the layers of the air in contact with the surface of the ground in malarial sections. The experimenters collected the poison by means of powerful blowers by which large quantities of air were forced against the surface of glass smeared with glycerine, in which the poison was caught and retained.

3. Large quantities of water hinder the development of malaria.

4. The poison of malaria is a distinct organism, belonging to the genus *bacillus*. It is found in the soil of malarious regions in the form of minute spores.

5. When the malarial spores or germs are received into the system of an animal they develop into long filaments which separate by transverse division into shorter filaments, new spores being developed at the points of division. The organism has been named *bacillus malaria*.

In experiments upon animals, the observers found that liquids containing the spores described, when injected into the blood of rabbits, produced malarial fever possessing the characters of remittent fever in man, causing great enlargement of the spleen,—commonly known as ague-cake in human beings,—to-

gether with increase of coloring matter in the spleen and other parts of the body. When the liquid was filtered before injection, so as to remove the spores, no such results were observed.

STAR PROPHECIES.

NEWSPAPER agitators, pseudo-scientists, and fanatics are still prognosticating all sorts of evils as impending in consequence of the malign influence of the stars, notwithstanding the frequent exposure of the absurd notion by numerous scientific authorities, and others capable of showing up its weak points. The latest production on the subject is a pamphlet published by a gentleman in Chicago, entitled, "Astronomical Etiology, or Star Prophecies concerning Coming Disasters on the Earth, from 1881 to 1885." The pamphlet contains a reproduction of the original article by Dr. Knapp which was published in the *New York Medical Journal*, and which was the scarecrow that originated the "perihelion scare," together with some fearfully dubious predictions by a Danish astro'ogger who studied the stars more than two hundred and fifty years ago.

As a sort of antidote for the wild and unscientific notions contained in other parts of the book, the publisher very candidly inserts a letter from the pen of Prof. E. Colbert, which very clearly and conclusively shows that although it is possible that plagues may occur as predicted, yet in case they do they will be "entirely independent of perihelion passages." Prof. Watson, formerly of Ann Arbor, and Prof. Harkness, of Washington, fully concur in the opinions of Prof. Colbert.

The only explanation of the facts used as arguments in support of the perihelion pestilence which is required is afforded by the circumstance that in India, the home of cholera, the plague, and other kindred epidemic dis-

eases, the conditions favorable to the production of these diseases occur periodically, and, by mere accident, coincidentally with the perihelion of Jupiter, about which so much has been made. This is clearly seen by the following quotation from a speech delivered by the Hon. J. H. McGowan in the House of Representatives last May:—

“Dr. Peters, in his History of the Asiatic Cholera, claims that ever since 1756 (one hundred and twenty-three years ago) it has recurred as an epidemic in periods of twelve years each, corresponding with the twelve-yearly festivals of the Hindoos. The disease is native to India, and constantly exists there in some form. During these festivals, which are pilgrimages to the various shrines, thousands, and even millions, leave their homes and journey and mingle together. In this way the disease is spread and becomes epidemic. It follows the great routes of travel to the west and northwest until it passes through Asia into Europe and eventually to America. In 1826 it became epidemic in Hindostan, its native home, and gradually spread until, in 1829, it was distributed throughout Russia, reaching England in 1830-'31.

“In the spring of 1832 it was brought to Quebec, from whence it was carried up the St. Lawrence and across the lakes to Detroit, where it met the United States troops going to the Black Hawk war. It was distributed to all the national posts and forts in the then extreme West, being specially severe at Fort Dearborn, Chicago, Fort Crawford, near Prairie Du Chien, and Fort Armstrong, at Rock Island. From the latter place it was carried down the Mississippi River, striking New Orleans in October of the same year.

“Twelve years thereafter, or in 1841, this contagion started in another tour around the world. It was found at Hurdwar in 1843; at Afghanistan, in Persia, in 1845; at Teheran in 1846, and Astrakhan in 1847. In 1848 it reached Havre, and was carried to New Orleans in some German emigrant ships the same year. From New Orleans it followed the travel up the Mississippi and along the Ohio. From St. Louis it was carried over the emigrant route to San Francisco, and eventually was distributed over nearly the

whole country. Thus it will be seen that within the space of fourteen years the country suffered two visitations from the terrible plague. The first time, being introduced at Quebec and following the rivers and lakes, it reaches New Orleans by going down the Mississippi; the second time, it starts at New Orleans and goes up the river, and is thus distributed. Each time it follows the great national highways, and each time it is largely distributed by the United States Army, which it at the same time decimates.

“The last great twelve-yearly cholera epidemic commenced in India in April, 1865. By means of railroads and steamboats it traveled more rapidly than it had in previous years, reaching Mecca, on the Red Sea, by May 2, Alexandria by June 2, and England by the 10th of July. Emigrant ships soon brought it to New York City, where it readily passed the local quarantine, made a center of distribution of the great city, and from thence spread along the railroads and highways of travel all over the country. This author, Dr. Peters, who I believe is a resident of New York and a member of her board of health, writing previous to 1874, says,—

“‘In 1877 and 1879 we may expect an outbreak of the disease such as there was in 1781-'83, 1817-'19, 1829-'31, 1841-'43, 1853-'55, and 1865-'67.’”

PORK LITERATURE IN ENGLAND.

A YEAR or two ago our little tract on “The Dangers of Pork-Eating” found its way to England, and received a warm reception from the members of the Vegetarian Society which has long existed there and is making considerable of a stir of late. We soon after received a note from the Secretary of the society, R. Bailey Walker, Esq., asking the privilege of reprinting the tract in England. We of course granted the request, and were recently very much pleased to receive from Mr. Walker a package of neat pamphlets which we readily recognized as the reprint contemplated, with some improvements over our first edition.

In a recent number of the *Dietetic Reformer* the editor, in referring to the pork nuisance, remarks,—

“It is only fair to say that we have re-

eived most efficient aid in abating this nuisance from an American pen. The severe but already popular exposition on the mischiefs of pork-eating, written by Dr. Kellogg, of Michigan, has been so welcomed here that the Executive of the Vegetarian Society has reprinted it in a popular form, at a penny, and an edition of ten thousand copies is selling fast. Again and again we have had reported to us the discontinuance of the use of pork in this family or in that, after reading 'Pork,' lent by a Vegetarian friend. The savory thing had lost its charm. 'We could n't eat any more!'

DANGER FROM EATING MOLDY FOOD.

FROM a somewhat extended experience with cooks of all colors, nationalities, and qualities, we are convinced that there is a general carelessness respecting the use of food which has become tainted by mold. It is not necessary that food should be covered with the green velvet characteristic of certain kinds of mold; if it has a musty taste or odor, though the eye may fail to discover anything wrong, it is not simply unfit for food but is absolutely dangerous to be taken into the stomach. The following case is a good illustration of the danger referred to, and will be a hint of sufficient clearness to induce all intelligent people to take such precautions as will render such an accident impossible unless through the intentional maliciousness of the cook; we quote from *Public Health* :—

"A singular case of poisoning from eating a pudding made in part of moldy bread is reported in the *Sanitary Record*. The main facts of the case may be briefly stated as follows: The principal materials of the pudding consisted of scraps of bread left from making toast and sandwiches, and they had been about three weeks accumulating. To these scraps were added milk, eggs, sugar, currants, and nutmeg. The whole was baked in a very slow oven, and was subsequently eaten by the cook, the proprietor of the eating-house in which it was prepared, the children of the proprietor, and two other persons. All of these became violently ill, with symptoms of irritant poisoning. One of the children (aged three years) and one of the adults died. The necropsy of the body of the child

caused the medical men to suspect poisoning, and accordingly the viscera, together with the remnant of the pudding, the materials used in making it, the matter vomited, etc., were sent to a chemical analyst, Mr. Alfred Allen, for examination. He made tests for several poisons, but without positive result. He was led to look for ergot in the pudding, and was soon startled to find unquestionable evidence of its presence, as far as chemical reactions went, though he was unable, with the aid of the microscope, to detect any actual ergot. From these facts Mr. Allen infers that the reactions hitherto supposed to be peculiar to ergot are common to other poisonous fungi."

WORK FOR WOMEN.

ONE of the most noble of all callings is that of nursing. Often, indeed in a great proportion of cases of acute diseases, much more depends upon the faithfulness of the nurse than upon the attendance of the physician. Good nursing is of more value to the patient suffering with typhoid fever than all the medicine the doctor can prescribe or the druggist concoct; and the same is true of many other febrile diseases.

Here is a grand opening for women. Good nurses are always in great demand. One who is thoroughly competent can command almost any price. We have known of nurses who had \$20 a week and were constantly engaged. Women are peculiarly adapted to the work, and every facility is now offered them for becoming thoroughly fitted for the profession. For several years regular schools for nurses have been held in New York and other cities, and new ones are being constantly formed. At the present time there are three such schools in New York, three in Boston, one in Philadelphia, one in New Haven, and one in Washington.

—So much trichinous pork and other diseased meat has been shipped to England that the people of that country are becoming much alarmed and are taking strenuous measures to prevent danger from this source in future. The feeling of many of the people is well shown by the cook, who, in advertising for a place, specified that she would not work "where American meat was used."

KEEP THE MILK CANS CLEAN.

It is probable that few people realize the importance of the most scrupulous cleanliness in the care of milk, not being aware of the danger of eating milk which has begun to undergo septic or fermentative changes. No doubt milk men and the keepers of dairies are very much at fault in this direction. A great many cases of severe disorder of the digestive organs, bowel diseases, etc., are easily traced to this cause. It is now well known that children nursed with a bottle are often made sick by neglect to cleanse as thoroughly as is necessary the rubber tube or nipple attached to the bottle. The same neglect to cleanse thoroughly the pans, cans, pails, or vessels in which milk is kept may produce similar disturbances not only in children, but in grown persons. The following paragraph from a report by Dr. Cameron, in the *Dublin Journal of Medical Science*, gives an account of a case illustrating the evils of neglects of this sort:—

“Dr. Muter records a case in which the family of a gentleman suffered from sickness and purging after partaking of ‘the usual morning’s milk.’ He found that the milk had a foul odor, and what appeared to be numerous fungoid cells. The can which contained the milk was examined, and fungoid growths and bacteria were found adhering to the joints, which were filled with decomposing milk constituents. Dr. Muter concluded from these observations that the filthy vessel contained a septic material—probably of a poisonous fungoid nature—which was propagated in the milk. I fear much that milk venders are not very particular in reference to the cleansing of their pails and cans; they certainly are not remarkable for clean hands and well-brushed clothes.”

Relief of Color-Blindness.—A Frenchman has discovered that if a person who is afflicted with Daltonism, or color-blindness, looks through a solution of a peculiar coloring matter known as *fuchsine*, the difficulty is corrected. Another ingenious Frenchman has invented a kind of glasses which embody this new invention, and will undoubtedly be very gratefully received by persons afflicted with color-blindness.

HYGIENE OF SLEEPING.

A VOLUME might be written respecting the conditions which affect the body either favorably or the opposite, during sleep; and since we spend, or should do so, at least as much as one-third of our lives in sleep, it is of the utmost consequence that the very best conditions should be supplied while the system is being repaired and renovated by sleep. Nevertheless, we shall just now notice but one of the numerous important questions which are proposed for answer in connection with this subject. A subscriber asks for an answer to the question whether a healthy individual is likely to suffer harm by sleeping with one who is ill or weakly, and whether it is possible for an individual to contract consumption by sleeping with one who is suffering with that disease.

We are prepared to answer this question both promptly and emphatically, *Yes*. We are not believers in the somewhat popular doctrine that individuals possess a certain subtle something or nothing, invisible, immaterial, and intangible, called vitality, animal magnetism, or some other mysterious name, a force which can be imparted to others, or which may be abstracted by others either with or without the consent of the will. For the following reasons, however, we believe that it is a most injurious and reprehensible practice for persons who are well to occupy the same bed with individuals who are very much out of health:—

1. A person who is out of health is likely to be nervous and restless, thus disturbing the rest of a person occupying the same bed.
2. Persons who are suffering with any serious disturbance of the normal conditions of the body will suffer more or less disturbance of the circulation and of the production of heat. They will be either unnaturally cold, requiring too much clothing for one in health, or feverish, requiring a less amount of protection than is required for health and comfort by a person not suffering in a similar manner.
3. But by far the most potent objection to the practice referred to is the fact that persons who are in ill health generally contaminate the air in immediate proximity to their bodies much more than does one in health. The excretions of a person in poor health are abnor-

mal in character as well as the special organs or functions which may be primarily deranged. For example, the skin of a person whose kidneys are the seat of disease will often excrete a very considerable quantity of the effete matter which should be carried away by the kidneys. Even constipation of the bowels will so derange the excretions of the lungs and skin as to give them a most offensive odor. Persons suffering with dyspepsia, catarrh, chronic rheumatism, or any one of a score of chronic maladies which might be mentioned, likewise present various morbid conditions which would be decidedly prejudicial to the health of a well person sleeping under the same cover. The skin absorbs as well as excretes; and if exposed for several hours each night to a confined atmosphere saturated with the effete emanations from a diseased body, the health must certainly suffer. It is on this account that it is so injurious for children or very young persons to sleep with aged persons. The poisonous emanations from an infirm and decaying body are absorbed by the active skin of a young person, and so great damage may be done the young person without appreciable benefit to the older one except in giving him animal heat.

4. One more objection to this very common practice should be urged; viz., that many diseases which are not easily communicable may by frequent and prolonged contact during sleep be communicated from a diseased person to one enjoying perfect health. The most marked example of this sort is afforded by that most dreadful of all chronic maladies, consumption. Numerous experiments have settled, beyond room for question, the fact that consumption may be communicated to an individual by so close an association with a sufferer from the disease as is necessitated by sleeping in the same bed. This is a practice that should not be allowed under any but the most extreme circumstances. By a disregard of this rule, many a wife, husband, mother, sister, or nurse, who has carefully watched over a consumptive during the later stages of the disease, has fallen a victim to the same malady within a few months subsequently.

As a general rule which cannot be violated without injury to one party at least, only healthy persons should occupy the same bed,

and persons of nearly the same age. Indeed, there is little room to doubt that it would be far better for the health if each adult person should occupy a bed by himself.

Diet and Sea-Sickness.—A gentleman who has had much experience in ocean travel writes to the *Boston Journal of Chemistry* that a plain diet of fruits, grains, and vegetables, with little or no meat, no pastry, and but two meals a day, will insure almost any one against sea-sickness. This has been our theory for a long time, but we have not had sufficient opportunity to make a personal test of the matter to warrant us in affirming it. The gentleman seems to have had abundant experience to justify his statements. He does not claim that every case of sea-sickness might be thus prevented, since, as he very truly remarks, "Most people are in a condition, by reason of their daily habits at home, to insure sea-sickness, and they ought to be thankful that nature steps in, and, using the ship's motion as the exciting cause, *clears them out*, and almost compels them to fast for a while during the clearing process."

A Long-Lived People.—Some time since one of our medical exchanges published the following interesting item respecting the "longevity of Quakers":—

"It appears, from the annual list of the members of the Society of Friends, that the number of deaths among that body during the past year, in Great Britain and Ireland, was 281. There are about 17,000 members; the mortality is consequently much below that of the population generally, and shows the longevity which prevails among the members of the Society. The infant mortality was very small, only 15 deaths of children under one year; between one and five years 18 occurred; between five and twenty years, 11; between twenty and thirty years, 19; from thirty to forty years, 15; and 11 only between forty and fifty years. Above fifty years old the numbers rise, the deaths in the first decade being 24; between sixty and seventy, 46; while from seventy to eighty (the most fatal period) the deaths were 65. Above eighty and below ninety the number was 53—a very

high rate out of a total of 281; while from ninety to a hundred there were 5 deaths. Of the total 281, 147 were males and 134 females.

"If we inquire into the causes of this exceptional longevity, they are easily seen. They are embraced in the old couplet—

"Temperance, cleanliness, and repose
Slam the door on the doctor's nose."

Cause of Hard Times.—The constant cry of "hard times" has led us to reflect on the probable cause of this general complaint; and we have been thoroughly convinced that the difficulty is not so much with the times as with the people. The necessaries of life cost less on the whole than before the war, while wages are better. The real trouble is that too much money is expended for superfluous articles. The real essentials of life cost but little. It is the useless and unnecessary things which eat up the earnings of the laborer, and the profits of the merchant and the farmer. Let the people adopt simple habits of eating, drinking, and dressing, and the diminished expense of living, added to the immense saving from the lessened amount of sickness, will bring an era of unparalleled prosperity in less than half a decade.

Sensible Temperance Talk.—It is the general fashion of temperance lecturers to spend all their force in exposing the evils of alcoholic intemperance, other sorts of intemperance which are becoming almost if not quite as dangerous to the health and prosperity of the country being overlooked. It is rare indeed that tobacco, opium, absinthe, and other damaging narcotics and stimulants are mentioned. We are glad to see that Gov. Garcelon of Maine has taken the field in favor of temperance. "In a recent address delivered before the State convention, he rebuked other forms of intemperance besides that produced by the use of intoxicating beverages. He was for many years a practicing physician, and had an excellent opportunity to observe the habits of the people. He spoke of the use of tobacco among the young as arousing an appetite for stronger stimulants, besides being deleterious in itself. In addition to chewing and smoking, he said that

snuff-dipping is rapidly coming into vogue in the North, as it has long been a filthy and disagreeable habit in the South, especially among the women. The use of opiates has also increased, and the Governor declared that many a man appears on the platform to lecture upon temperance with a bottle of laudanum or black drops in his pocket. The ladies, too, are guilty of the practice of carrying chloroform and ether with which to moisten their pocket handkerchiefs for the purpose of allaying nervous excitement. He referred to a convention of druggists recently held, at which it was stated that opium-eating had increased fearfully during the last few years. The sales in 1877 over those of 1876 increased 92 per cent, and in 1878 over 1877 they increased 64 per cent. He declared that the change from liquor to opium is no improvement, and that, while it does not fire the blood like whisky, it is nevertheless quite as deleterious to physical and mental health, and ought to be strongly discouraged."

Danger from Bad Eggs.—At this season of the year it is often difficult to obtain eggs that are fresh unless they are procured from some farmer who will guarantee their freshness. During warm weather, eggs speedily undergo changes akin to putrefaction. The shell but partially protects its contents from the destructive action of germs, unless it is rendered impervious by the application of some substance capable of filling the pores so that the air cannot pass through.

An English gentleman who has investigated the subject quite thoroughly, finds, upon a careful microscopical examination, that stale eggs often contain certain peculiar cells of a fungoid character. These seem to be developed from the yolk of the egg, that portion which should furnish the material to form the flesh and bones of the chick which the egg would have produced by development under favorable conditions. Eggs containing these cells produced a poisonous effect upon dogs to which they were fed. We knew a case in which a whole family were seized with violent purging in consequence of the use of stale eggs; at least the difficulty could be assigned to no other cause.

Eggs grow lighter as they grow older, by

the evaporation of their fluid contents, causing the internal portion to shrink. This leaves a small air space at one end, which becomes larger as the egg is older, and if it is very stale it will float when placed in water. Such eggs should be discarded as unfit for food.

A Change of Diet.—The *Sanitarian* tells the following amusing story, which suggests the thought that what the people need is not so much to be informed respecting what a healthful diet is, but to be made to feel the importance and necessity of making "a healthy change":—

"A member of the sanitary police force came across a boy the other day who was wheeling home a load of oyster cans and bottles, and, curious to know what use the lad could put them to, he made a direct inquiry.

"'Going to throw them over into our back yard,' replied the boy. 'I took two loads home yesterday.'

"'But what do you use 'em for?'

"'It's a trick of the family,' grinned the lad.

"'How trick?'

"'I'd just as lief tell,' continued the boy, as he spit on his hands to resume his hold on the barrow. 'We're going to have some relashuns come in from the country. We may not have much to eat, but if they see these cans and bottles and boxes they'll think we've had isters, champagne, figs, and nuts till we've got tired of 'em and are living on bread and taters for a healthy change!' The officer scratched his ear like a man who had received a new idea."

Drunken Fowls.—A contemporary is responsible for the statement that "a French doctor has experimented on the influence of alcoholic drinks on fowls. He administered to them brandy and absinthe, and found one and all to take so kindly to their unwonted stimulants that he was forced to limit each fowl to a daily allowance. There was extraordinary development of the cocks' crests, and a rapid and general loss of flesh. The experiments were continued until it appeared that two months' absinthe drinking sufficed to kill the strongest cock or hen, while the brandy-

drinkers lived four months and a half, and the wine-bibbers held on for ten months before they died a drunkard's death."

From the above it would seem that other animals besides man can be made to love liquor; but it also proves that the effects are as fatal to animals as to human beings, thus affording additional evidence of the poisonous properties of the vile drug.

An Unsanitary City.—It is encouraging to see that the common people are becoming aroused to the importance of proper sanitary conditions. The citizens of Milwaukee are making serious complaint because the Milwaukee River is made an open sewer for receiving the filth of the city. According to a contemporary, "one alderman is accused of being opposed to cleaning the river because his brother is an undertaker. A Sunday-school chorus of 'Shall we gather at the river,' is said to have been interrupted by a boy advising them to carry clothes-pins with them for their noses. Even the poets are harping on the subject, and a dweller on the river commences a stanza with—

"'O beautiful river (though black as ink),
Is there not some way to remove thy stink!'"

Obstruction of the Bowels.—One of the most obstinate forms of obstruction of the bowels which the physician ever encounters is that in which the small intestine becomes twisted upon itself or a portion crowded back into the part preceding it, a condition known as *intussusception*. Prof. Frerichs, of Berlin, treats cases of this kind by copious enemata of very cold or iced water and giving the patient nothing but ice to eat until the difficulty disappears.

Why they Looked Young.—An exchange says,

"A few evenings since, while our oldest lawyer was celebrating his golden wedding, our wealthiest physician said to Mr. and Mrs. Hackett: 'You are a young-looking couple to be celebrating your golden wedding. How can you explain this?' 'In the same way,' said Mr. Hackett, 'that I can explain how you came to be rich before you became old—you have kept about as clear of lawyers as we have of doctors.'"

Killed by Whisky.—The *Safeguard* gives an account of a man who fell to the floor instantly upon drinking a quart of whisky, and adds the following very sensible remarks:—

“Dram-drinkers tell us that intoxicating drink is good if not taken to excess; and that a man can make himself sick by eating bread or beef, or drinking milk or anything else. But will they tell us what healthful article of food or drink a man can take, no matter in what quantity, that will drop him on the floor like a dead man in one minute of time. If this is not the effect of a poison, and a very quick poison too, we should like to know what the effect of poison is.”

A Japanese Feast.—Everywhere a great man goes he must be treated with magnificent displays of gluttony and gormandizing, of which the following is one of the most recent illustrations:—

“At Nargasaki, Japan, the merchants entertained Gen. Grant in an ancient temple. The dinner included over fifty courses, and the guests were at table six or seven hours. The feature of the last course was a dish of fish, to be sliced while alive, and served. The General had not the courage to tackle this.”

London Doctors on Alcohol.—Prof. L. P. Yandell, a distinguished Southern physician who is now in Europe, writes to the *Louisville Medical News* as follows of the opinion of English physicians respecting alcohol:—

“After a very extended intercourse with the profession here, I am inclined to believe that a majority of the strong men consider alcohol harmful as a beverage, and a very large number are very doubtful of its efficacy in disease. Such are my own views of alcohol.”

Did n't Need a Thermometer.—The importance of using the thermometer constantly in the administration of baths of all sorts cannot be too much insisted upon. It is impossible to test with accuracy the temperature of either water, steam, or air, by the hand, as the susceptibility of the skin is constantly changing; yet most people are as careless respecting the regulation of the temperature of baths as the old-country nurse who when requested by the doctor to regulate

the baby's bath by a thermometer replied, “Sure, phwat wud oi be afther doin' wid a thermometer? If the baby (bless him!) comes out blue, sure, the wather's too cold; and if the baby (bless him!) comes out red, sure, the wather's too hot. Go away wid yer thermometer, doether dear!”

A Teetotal Reformer.—A gentleman who was once so great a slave to tobacco that when offered by his employer a fine present “if he would quit,” replied that he would not do it “for a cow, horse, and buggy,” through the influence of GOOD HEALTH has been led to abandon not only tobacco, but also strong drink, tea, and coffee, and in consequence finds himself “improving in mind and body.” There are thousands who ought to do likewise.

Thames Water.—The water supply of London is said to be so bad that a competent authority said of it that “it should be first boiled, then filtered, then thrown away.” The same advice might be given with equal and greater appropriateness to those who employ the wretched water often used in small towns where cisterns and foul wells are the sole reliance.

Irish Wit.—The Irishman who was asked by the judge to whom he applied for a license to sell liquor if he could give evidence of possessing a good moral character, showed a very correct idea of propriety when he replied, “Faith, yer honor, I don't see the necessity of a good moral character to sell whisky!”

Well Disposed Of.—The cargo of “rice-meal,” so-called, which was seized at Liverpool some time ago was ordered destroyed. Upon being subjected to analysis it was found to contain nearly one-half its weight of ground marble and about one-fifth of ground husks. The lot consisted of 1007 bags.

—The *Medical Record* says that the members of the Grand Ducal family who suffered with diphtheria were treated by Oertel, an eminent German physician, with antiseptic inhalations, steam, potass. chlorate, salicylic acid, lime-water, chlorine water, alcohol, iron, and other drugs *p. r. n.*, “yet the cases all got well.”

Testimony against Wine.—The historian Smollett states that he observed in his travels among wine-growing nations that when the vintage was poor, the health of the people was better than when there was an abundant crop, making wine more plenty. He considered that "for the preservation of health and proper exhilaration of the spirits there is no beverage comparable to simple water."

Evil Effects of Tight Clothing on Men.—A few years ago it was discovered that heart disease was becoming very common in the British Army, half a regiment of soldiers annually falling victims to the disease. Upon inquiring into the causes of this fatal malady it was found that one of the most prominent was a too tightly fitting uniform. Removal of this cause remedied the evil.

Short Life of Moderate Drinkers.—A London Life Insurance Society divides its insurers into two classes, abstainers and moderate drinkers. It is found that during the last twelve years the mortality has been one-fourth less among abstainers than among the moder-

ate drinkers. That is, only three abstainers die to four moderate drinkers.

Alcohol Neither a Food Nor a Tonic.—At a recent meeting of the British Medical Temperance Association, at which many members of the British Medical Association were present, Dr. Ernest Hart, editor of the *British Medical Journal*, stated that "the medical profession were nearly all agreed that alcohol was neither a food nor a tonic."

A Test for Impure Water.—Add a little tannic acid, which can be bought at any drug store, to the suspected water. If it contains organic matter, a cloudy appearance will be observed after it has stood twenty-four hours.

—A Detroit young lady who used the "Bloom of Youth" and "Flake White" to obscure the effects of small-pox on her face suffered in consequence with paralysis of the fore-arms.

—A reliable authority states that during the last twenty years no less than 100,000 women in England have died of cancer.

FARM AND HOUSEHOLD.

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

To Remove Iron Rust from Linen.—Wash the spots in a strong solution of cream of tartar and water, repeating if necessary, and dry the goods in the sun.

To Clean Tinware.—A damp cloth dipped in common soda will make blackened tin look bright again. Rub the ware briskly with the cloth, after which wipe dry.

To Remove Glass Stoppers.—Pour a few drops of glycerine or sweet oil in the crevice about the stopper, and in a short time it will be loose. If this does not succeed, heat the neck of the bottle and give the stopper a sharp blow.

Winter Care of Geraniums.—Bedded geraniums which it is desirable to save through the winter should have their branches well

pruned back before repotting, and should be placed in a pot but little larger than will contain the roots. If so desired, the plants may be kept safely through the winter by hanging them in a dry, warm cellar, after shaking all the dirt from the roots.

Fruit Stains.—The stains of fruit may be easily and entirely removed by holding them over the fumes of burning sulphur. The burning of one or two ordinary sulphur matches will usually be sufficient, unless the stains are large or of long standing. If the stains have been allowed to dry, wet thoroughly before bleaching. Use no soap, as that will set the color.

How to Save Clover Seed.—One of our best clover seed savers is just at our elbow, and he says: "Tell them the second crop is

for the seed, and is really fit for no other purpose, as it salivates the stock fed on it; that the best time to cut for seed is a very nice point to determine. It should be cut when a majority of the heads turn brown, and before any begin to shed off the little seed pods, each of which contains a seed. Cut the second crop of clover just as though it were for hay, rake it into windrows, and let it lie and take one or two showers; then put it into very small cocks while damp, about one good pitchforkful in a place, and when it is dry put into stacks and cap with something that will turn water; or what is still better, if you have a shed or barn, put it there and let it remain until you get a huller to take it out for you. There are hullers enough now in the State to hull all the seed needed for home use, and the owners of the hullers are willing and anxious to go to any section where work can be had. Let our farmers save all the clover seed they can, and thus help to make thousands of dollars for the State, now sent out each year for clover seed to sow."—*Rural Sun*.

To Mend Stockings.—A lady who finds that in the practice of the homely art she brings comfort to her family gives these directions for stocking-mending: "Given a dozen pairs of woolen ribbed socks. Select from them the two or three pairs most worn; cut away the heels and toes, and lay by the better parts for use in mending—well, yes, for patches. From the best hose retained to be repaired cut out the worn heel, and from the patches cut a new heel precisely like the old one. First sew the bottom of the heel, then sew it into the place made vacant. Use soft cotton, or else the fine, soft mending yarn, which comes, of all colors, on spools. Sew the raw edges "over and over," about as close as a nice overcast; so that when this new heel is worn out you have only to pull the thread and insert another. The thread must not be so tight but that the seam will flatten and be imperceptible to the foot. To sew in such a heel will require about one minute. If the toe is worn, so that the new darns seem to take from the old, and the rent is made worse, cut it off so far toward the instep as is thin. From the top of one of the socks put aside, cut a new toe like the old one. Sew across the end, and then around the foot, observing to make the seam, as before, flat and soft. When again worn out, repeat the process, till the entire dozen, like the fabled ducks, have eaten one another up."

TREATMENT OF FLOUR.

THE following facts from the *American Miller* relative to the care of flour are well worth remembering by every housewife, since a large proportion of the unpalatable cookery attributed to "poor flour" is the result of the improper care of that article:—

"Flour is peculiarly sensitive to atmospheric influences, hence it should never be stored in a room with sour liquids, nor where onions or fish are kept, nor any article that taints the air of the room in which it is kept. Any smell that is perceptible to the sense will be absorbed by flour. Avoid damp cellars or lofts where a free circulation of air cannot be obtained. Keep in a cool, dry, airy room, and not exposed to a freezing temperature, nor to an intense summer or artificial heat for any length of time, above seventy or seventy-five degrees. It should not come in contact with grain or any substances which are liable to heat. Flour should be sifted and the particles thoroughly disintegrated, and then warmed before baking. This treatment improves the color and baking properties of the dough."

HOUSEHOLD HINTS AND HELPS.

ABOUT sixty drops of any thin liquid are equal to a common sized teaspoonful.

Four tablespoonfuls, or half a gill, will fill a common sized wine-glass.

Four wine-glasses or sixteen tablespoonfuls will fill a half-pint measure, a common tumbler, or a large coffee cup.

Ten eggs of average size weigh one pound.

A tablespoonful of salt will weigh about one ounce.

One pint of molasses weighs one and one-quarter pounds.

One quart of flour weighs one pound.

One quart of Indian-meal weighs one and one-quarter pounds.

A quart of white sugar, powdered, is equal to one pound and one ounce. A quart of best brown sugar weighs one pound and two ounces.

One pint of water or milk weighs nearly one pound.

A cubic foot of water weighs a little more than 63 pounds, and contains about seven gallons.

One of the very best materials for scouring knives, forks, spoons, and tinware is common water-lime. Be careful to secure that which is free from grit.

NEWS AND MISCELLANY.

—There are 4000 postmistresses in the United States.

—There are not less than 200 artesian wells in San Francisco.

—There are 70,000 more men than women in San Francisco.

—The Edison telephone is about to be introduced into Paris.

—There are 44,000,000 acres of public land in the Southern States.

—Five telegraphic cables now unite Sicily with the main land of Italy.

—John B. Gough has delivered eight thousand addresses on temperance.

—There are said to be about 30,000 telephones in use in the United States.

—The Japanese government has now granted the right of Christian burial.

—The yearly mortality of the globe is 33,333,333 persons, or 62 per minute.

—Owing to the diminished birth-rate, the population of France is decreasing.

—There were nearly 300 lives lost in the celebration of the 4th of July, this year.

—There are 450 lady dentists in the United States, and three times as many studying dentistry.

—The first newspaper printed by steam was an issue of the *London Times*, for Nov. 29, 1814.

—A decree has been published in Paris, pardoning or reducing the punishment of 1369 prisoners.

—It is estimated that there are in the United States seven hundred miles of saloons and grog-shops.

—The number of post-offices in the United States has increased from 75 to 40,876 in ninety years.

—There have been constructed in the United States within the last five years 11,563 miles of railroad.

—A postal card, mailed in Boston Feb. 25, made a tour around the world by way of Liverpool in 106 days.

—The widow of Commodore Vanderbilt, besides other charities, supports thirty-four families in the South.

—It is estimated that over 200,000 persons in the United States are addicted to the habit of eating opium.

—An earthquake shock about five minutes long was felt over a large portion of Western New York Aug. 21.

—Over 1,800,000 gallons of petroleum are brought to the surface every day in the oil regions of Pennsylvania alone.

—The project for bridging the English Channel, originated by a French engineer, is to be put into execution at once.

—A suit for \$1,000,000 has been brought against the estate of Brigham Young by John Taylor, a trustee of the Mormon church.

—Experiments in England with the Krupp cannon show it to be equal in penetrating force to Woolwich guns of twice its weight.

—Paul Boynton recently swam from Long Branch to Coney Island, a distance of thirty-five miles. The time was twenty-eight hours.

—The hay crop of the United States is equal in value to three times the cotton crop, ten times that of wool, and twice that of wheat.

—The Emperor William is the only ruling European sovereign born in the last century. He is 82 years old, does not use tobacco, and lives very simply.

—An arrangement has been made which allows United States vessels to fish in Russian waters near Alaska upon the payment of a money compensation.

—The deepest running stream known is the Niagara River, the channel of which, just under the lower suspension bridge, is 700 feet deep by actual measurement.

—The government of Nicaragua has begun the work of improving the San Juan River, to open direct navigation between Lake Nicaragua and the Caribbean Sea.

—In Russia, several Jews have been tried for attempting to escape conscription for the army by submitting themselves to the mutilation of an eye by a Hebrew surgeon.

—Ice-making is carried on quite extensively in the South. Ice can be manufactured there for less than \$1.00 per ton; while imported ice costs from \$10.00 to \$15.00 per ton.

—There are over 724,000,000 acres of surveyed land belonging to the United States yet unoccupied and undisposed of, and upwards of 1,000,000,000 acres yet to be surveyed.

—American coal is used in Switzerland, where it costs about ten dollars a ton, the price being less than that of German and French coal there, and the quality much better.

—In one day, recently, there were 72,967 bags of letters, and 120 bags of newspapers, sent out from New York to Liverpool, which was the largest foreign mail ever sent out in one day.

—The length of the Hoosac Tunnel is four and three-fourths miles. A mining tunnel in Europe has recently been completed which is fourteen miles in length. It was begun in 1782.

—The mail steamer Durban, carrying dispatches from the Cape of Good Hope to England, made the voyage of 6000 miles in 18 days and 16 hours. This is the fastest long-distance run on record.

—Pennsylvania spends \$83,487,000 for strong drink, and \$3,000,000 for educational purposes annually; and New York City spends \$70,000,000 for liquor, and only \$3,000,000 for public education.

—In Prussia, one person out of every 450 is insane. Dr. Finkelberg, Professor of Medicine and Member of the Prussian Commission of Public Health, says, "The cause is chiefly the abuse of alcoholic liquors."

—A Mr. Anderson, of New York, while picnicking on the Palisades in New Jersey, fell over a cliff, and lodged among the rocks at the bottom after falling a distance of 260 feet. He is still alive and is expected to recover.

—The number of people in Europe over ninety years of age is 102,831, of whom 60,303 are women.

In Italy, Austria, and Hungary there are 2012 persons over one hundred years of age, of whom the majority are men.

—Great Britain has been considered the wealthiest of all civilized governments; but according to comparative estimates recently made, it is found that in France the value of private and public property amounts to over \$2,000,000,000 more than in the United Kingdom.

—A book was exhibited at the late Paris Exposition which is the smallest volume ever produced by the printing-press, and the type the most minute ever cast. The whole of Dante's "Divine Comedy" is compressed into 500 pages two inches long and one and one-half inches wide.

—The system of cremation is quite prevalent in Europe. A crematory is in process of erection in England. Holland has a cremation society, and in Switzerland cremation has been legalized by the government. The crematory erected in Pennsylvania some time since has been converted into a canning factory.

LITERARY NOTICES.

PORK AND ITS PERILS. Revised edition. London, Eng.: F. Pitman, 20 Paternoster Row. Manchester, 91 Oxford St.

A revised reprint of "The Dangers of Pork-Eating Exposed," published at this Office five years ago. Many thousand copies of this little tract have been circulated in this country, and hundreds of families have been induced to abandon the use of the flesh of the scavenger beast through its perusal. The present edition is issued by the English Vegetarian Society, and is sold at the small price of "one penny." We understand that it is having a rapid sale.

VEGETARIANISM THE RADICAL CURE OF INTEMPERANCE. By Harriet P. Fowler. New York: M. L. Holbrook & Co.

The object of this little work is to show that the employment of a diet consisting largely of animal food encourages the appetite for liquor. The strongest arguments adduced to establish this proposition are embodied in the paper of Mr. Charles O. Groom Napier, entitled, "A Cure for Intemperance," which constitutes a considerable part of the first chapter of the book. While agreeing with the author that the use of animal food is in some degree stimulating, and thus a means of encouraging the use of more powerful stimulants, it seems to us much more logical to take broader grounds upon the subject, condemning alike all stimulating food. In other words, we would not simply prescribe a vegetarian, or even a "lax vegetarian" diet for a person whose tendencies are toward intemperance, but would proscribe *all stimulating foods*. The list of stimulating articles of diet would include some articles of food which the author prescribes.

We notice a number of minor errors, which leave room to suppose that the author is not fully familiar with the scientific part of the subject. But the most grievous error which we have discovered in the cursory examination which we have given the work is the admission of the theory held by some few author-

ities, but now pretty generally given up by the more intelligent part of the medical profession, both in this country and in Europe, that alcohol is a food. Indeed, this theory of the relation of alcohol to the body is taken as a basis for the arguments which occupy quite a portion of the work, and which we are consequently obliged to consider as not well founded. The simple fact that some alcohol disappears in the body is no evidence that a portion is utilized as food, or in carrying on the vital processes. We hope the work will do some good, but we cannot give it the hearty commendation we should be pleased to give to it, on account of the position taken respecting alcohol.

CONCLUSIONS FROM THE STUDY OF ONE HUNDRED AND TWENTY-FIVE CASES OF WRITERS' CRAMP. By George M. Beard, M. D., New York.

Our thanks are due the author for this exceedingly valuable paper. It may well be considered as the most reliable and exhaustive treatise on the subject to be found anywhere. The author brings out many new points respecting the disease, and suggests improved methods of treatment.

ANNUAL REPORT OF THE LOUISVILLE HOUSE OF REFUGE. Louisville, Ky.

From personal acquaintance with the superintendent of this institution, as well as from the evidence afforded by the above-mentioned report, we have good reason for believing that Louisville has one of the best managed houses of refuge in the country.

THE PRESENT STATE OF OTOLOGY. Affections of the Lachrymal Apparatus. Iritis and Some of its Dangers. Methods of Treating Chronic Inflammation of the Middle Ear. Four papers by Prof. S. L. Jones, A. M., M. D. Chicago.

Prof. Jones occupies the chair of Ophthalmology and Otology in the Chicago Medical College, and is one of the most accomplished physicians of the great Western metropolis. The four papers named above are all valuable contributions to medical literature, being ably written and rich in suggestive and original thought.

AUTO-THERAPEIA, OR SELF-HEALTH CULTURE. A Monthly Magazine by Clara Brook-Smith. London, W. Tweedie & Co., 337 Strand. Philadelphia: J. B. Lippincott & Co.

We are in receipt of the first number of this journal, which, as its prospectus states, is devoted to woman's medical work, home medicine, and nursing. In her introduction, the editress says, "The principal object of these papers is to invite the attention of families to the fact that the proper physical development and health of their children are dependent, to a very great degree, upon their own knowledge of the art of training and nursing. No mother can be said properly to discharge her duties to her children who neglects to make herself, to some extent, acquainted with those elementary laws of health which may enable her, in many instances, to ward off the insidious approaches of disease." The undertaking is a most noble one, and deserves the hearty sympathy and patronage of all.

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.

AGENTS WANTED to canvass for **GOOD HEALTH**, which is acknowledged on all hands to be the best, most attractive, most scientific, and most popular health journal in the country. Those who have taken it one year are anxious to renew their subscriptions when the year expires. Now is the time to begin work. A good premium is offered, and a paying commission to the canvasser. Any one who has pluck and energy can make a good living and lay up money during the next three months by acting as agent for this journal. Send in for an outfit with instructions.

We have in preparation a series of charts designed to illustrate the evil effects of alcohol upon the stomach, the liver, the lungs, the brain and nerves, the blood, and other organs and tissues of the body. The set will consist of ten charts, and will be large enough so that all the points illustrated can be seen by a large audience. The charts will be printed on strong, heavy paper, and will be beautifully colored. Each set will be accompanied by a Key explaining the chart, and giving the facts out of which any one of fair ability can construct an interesting, instructive, and entertaining lecture. Every temperance lecturer, and every H. & T. club ought to own a set of these charts; and to encourage a large sale the price will be placed so low that any one who needs a set can afford to procure it. Price, on heavy, strong paper, unmounted, \$5.00. Mounted on cloth with rollers, sized and varnished, \$10.00. Orders will be received at once.

Now is a good time to invest a few dollars in health and temperance literature for the benefit of friends. To those who wish to use the Health and Temperance Annual for gratuitous distribution we will furnish them at the rate of 40 copies for \$1.00 in quantities of 100 or more, or \$2.50 per hundred, by express. Hundreds ought to avail themselves of this liberal offer. Health and temperance tracts will be supplied at equally liberal rates.

We are preparing a series of small health and temperance tracts especially for use by H. & T. Societies. They will be ready soon.

The Health and Temperance Annual for 1880 is rapidly going into the hands of those especially interested in its circulation. The present number of the Annual is decidedly the best one yet published. It is chiefly devoted to temperance, and will be a valuable auxiliary to the Health and Temperance Association. Furnished for gratuitous distribution at an extremely low price.

The Sanitarium is prospering as usual. The number of good paying patients is greater than ever before at this season of the year.

DYSPEPSIA, the work advertised some time ago, is ready, and makes a splendid volume. A beautifully colored frontispiece adds to both the utility and the attractiveness of the book. One of the principal reasons for the long delay was that after it was well under way the publishers decided to make a larger work, which of course somewhat delayed its issue. Orders can now be filled promptly. The price of the work, in cloth, embossed in gold and jet, is 75 cents, post-paid.

We would call the attention of subscribers to the fact that any first-class periodical can be obtained through this Office cheaper than of the publishers, as we can furnish **GOOD HEALTH** with almost any \$3.00 or \$5.00 journal for about the price of one. We will give a full list next month.

A PROFITABLE BUSINESS.—Arrangements have been made with a gentleman of large experience to superintend the sale of "Plain Facts," and the work is being pushed with an energy that astonishes all who have never seen the selling properties of the book tested. Agents engaged in selling it know that they are doing a good work for humanity, and so feel a degree of enthusiasm that would not be aroused by a less useful work. Everybody needs the book, and nearly every one who becomes acquainted with its merits desires to obtain it. The success of those now canvassing for it is exceedingly gratifying to both them and the publishers. One canvasser presented the work to eighteen men in a country town in three hours, and sold a copy to all but three of the number, the first time he was out. Another states that he can sell to nine-tenths of all the intelligent persons he meets. Ladies seem to do as well as men with the work, and those who are now canvassing are making from three to five dollars a day and upwards. Here is an excellent remunerative field of usefulness for experienced canvassers, especially school-teachers, retired clergymen, and middle-aged people possessing some degree of culture and good address.

The first number of the *Health and Temperance Quarterly* has been published, and it ought to be in the hands of every temperance worker. The first number explains very thoroughly the plan of organization of the American Health and Temperance Association, the duties of officers and members, and all other points of interest in connection with the work. It is gratifying to see the interest which is taken in this work wherever it is introduced. State Societies and local clubs are being rapidly organized, and we hope to be able soon to report that nearly every State in the Union has its Society and subordinate clubs all actively at work in this noble cause. Those who wish further information may send for a copy of the *H. & T. Quarterly*, or address any of the officers of the Society.

The second number of the *Sanitarium*, the patients' paper issued quarterly by the Medical and Surgical Sanitarium of this place, is a spicy little sheet, and every old and new patron of that institution will want a copy. Price, only 25 cents a year.