GOOD HEALTH.

A JOURNAL OF HYGIENE.

MENS SANA IN CORPORE SANO.

VOL. 19. BATTLE CREEK, MICH., APRIL, 1884. NO. 4.

*DANGERS IN DIRT.**

BY J. H. KELLOGG, M. D.

Is dirt an enemy or a friend to the race? or is it indifferent in its properties in relation to human kind? Different observers will answer the question in different ways, according as the standpoint from which their observations have been made is a broad or a narrow one. One will assert that, according to his experience, dirt is the prolific mother of a myriad of disorders, the prime cause of such diseases as diphtheria, scarlet fever, typhus, typhoid, and malarial fevers, cholera, yellow fever, and even small-pox. Another will assert that, according to his observation, the grossest neglect of the requirements of cleanliness and the simplest sanitary rules is compatible with the highest health. Still another sees in filth only the predisposing cause of grave maladies. Who is right? Or are all right and all wrong? Even a cursory glance at the progress of civilization will be sufficient to settle this question. When did deadly plagues devastate the earth, depopulating the large cities, and spreading consternation over the world? Was it not when mankind had not yet learned the deadly nature of filth, and looked to an angry Deity as the cause of their woes, whom they sought to appease by sacrificing their children, as was done at Carthage a few centuries before the present era? Nearly two thousand years later, the pope of Rome knew no better way of opposing the ravages of the plague than the issuing of a bull of excommunication, in which he anathematized alike the plague, the Turk, and the comet.

Some little knowledge of sanitary laws appears to have been possessed by both the Greek and the Roman nations at the period of their greatest enlightenment; but the Jews were the only nation who seem to have approached at all closely to the requirements of scientific sanitation. Through their lawgiver, Moses, they received a code of sanitary rules which, in some respects, have never been excelled in any period, not excepting the present enlightened age. Indeed, in the body of rules formulated for his people by Moses, we find the foundation for all subsequent sanitary legislation. To their obedience to these rules may be attributed the exceptional longevity of the Jewish people, so noticeable in all countries, under the most diverse conditions of climate and social condition,—a broken, wandering, outcast people, yet possessing such wondrous vitality as to be able to outvie its competitors in the race of years in every part of the habitable globe. I would here incidentally take occasion to recommend some portions of the Sacred Book as a most excellent treatise on sanitary science. I know of some very good suggestions to be found within its pages respecting diet, rest, exercise, etc., as well as in relation to cleanliness.

A historian tells us that for a thousand years during the middle ages, the bath was not known in Europe; and that article of clothing which, by its frequent change, is so conducive to personal cleanliness, the shirt, is comparatively a modern invention, being unknown before the eighth century. A few hundred years ago the condition of Europeans was scarcely better than that of the barbarous

* A paper read by request before a sanitary convention held at Pontiac, Mich., under the auspices of the State Board of Health.

tribes which roam our Western plains at the present day. In the same room, people cooked, ate, and slept; and not infrequently the oxen which tilled the soil, and furnished almost the sole means of traveling, were sheltered under the same roof with the family. Even so late as the time of Henry the Eighth, England is described by historians as "a land of filth, every room full of grease, fragments, bones, spittle, excrement of dogs and cats, and everything that is nauseous." At this time, London, even then a populous city, had no sewers. Into the open gutters of the street were turned the garbage, slops, and offal from the households on either side, where it was allowed to accumulate, fermenting and decaying in the sun, and sending forth the most putrescent and pestilential odors. The city of Madrid was in an equally bad condition little more than a century ago, such a thing as a privy being unknown so late as 1760. With such a state of things, is it any wonder that the most deadly epidemics swept over the world with terrific effect? Only about two centuries ago London was devastated by a plague so terrible that its ravages were stayed only by the disinfection of the great fire, which laid waste 400 of its principal streets.

The close affinity between disease and dirt is no more clearly traceable in the history of the past than in the experience of the present. The greater attention paid to cleanliness in modern times has stripped the plague of its horrors, and the black death of its power to strike terror to the hearts of nations; but we may still find plenty of examples of the dangerous influence of dirt in any large city. The statistics of New York City show that one-half of the population furnish three-fourths of the deaths; and an inquiry into the conditions under which the sickly half live, shows that dirt is unquestionably the malign influence in operation. In home of the crowded tenements of the city, the mortality rises to fifty-five in a thousand annually, or more than forty more than would be the case if the conditions of life were healthful. But this does not present the whole case, since there are fourteen cases of sickness for every death, making 560 cases of unnecessary illness to each one thousand persons, or half the entire population sick in consequence of filth. The average of life for the whole United States is but a fraction less than forty years; but the filth of our two largest cities, Philadelphia and New York, reduces the longevity of their citizens to twenty-five years. The same difference is observable in England between the inhabitants of the large cities and the rural districts. Statisticians tell us that in such large cities as London, the deaths are so greatly in excess of the births that only two centuries would be required to render the race extinct if the whole population dwelt in cities. Similar facts to an almost indefinite extent might be adduced to show a distinct connection between disease and dirt. We might cite the condition of Memphis and New Orleans at the time of the yellow-fever outbreak a few years ago, and numerous similar instances, with which all sanitarians are familiar; but we forbear.

Let us now consider the question, "What is dirt?" Some one has defined dirt as being "matter out of place,"—a very good definition, as it seems to us, especially from a sanitary point of view. The dirt family is a large and very numerous one, comprising many different species, chief of which are gaseous dirt, organic dirt, and germ dirt. What ordinarily passes for dirt is comparatively harmless, consisting almost wholly of inorganic matter, particles of clay or other earth, which, while offensive to the sight, cannot be readily shown to be by any means greatly obnoxious to health. The dangerous forms of dirt are those which are not so readily recognized as such, and which, on account of their subtle character, are in an eminent degree pernicious in their influence as well as fatal in their effects. These three dangerous forms of dirt are usually quite intimately associated, having much the same sources, and hence cannot be fully considered separately. We shall not attempt to make our study of the subject at all exhaustive or technical. We wish simply to point out some of the greatest and most common dangers to life which are associated with the different forms of dirt, and so will not stop to frame formal definitions.

As regards the source of dangerous forms of dirt, man is his own greatest enemy. From his lungs constantly pours forth a stream of poison-laden air, and from his skin emanates the same deadly effluvia in lesser quantity. Every human being produces on an average more than four barrels of carbonic acid gas each day. This volume of gaseous dirt is poured into the air in the immediate vi-

cinity of the individual, so that contamination occurs with the greatest facility, and with certainty, unless some efficient means is adopted to prevent it. This constant outflow of noxious matter is augmented by contributions of the same sort from lower animals, from plants during the night, when deprived of the action of sunlight, and also by the burning of candles, lamps, gas-jets, and all other forms of combustion. The latter sources of carbonic acid amount to more than is generally supposed, each candle producing half as much per hour as a man, and a large lamp or gas-jet two or three times as much. A stove in which the draft is obstructed by a damper is also a not infrequent source of this gas, and in dangerous quantities.

It is well known that carbonic acid gas will not support respiration nor combustion. Its suffocative property has given it the name of "choke damp" in coal mines, in which it is frequently encountered. It is naturally present in the air to the amount of two parts in five thousand of air, and may be increased considerably without immediate injury to life, provided it come from some other source than the lungs of human beings or animals. Under the latter circumstances, however, its increase in a very slight degree, even so small an amount as one part in five thousand of air, renders the air unfit to breathe again. This fact is due to the bad company which the gas keeps when coming from the sources named; viz., a variety of organic filth which is always present in the expired breath, and is extremely poisonous in very small quantities. It is this kind of dirt which gives the air of a close room which has been occupied for some time the peculiar fusty odor which is so noticeable to a person entering such a room from the open air. This poison is associated with the carbonic acid poison so intimately and in such regular proportions that the latter becomes the best index to the amount of the former. This kind of dirt is almost infinitely more dangerous than most of the forms of gaseous filth with which we ordinarily come in contact. It is present in the expired air in such a quantity that each breath contaminates three cubic feet of air to such a degree as to render it unfit to breathe again, and a cause of disease if it is breathed.

As we ordinarily respire about twenty times a minute, it is easy to compute how long the air in a seven-by-nine bedroom would last, the air in it being used up at the rate of sixty cubic feet per minute, or double the quantity if the room is occupied by two persons. Supposing the room to be nine feet in hight, and wholly unventilated, the air will be used up inside of ten minutes, or a proportionately less time if occupied by more than one person. It is fortunate, indeed, for the civilized part of the human family that our doors and windows do not fit air-tight, and our walls are not wholly impervious to air. Nature compels us to be more obedient to her laws than our own perverted instincts would incline us to be, by forcing into our domiciles through every crack and crevice or an occasionally-opened door, the life-giving oxygen which we take such infinite pains to exclude. It is only when we come to appreciate these facts that we can understand the assertion of the sanitarian that each human being requires not less than three thousand cubic feet of pure air per hour to wash away the gaseous and organic filth with which he contaminates the air about him.

Perhaps some one will raise the query, How do we know that the breath is the source of these deadly enemies to life? I will attempt to demonstrate their existence by an experiment or two, so simple that any of you can repeat the same at home if you like. This flask contains a small quantity of carbonate of calcium, commonly known as chalk, a compound of carbonic acid and lime. I will pour upon the powder a dilute solution of hydrochloric acid. You observe that a lively effervescence at once occurs. The acid which I have added is taking the place of the carbonic acid, which accordingly escapes as a gas, and passing through this tube, bubbles up through the liquid in this other flask, which is lime-water. A moment ago the liquid was clear and colorless as water; you see it has now become milky in appearance, the opaque white color becoming more and more marked as the experiment continues. The white color is due to the reunion of the carbonic acid with the lime in solution in the water, forming little particles of chalk exactly like those which we had in the first place in this other flask. This experiment reveals to us a simple test, by means of which the presence of carbonic acid may be determined, although the gas is colorless and odorless. Let us apply the test

to this jar in which a candle was burning a moment ago, but gradually burned lower and lower until its flame expired, quenched by the carbonic acid of its own production. Adding a little lime-water, and shaking the jar, the change in color is apparent, and we have the evidence of the fact that carbonic acid is produced by combustion. Now let us apply the test to the breath. This we can readily do by breathing through this tube, and allowing the expired air to bubble up through a quantity of lime-water contained in this small beaker. In less time than is occupied by the explanation, you see the same change in color, affording an ocular demonstration of the presence of carbonic acid in the breath. By collecting the white precipitate, and weighing it, we may readily determine the amount of carbonic acid present in the breath. It is possible to vary the experiment in such a way as to show that a small quantity of carbonic acid is eliminated by the skin, which is a breathing organ as well as the lungs.

The organic poison of the breath is much more difficult to detect, as its proportion is not large, though its potency is great. It is associated with the moisture of the breath, and, taking advantage of this fact, I have collected a small quantity by breathing through a small chamber surrounded with a freezing mixture at a temperature near zero. I hold in my hand a solution which is a test for organic matter. As I add the test, drop by drop, you observe that the purple color which appears for a moment quickly disappears, instead of remaining, as you notice to be the case with the pure water in this other beaker. The amount of the test which thus disappears furnishes an index to the amount of organic poison in the breath.

(*To be Continued.*)

The Poor of London.—The following statement of the condition of the poor in some parts of London we know is not an exaggeration, having personally met examples almost equally distressing in character. Even in the larger cities of our own country, poverty and squalor almost as great may sometimes be found.

"The condition of some homes is 'pestilential.' To get into them, you have to visit courts which the sun never penetrates, which are never visited by a breath of fresh air, and which never know the virtues of a drop of cleansing water. In one cellar was found a father, mother, three children, and four pigs. In another room was a man ill with small-pox, his wife just recovering from her eighth confinement, and the children running about half-naked and covered with dirt. In an underground kitchen, seven persons were found living, and a little child lying dead in the same room; while another apartment contained father, mother, and six children, two of them being ill with scarlet fever. Immorality is but the natural outcome of conditions like the above."

THE "BLACK BATHS" OF THE KAMTCHADALES.

BY G. W. AMADON.

"TENT Life in Siberia, and Adventures among the Koraks and Other Tribes in Kamtchatka and Northern Asia, by Geo. Kennan," is a very readable sort of book, published by Putnam's Sons, New York, and Low & Marston, London.

In company with a Russian Major, and a guide named Dodd, the author pleasantly describes a bath which he took at the Kamtchadale village of Kloochày, as follows :—

"The only places of amusement of which we could hear were the village bath-house and the church; and the Major and I started out, late in the afternoon, with the intention of 'doing' these points of interest in the most approved style of modern tourists. For obvious reasons, we took the bath-house first. Taking a steam-bath was a very mild sort of dissipation; and if it be true that 'cleanliness is next to godliness,' the bath-house certainly should precede the church. I had often heard Dodd speak of the 'black baths' of the Kamtchadales; and without knowing definitely what he meant, I had a sort of vague impression that these 'black baths' were taken in some inky fluid of Kamtchatkan manufacture, which possessed peculiar detersive properties. I could think of no other reason than this for calling a bath 'black.' Upon entering the 'black bath,' however, at Kloochày, I saw my mistake, and acknowledged at once the appropriateness of the adjective.

"Leaving our clothes in a little rude entry, which answered the purposes without affording any of the conveniences of a

dressing-room, we stooped to a low, fur-clad door, and entered the bath-room proper, which was certainly dark enough and black enough to justify the gloomiest, murkiest adjective in the language. A tallow candle, which was burning feebly on the floor, gave just light enough to distinguish the outlines of a low, bare apartment, about ten feet square, built solidly of unhewn logs, without a single opening for the admission of air or light. Every square inch of the walls and ceiling was perfectly black with a sooty deposit from the clouds of smoke with which the room had been filled in the process of heating. A large pile of stones, with a hollow place underneath for a fire, stood in one end of the room, and a series of broad steps, which did not seem to lead anywhere, occupied the other.

"As soon as the fire had gone out, the chimney-hole had been closed and hermetically sealed, and the pile of hot stones was now radiating a fierce, dry heat, which made *re*spiration a painful duty, and *per*spiration an unpleasant necessity. The presiding spirit of this dark, infernal place of torture soon made his appearance in the shape of a long-haired, naked Kamtchadale, and proceeded to throw water on the pile of red-hot stones until they hissed like a locomotive, and the candle burned blue in the center of a steaming halo. I thought it was hot before, but it was a Siberian winter compared with the temperature which this maneuver produced. My very bones seemed melting with fervent heat.

"After getting the air of the room as nearly as possible up to 212°, the native seized me by the arm, spread me out on the lowest of the flight of steps, poured boiling suds over my face and feet with reckless impartiality, and proceeded to knead me up, as if he fully intended to separate me into my original elements. I will not attempt to describe the number, the variety, and the diabolical ingenuity of the tortures to which I was subjected during the next twenty minutes. I was scrubbed, rolled, pounded, drenched with cold water, and scalded with hot, beaten with bundles of birch twigs, rubbed down with wads of hemp that scraped like brick-bats, and finally left to recover my breath upon the highest and hottest step of the whole stairway. A douse of cold water finally put an end to the ordeal and to my misery; and groping my way out into the entry, I proceeded, with chattering teeth, to dress. In a moment I was joined by the Major, and we resumed our walk, feeling like disembodied spirits.

"Owing to the lateness of the hour, we were compelled to postpone indefinitely our visit to the church; but we had been sufficiently amused for one day, and returned to the house satisfied, if not delighted, with our experience of Kamtchatkan 'black baths.'"

Ludicrous as it may appear, this "black bath" is better than to go dirty, and it was not many removes from the genuine Turkish or Russian bath. It certainly shows the fertility of the Kamtchadale brain in improvising medical treatment, though of so rude a sort. Capt. James Riley, who was shipwrecked on the eastern coast of Africa, over fifty years since, and spent some months among the wild Arabs, says that those rude Ishmaelites bathe almost daily, and in the absence of water, while in the great Sahara Desert, they rub their bodies all over with fine sand!

But be it the "fine sand baths" of the Arabs, or the "black baths" of the Kamtchadales, either is better than no bath at all; or like some in civilized life who take a bath only "once in forty years."

PRACTICAL HINTS REGARDING TORNADOES.

BY JOHN D. PARKER, U. S. A.

[THE following article, while not exactly relating to hygiene, contains so many practical hints respecting the means of preserving life, that we quote it at length, trusting that it will be of interest at least to those of our readers who reside in those parts of the country liable to be visited by tornadoes. We ought to add, perhaps, that the writer is mistaken respecting the frequency of tornadoes in Michigan. Probably no State in the Union is more free from them.—ED.]

The following hints regarding tornadoes are given in the belief that many people are killed every year who could save their lives by a little practical knowledge of the movements of these destructive storms.

The tornado *season* is embraced between the first of April and the first of September, but in the latitude of Kansas

City, most tornadoes occur in the months of May and June. As we go north or south of this latitude, they are proportionally earlier or later, and early or late seasons vary the time of their occurrence correspondingly.

Tornadoes occur in the *afternoon*, generally between two o'clock and evening, four o'clock being called the tornado hour.

Tornadoes move from southwest to northeast, generally *east about twenty degrees north*, and their linear movement is ordinarily from thirty to forty miles an hour.

Tornadoes occur on *sultry* days, or when the temperature is very high, and the air is thoroughly saturated with moisture.

Tornadoes occur when the *electrical conditions are high*, or when the air is highly charged with electricity.

The approach of a tornado may be known by ominous clouds appearing in the southwest and northwest. The clouds sometimes resemble the smoke of a haystack, at other times they appear like iridescent fog. Sometimes they present a deep greenish hue, or are intensely black, or have a purplish, yellowish, or bluish tinge. When these two masses or banks of clouds, under the impulse of opposing currents, approach each other, they are thrown into great confusion; there is a roaring, likened to the rumbling of distant thunder, and an upward expulsion of air and vapor. Soon the funnel of the tornado is let down to the earth, and moves to the front, while scuds of clouds play around it. The tornado now formed has four characteristic movements,—a linear movement toward the northeast; a gyratory movement (north of the equator) contrary to the hands of the watch; a zigzag or swaying movement, which leaves dentate edges in the path of the tornado; and a rising and falling movement, the poise of the upper current, by which the tornado leaps over portions of its path.

If one is familiar with these premonitory signs, he is put on his guard; and when the tornado appears, he is prepared to act intelligently and promptly. Under the preceding principles, he can easily determine the projected path of the tornado, from the location of the funnel, and whether it will be necessary to run north or south to escape from it. He must, of course, not run east or west.

When a tornado is imminent, certain precautions should be observed. Doors and windows in houses should be closed, animals in harness unhitched, and animals in stables let out. The safest place in a house is the southwest corner on the first floor, or better perhaps, the southwest corner in the cellar. If a tornado overtakes one on a prairie, lie face downward, head toward the east, and place the hands over the head for protection. If near a low, solid object, like a large stone or stump, lie face downward, east of it, head toward the object, with hands over the head for protection.

Every home should have a dug-out at a convenient distance from the house, or, what is better, a tornado room built into the west or south wall of the cellar, large enough for the family, and for things of great value, like deeds or money.

The destructive effects of tornadoes result from the gyratory movement, which is estimated at from one hundred to five hundred miles an hour. Tornadoes with the hour-glass form of cloud are the most intense, and seem to be irresistible; but the greater number of tornadoes are of a lower intensity, and we can build against them. Frame houses are more tenacious or elastic than brick or stone, and when overthrown, are not so destructive to life. They should have strong frames. Brick houses should have an extra layer of brick laid in cement in the west and south walls. Some houses with very thick walls laid in cement are comparatively safe against most tornadoes.

Houses built near a hill or bluff presenting an elevation, should be located on the northeast side, as the elevation tends to lift the tornado over the house. A grove of hard wood, such as oak, maple, walnut, or hickory, southwest of a house, or a forest southwest of a town, has a tendency to break the force of a tornado, and drive it into the upper air, although it is not safe for a person to be near a tree or in a grove during the tornado, for fear of being struck by flying timber. Occasionally a tornado of great intensity will cut a clean swath through a grove, but forests tend to break the force of tornadoes, and will drive most of them into the upper air. All towns in prairie States should plant heavy groves of hard timber southwest of them. During a residence of forty years in Southern Michigan when it was heavily timbered, tornadoes were unknown, that is, they

were driven into the upper air, and rendered harmless; but since the forests have been cut away, tornadoes in that part of the State have become somewhat frequent and destructive. Not to build and protect against tornadoes seems like not taking medical treatment for fevers. Sometimes a fever proves fatal, but most fevers can be cured, and so most tornadoes can be rendered comparatively harmless.

By a careful study of the principles which underlie these storms, and an observance of the premonitory signs during the tornado season, it is believed that few if any persons who keep their presence of mind and act intelligently and promptly when the storm appears, need be killed by a tornado. Still it is always best to have a clear conscience, whatever may happen.

Meteorologists are carefully studying these storms. The Signal Service already, in their daily reports during the season, indicate the barometric trough of low pressure, extending from the southwest toward the northeast, along which tornadoes move, and it is believed that the time is not far distant when they will predict to certain districts probable tornado days.—*Kansas City Review.*

CHINESE FOOT-BINDING AND AMERICAN CORSETS.

BY MRS. R. W. ELDER.

THE ladies of China have organized an "Anti-Foot-Binding League," and each member pledges herself to prevent the practice of the barbarous custom in her family, and at the same time to prevent members of the family from marrying into families that practice it. The Society is said to already number about three hundred members. There are few of us who will not be impressed by the spirit of progression which prompts this radical movement, and we are all gratified to see that "women move on," even in conservative China. But when it comes to debating that most barbarous practice of American women, compared to which foot-binding is a civilized and Christian act, the practice of wearing corsets, we are on the defensive in a moment. We ridicule the old fogy who is so absurd as to oppose a garment so harmless and so universally worn, we argue, and grow indignant; we lay our corset in folds, and turn it around, and slip it up, then down, to prove our emphatic assertion that it is perfectly loose and comfortable. But no reasoning, thinking woman need be told that a corset ruins health, even though it is not worn tight. As life depends upon air,—breath,—we should cultivate our breathing capacity instead of depressing it. "Careful study has shown that flexibility of the cartilages is due to their constant exercise, day and night. Twenty times a minute these flexible parts are bent, and then allowed to return again to their natural position. This constant bending and unbending allows them no opportunity to become stiff and unyielding, like the bones; but when the chest is imprisoned in a corset, this continued movement becomes impossible, and the consequence is that a process of stiffening is set up, and after a time the once flexible, yielding cartilages become as rigid as the rest of the ribs. The inevitable result of this change is a permanent limitation of the movement of the lungs. They expand to a limited degree upward and downward, but lateral expansion has become as impossible when the corset is laid aside, as when it is worn." *

But we always affirm in the most crushing manner that we are perfectly miserable when we leave it off. Now is not this one fact enough to condemn us, and the corset too? The more difficult we find it to give up any indulgence or habit, the more harm that habit is doing us. Any pernicious indulgence produces much discomfort when disturbed. The smoker suffers intensely when deprived of his cigar. The toper is almost wild with nervousness and general wretchedness, unless he has his usual potation.

But let us take another view of this subject. Did nature finish her work in so imperfect a manner, that to hold it together and render it presentable to the eye of man and comfortable to itself, we must strap it up, tie it down, and hook it under? Was she so careless in her imitation of her divine model that it yet needs two yards of corset jean, four dozen small whalebones, two dozen eyelets, one strong lacing string, and two strong, narrow strips of steel, the whole to be stitched, starched, laced, and hooked over the sensitive stomach, drawn around the lungs, and over the burdened, aching spine, to make us a perfect and complete image of our Creator, who saw that all his work "was good"?

* Home Hand-Book of Domestic Hygiene and Rational Medicine.

Yea ! verily, we are fearfully and wonderfully made ; but I never had realized how "fearfully," until I heard a woman say, "I should fall to pieces if I should lay aside my corset." I shudder to think of what that woman's fate would have been if the corset had never been invented; and I sometimes find myself wondering whether she would have gone to pieces suddenly, or whether it would have been a matter of years,—a few joints and members at a time.

Truly, the American woman cannot consistently raise her voice against the twin immoralities—whisky and tobacco—so long as she demoralizes herself with the corset.

Marion Harland says, "You have no more right to do that which is not conducive to your physical health, than you have to drop a furtive pinch of arsenic into your neighbor's cup. Put your soul in thought outside of your body, make an inventory of its necessities. It is your soul's nearest neighbor. See to it that the soul loves it as itself."

THE COMMUNICABILITY TO MAN OF DISEASES FROM ANIMALS USED AS FOOD.

BY DR. HENRY BEHRENS, OF ENGLAND.

THE question as to what diseases are communicable to man from diseased animals used as food, is at present occupying the attention of physicians and physiologists in this country and on the Continent; and a variety of experiments are being carried out, with a view to the solution of the numerous problems involved in this inquiry. A variety of causes has led to the necessity of arriving at a definite conclusion upon the subject with as little delay as is compatible with the difficulty and importance of the investigation, among which may be enumerated the increasing importation of foreign cattle, the extension of the system of sewage irrigation of land, the general acceptation of the germ theory of the causation of epidemics, the certainty of the spread of typhoid and scarlet fevers by an improper milk supply, and an attempt to solve the problem of the relatively small death-rate of the Jewish, as compared with the general, population of Great Britain. Papers were read, and a discussion held on the subject, at the annual meeting of the British Medical Association at Cambridge during this summer, in the section of Public Health under the presidency of Dr. Acland, the Regius Professor of Medicine in the University of Oxford, and the following resolution was agreed to : "That, in the opinion of this section, the subject of the communicability of disease to man by animals used by him as food, urgently demands careful inquiry, both in regard to the actual state of our knowledge thereon, and to the legislation which is desirable in connection therewith ; and that the Committee of Council of the Association be invited to appoint a Committee for the purpose of reporting on this matter."

From the care taken to provide the Jewish community with animal food free from communicable disease, the question has especial interest for them, and the following summary may be taken as conveying the present *consensus* of scientific opinion upon the subject.

No doubt can of course arise as to the communicability of the class of diseases in infected cattle known as "parasitic," of which trichinosis may be taken as a type. In these cases, the parasite is simply transferred from the flesh of the beast to that of the man, in which it finds a congenial home, and, in the process of its development, frequently produces fatal results. Trichinosis, until recently unknown in this country, is frequently met with in Germany, owing to the custom there of eating pork, particularly in the form of sausages, more than half raw. Thus in Berlin, where the inspection of meat is obligatory, fifteen outbreaks of the malady were officially reported during the year 1878; and in one of the suburban districts, half of those affected died. The immunity of Great Britain from trichinosis is unfortunately a thing of the past, two outbreaks having been recognized during the past decade, one in Wokington in 1871, and a second on board the schoolship "Cornwall" in 1877, both traceable to the use of pork as food, in one case home-fed, in the second imported from America. The case against meat infected with parasites, of which there are several distinct varieties, is so clearly proved that no object can be gained by discussing it further.

With this exception, the animal diseases which are at present, or have been, regarded as transmissible to man through ingested meat, are seven in number ; viz., (1) cattle-plague, (2) swine-typhoid, (3)

pleuro-pneumonia, (4) foot and mouth disease, (5) anthracoid diseases, (6) erysipelas, and (7) tubercle. As regards the first two, the evidence as to their power of specific infection when taken as food is conflicting. The resemblance they both bear to typhoid fever in their symptoms has caused them to be regarded as the analogue in cattle of this malady; but their power of communicating this or any other disease to man is doubtful, and may be considered as still *sub judice*. The sale of such meat is, however, rightly stopped; because, even if incapable of conveying its specific contagion, it is undoubtedly much deteriorated in quality, and its nutritive power much diminished. The evidence against pleuro-pneumonia is much stronger, as it is a distinctly contagious and febrile disease, tainting the entire body of the animal affected, and warranting its exclusion from the meat market. Yet so inefficient is the working of the legislation upon the subject, that Dr. Carpenter, of Croydon, mentions a recent instance of an outbreak of pleuro-pneumonia in his district, in which it appeared in a farmyard among forty cows, which were all in one shed. The local inspector isolated the first cow, leaving thirty-nine in the shed in which the first case appeared. Of these, twenty-two were seized in about six weeks, one after the other, with the disease, and were taken out of the shed, slaughtered, and buried on the premises; but the rest of the herd were killed by the owner, and *used as food*, although they had been kept the whole time in the infected shed. Yet the Inspector of the Local Government Board had agreed that all proper steps had been taken in this instance to prevent the spread of the infection. Of course, if these cattle had been examined at the market after being slaughtered, as would have been the case if intended for Jewish food, they would all have been condemned as unfit. Dr. Cameron, the Medical Officer of Health for Dublin, has given it as his opinion, confirmed by large experience and abundant evidence, that bad results ensue from the consumption of this class of meat; yet it continues to be sold at a cheap rate as food to the poor.

Foot-and-mouth disease, the fourth on our list, has been defined as "a contagious eruptive fever, affecting all warm-blooded animals, and attacking man;" and its whole history, during the long period in which it has been prevalent on the Continent, and during the last forty years when this country has suffered so much from it, shows that it is indeed a malady of both man and beast. "The communication of the disease to man," says Gamgee, one of the highest authorities, "admits of no doubt;" and Mr. Vacher, the Medical Officer of Health for Birkenhead, in a paper read at the Cambridge meeting, asserts very decidedly that if imperfectly cooked meat from an animal affected with this malady be eaten, it undoubtedly places the consumer within reach of infection.

The class of diseases of cattle known technically under the name of "Anthrax," of which there are several varieties, is certainly communicable to man by ingested flesh. The investigation of this question has been conducted chiefly by French and German physiologists, and they are unanimous as to the facility with which the malady can be conveyed as food, and as to its fatal character; indeed, Mr. Vacher asserts that the tenacity with which the flesh of the affected animal retains the infection is so great that it is impossible to assign a limit to it, or to the peril of the consumer.

In respect to erysipelas in cattle, the communication of the disease to man from infected food, though exceedingly probable, is scarcely capable of direct proof; because, firstly, the malady is quite as common in man as it is in animals, and, secondly, it occupies such a peculiar position between specific and simple diseases that when an outbreak occurs, it is impossible to say whether it is due to contagion or not. It is, however, so frequently met with, especially in sheep and pigs, that the possibility of its conveying its special infection should never be overlooked, and it should be condemned as utterly unfit for human food, especially as flesh scarcely showing any physical signs of the disease may, nevertheless, be found actively infective, owing to the insidious manner in which the poison of erysipelas is conveyed.

Lastly, the chief interest of this inquiry centers in the question of the communicability of tuberculosis from animals to man; because not only is this class of maladies the most destructive of all to which human beings are liable (being accountable for at least one-fifth of the entire mortality of the country), but also because, though it was long a matter of doubt whether the disease as it exists in cattle

was identical with that of man, this question has now been solved in the affirmative; and the evidence of this communicability of the disease is rapidly gaining strength. It is only comparatively recently that the suspicion of tubercle being conveyed to the consumers of flesh so tainted has been entertained; but its inoculability is no longer a matter of dispute, and it has been repeatedly proved that the malady can be produced by feeding with the flesh or milk of diseased cattle. There is no doubt that thousands of animals in this condition are slaughtered and sold for food; and the only method of prevention recommended by Mr. Fleming is the establishment of public *abattoirs* throughout the country, the inspection of all carcasses about to be issued from them as food, and the condemnation and destruction of all such as are found affected with this malady. It is indeed highly probable that much of the infantile scrofula and tubercle so prevalent among all classes, and especially the poor, is attributable to the consumption of the flesh and milk of tuberculous cattle. The prevalence of the disease among bovine animals is known to be very great, though, owing to the absence of sanitary inspection of cow-sheds and slaughter-houses, it cannot be exactly estimated. But it appears to be largely on the increase, and on the Continent it has been ascertained that from one to five per cent of all cattle are tuberculous. Animals thus affected do not, as a rule, show signs of wasting, and it is thus only by examination after death that its existence can be detected. I may add that the results arrived at on this subject by English physiologists have been abundantly confirmed by Continental physicians, among whom may be named Gerlach, Chauveaux, Colin, and many others, all of whom have shown that tubercle can be transmitted by the ingestion of the flesh and milk of diseased cattle.

The conclusions to be arrived at from a consideration of the entire subject are, that of the specific diseases of animals used as food, the parasitic, anthracoid, erysipelatous, tuberculous, and foot-and-mouth varieties may be deemed directly transmissible to man; that the question of the communicability of cattle-plague and swine-typhoid is as yet undetermined; and that the evidence as to pleuro-pneumonia, though much stronger, does not so far admit of absolute demonstration. Of course there is not a shadow of doubt that all such meat is not fit for human food, being deprived of most of its nutritive qualities; but this is a different question from the transmissibility of the identical and specific disease.

I am myself decidedly of the opinion that the care bestowed upon the examination of meat for the use of the Jewish community is an important factor in the longevity of the race, which is at present attracting so much attention; and in its comparative immunity from scrofula and tubercle, to which Dr. Gibbon, the Medical Officer of Health for Holborn, has so markedly alluded in his last report. Naturally, such cases do not produce an immediate effect; but their transmission through innumerable generations must eventually bring about a decided result, and exercise a considerable influence in building up the mental and physical toughness of the Jewish people, which has been so long an object of wonder; and which, in conjunction with their steadfastness, cohesion, and valor, Goethe considers to be their chief claim before the judgment-seat of nations. — *Jewish Chronicle.*

WAKEFULNESS.

THE first effect of an excessive use of the brain is generally wakefulness. It is easy to understand why this should be the case when we bear in mind that exact observations have shown that sleep is caused by the blood in a measure flowing out of the vessels of the brain into those of other parts of the body.

Of course anything that prevents the diminution of the quantity of blood in the brain, prevents sleep. Every time an individual thinks, if it be only for the hundredth part of a second, every time his emotions are excited, the vessels of the brain enlarge, and the quantity of blood they contain is increased.

Normally, as soon as the thought has passed, and the emotion has faded away, the vessels contract, and when sleep is coming on, they diminish still more in calibre. But if a person thinks too much, and especially if he is anxious about some important matter, there is no opportunity for the vessels to become reduced in size. They must remain full of blood in order that the brain may do the work required. The tension is thus kept up too long, and eventually, like all over-distended bodies, they lose their elasticity, and then a re

turn to their normal dimensions is no longer possible.

Most of my readers have doubtless seen the India-rubber bands which are used for the purpose of keeping packages together. If the package is somewhat large, and the band is kept around it for a long time, the band, when removed, does not return to its original size. It is exactly the same with the blood-vessels of the brain. A condition of congestion is thus produced which is fraught with danger to those who do not heed the first warnings.

Chief and earliest of these premonitions is wakefulness. The vessels of the brain refuse to contract; they remain gorged with blood, the mind is in consequence active, and sleep, such as is required, is not to be obtained. Toward morning, perhaps, an hour or two of disturbed slumber may ensue, but it does little good, and the sufferer gets up to go to work utterly unfit for either mental or physical exertion.

Instead of the calmness natural to a person who has passed the night in sound and refreshing sleep, he is excited and weary, the most trifling event annoys him, he is disagreeable to his family and friends, and he feels that he is not capable of sustained thought or dispassionate judgment. —*W. A. Hammond, M. D., in Youth's Companion.*

SOMETHING ABOUT THE TEETH AND MASTICATION.

THE following interesting extract from a French periodical we copy from *Health*:—

"It would be impossible to deny the vast influence which the condition of the teeth exercises upon the general health and many stomach affections. Dyspepsia, for instance, which is so often supposed to spring from remote causes, is, in reality, most frequently one result of swallowing imperfectly masticated food. Reaumur's experiments have long since proved that food cannot be digested unless it is properly broken up. He caused some sheep to swallow tubes full of grass, saturated with saliva, but not chewed. Two days afterward, examination showed that this food had not undergone any digestive change. Spallanzani still more conclusively proved this by causing a sheep to swallow two tubes, the one full of masticated, and the other of whole grass. The chewed grass was digested; the other remained unchanged.

"The state of the teeth not only affects one's bodily health, but also influences character. In one of his tales, Voltaire makes Doctor Sidrac say that people with sluggish livers are capable of the greatest crimes. This is, perhaps, going a little too far, but it must be conceded that such a habit of body strongly predisposes to hypochondria. In like manner a bad condition of the teeth, by the prolonged sufferings it occasions, which are aggravated by the most trivial causes, ends by rendering the disposition morose, irritable, and thenceforward inclined to see only the dark side of everything.

"But if it be true that character can be influenced by the state of the teeth, is it also true—and this is the point I wish to bring forward—that the teeth rapidly decay under the influence of overwork? Two English doctors, Messrs. Leitherwood and Harlan, believe they have noticed that the teeth of those who devote themselves entirely to study undergo rapid changes, and that a period of rest retards the evil. They then put the further question: Are these occurrences attributable to an overexcited brain, whose excessive stimulation makes it assimilate to itself those phosphatic elements which would otherwise go to nourish the teeth? Or is this decay of the teeth due rather to a low state of health produced by overwork? It is well known that certain diseases of the nervous system, such as locomotor ataxia and infantile convulsions, have a very pronounced effect upon the teeth.

"Comparing together numerous facts which have been culled from different isolated observations, Messrs. Leitherwood and Harlan find themselves compelled to admit that if the brain be overstimulated by work, the excess of phosphorus which it then consumes can only be gained at the expense of those organs which require this substance for their development, as the bones and the teeth. This question is not new. It has already been studied in France by Dr. Lucas-Championniére. That learned practitioner has at different times verified similar facts. He advises that the studies of children shall be carefully watched, and so regulated as to be increased or lessened in accordance with the condition of their teeth. He also counsels those young persons who go in for competitive examinations or a university career to exercise the greatest watchfulness over their teeth, if they wish to preserve them."

TEMPERANCE AND MISCELLANY.

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

Conducted by MRS. E. E. KELLOGG, Superintendent of Hygiene of the National W. C. T. U.

LIFE'S CROWN.

LIFE'S fadeless crown is twisted from the leaves
Of little flowers of love that strew the lands
Around us, ready for all ready hands
To pluck and plait. And he who idly grieves
That life is crownless is a fool and blind.
He who would bless his fellows must not ask
Sublime occasions for that gentle task,
Or trumpets boasting to the deafened wind.
To fill with patience our allotted sphere,
To rule the self within us strong in faith,
To answer smile with smile and tear with tear,
To perfect character and conquer death,—
This is to win what angels call renown, [crown.
And bend round life's pale brow an amaranthine
—*Wade Robinson.*

SKETCHES OF TRAVEL, NO. 12.

BY MRS. E. E. KELLOGG.

THE CATACOMBS.

THE Catacombs, the ancient burial places of the early Christians, date back to the closing of the first or the early part of the second century. During the times of persecution, they frequently served as a place of refuge for the oppressed followers of Christ. Interments in the catacombs have not been common since the fourth century, but they have been the shrine to which pilgrimages were made for much of the succeeding time. Within the last few years, scientific investigation has rendered them much more interesting, and has greatly increased the knowledge concerning them. To "do" Rome without a visit to these underground cemeteries, would be quite unsatisfactory; and so, if the reader will accompany us, we will make a tour of the catacomb of St. Callistus, one of the best preserved of the more than forty different ones that honeycomb the Campagna around the city.

A ride of something more than a mile beyond the ancient Aurelian wall—for the Roman law prohibited the interment of the dead within the precincts of the city—along the Appian way, that ancient road of triumph, over which many a gilded chariot has rolled in the centuries gone by, past ruins of temples and triumphal arches, out into the broad Campagna, an immense undulating prairie of verdant fields, flecked with small, crimson-tipped daisies, looking like snowflakes amid the grass that never grows sere, brings us to a vineyard underneath which are the subterranean tombs. Near the entrance to the catacombs a party of workmen are still engaged in the work of excavation. A small brick building covers the passage into this cave of sepulchers, and contains many of the inscriptions and reliefs found in the catacombs, as also copies of most of the important paintings with which their walls were adorned.

Having obtained a guide, and been provided with a supply of lighted tapers, we pass through the door, and descend a flight of stone steps to the first section of the catacombs, some thirty-five or forty feet below the surface. The passages are scarcely three feet in width, and vary from six to ten in hight. On either side, like shelves, from floor to ceiling, are the niches for the reception of the dead, one above another, often seven or more high. When the niches were occupied, the aperture was entirely closed with a slab of marble or terra cotta, either plain, or inscribed with the name of the deceased, with the addition of "*in pace*," and occasionally a more elaborate inscription, making, as one writer figuratively and aptly says, an underground "library, on the shelves of which Death has arranged his works."

The niches are now most of them empty, or filled with fine dust and an occasional fragment of the bones of some ancient member of the human family; and the inscription tablets have been removed to the museums for preservation and more satisfactory inspection.

Not a ray of natural light penetrates this ancient city of the dead; the darkness is intense, and the air is by no means the freshest and sweetest. The passages are tortuous and intricate, but their monotony is occasionally broken by a chamber of much larger dimensions. These were the tombs of wealthy and noble families, and were originally adorned with great splendor. The walls and ceilings were beautifully sculptured and painted. Sarcophagi of bronze or rare marble held the bodies of the dead. In one of these chambers two sarcophagi still remain unmolested, and through the glass over their tops may be seen the remains, one of them preserved in a mummy-like form, the other nearly resolved to its original elements. Around these sarcophagi were originally placed rich vases and other valuable treasures of the deceased. In some of the catacombs, many such vases have been found, on which were engraved portraits of St. Paul and St. Peter. Other Scriptural subjects, as Moses smiting the rock, Noah and the ark, and the raising of Lazarus, were quite frequently traced upon them.

These chambers are said to have been used as places for worship by the Christians during the times of persecution; and in later years they have been used as sacrament chapels, where services have been held in honor of the

martyrs. During the massacres instigated by Nero and other Roman despots, thousands of Christians found refuge in these cities of the dead, spending months and even years therein without once seeing the light of day. The inscriptions and paintings which adorn their walls are mostly indicative of hope and the resurrection. One, supposed to have been intended to commemorate the Last Supper, has been partially restored. It represents Christ with the disciples at a table, whereon are plates of fishes and eight baskets full of bread. A head of Christ and one of St. Cecilia are found in one of the chambers in which that martyr was entombed. On the anniversary of her martyrdom, that portion of the catacombs is illuminated, and services are held. The anchor, the dove, the olive-branch, and the fish are among the common symbols found on the walls and tablets.

There are miles of these passages and galleries, all with the same ghastly linings, but all so nearly alike that having seen one, we can imagine the rest. It is computed that in all the different catacombs, there are about nine hundred miles of these tomb corridors, and that six million bodies have been entombed therein. Of this number, it is estimated that one hundred and seventy thousand were interred in the catacombs of St. Callistus.

At present, there is generally no communication between the different catacombs. Each one is beneath a separate rise of ground in the Campagna, and is separated from the others by the intervening depression.

A NEW DEPARTURE IN TEMPERANCE WORK.

THE Normal is getting to be one of the educators of the day. We have educational Normals, musical Normals, art Normals, Sabbath-school Normals, and very recently there was held in this city a Hygienic Normal, the first of the kind in the world. Within the last few years, a Department of Hygiene has been introduced into the work of the Woman's Christian Temperance Union, and it was under the auspices of this Department that the Normal was conducted. A large number of intelligent and talented ladies were in attendance as delegates from the Unions in the different cities and towns of the State, and the interest manifested during the entire Normal indicated how fully they realized the great importance of true hygiene as a preventive of intemperance.

The programme consisted of lectures and addresses covering the list of subjects included in a Syllabus of Lessons on Hygiene which the National Superintendent has prepared for use in the study and work of this Department.

Following the opening address, which was given by the National Superintendent, was the first lecture, by Prof. Veysey, late of Southampton, England, on The Human Mechanism, showing the difference between organized and unorganized matter, the manner of cell growth, together with a description of the various anatomical elements, and portraying in a vivid manner the marvelousness of the human body. The next lecture was given in the evening on the subject of Ventilation, by J. H. Kellogg, M. D. The function of respiration, and the composition and hygiene of the air, were fully explained in this connection, and the lecture illustrated by experiments, blackboard outlines, manikin, and stereoptican views.

Lectures on Muscle Hygiene, Exercise, Clothing, Circulation, Digestion, and the Comparative Values of Foods, occupied the second day, with an illustrated lecture on Foods in the evening. All the lectures were amply illustrated with charts, manikin, and blackboard, and the subjects treated in a thoroughly scientific and practical manner.

The third day's programme consisted of lectures on Household Hygiene and Healthful Cookery in the forenoon, after which the delegates were invited to repair to the Sanitarium for a hygienic dinner. In the afternoon the subject of Heredity was largely taken up, and Miss Kate Lindsay, M. D., gave an interesting lecture on the Reproductive System, followed by one by Dr. J. H. Kellogg on the Nervous System. The evening lecture on the subject of Hygiene and Heredity was given by Prof. Wilson, of Ann Arbor.

The fourth day's exercises included lectures on the Beginning of Life, by Miss Ballard, M. D., of Lansing, and one on Antenatal Influences, by Miss Kate Lindsay, M. D., together with resolutions and the closing exercises of the Normal.

The delegates present voted to return to their homes and make earnest endeavors to organize Health clubs in their own towns for the special study of Hygiene and Heredity, for the purpose of promulgating their truths and disseminating them as widely as possible. This good resolution has been carried out already in several towns of the State, and we trust that not a very long time will elapse before Scientific Health clubs will exist in every city, town, and village of Michigan —indeed, we might add, in the United States; for we trust this first Normal is but the precursor of many more to be held for the advancement of the cause of hygiene.

—It is the fashion of restless and ambitious women to despise home life as too tame, too narrow, too uneventful for them. And yet, in reality, the art of living well at home, and making the family life a success, is just as great in its way, if not so important in its apparent—but only apparent—results, as the finest shades of diplomacy and the largest transactions of business.

—There are many fruits which never turn sweet until the frosts have lain upon them. There are many nuts that never fall from the boughs of the forest trees till the frosts have opened and ripened them. There are many elements of life that never grow sweet and beautiful until sorrow comes.

TIRED MOTHERS.

THE face that appealed to me so strongly was that of a woman not yet past middle age. It possessed both intellectuality and sweetness of disposition; but the lines that deep suffering had wrought revealed all too plainly that although possessing strength of mind far exceeding the ordinary endowment, yet there had somewhere been a mistake, and the would-be victor had been vanquished. It was the old, old story, the tragedy that is being enacted in a large majority of American homes, from the cottage of the humblest laborer to the palatial residence that excites alike the envy and the admiration of many a beholder.

Next to the brand of intemperance, in the common acceptation of the word, it is to be doubted if there is a more striking national characteristic than that of tired, worn-out mothers, not yet past the prime of life, as reckoned by years, but utterly incapacitated by physical and mental overtaxation to fill the place God designed they should in the home and social circle where his providence has placed them.

Over and over again have I listened to the pathetic, "What can I do?" coming from mothers who for years had smothered their agony-cry with womanly pride and self-respect, until the flood-gates of pent-up pain burst, and the overcharged heart poured out its grief to the confidential, sympathizing friend. "It was like the Euphrates emptying into a teacup;" for the poor sufferer in such dire extremity is illy prepared to be advised of her own mistaken course, and you feel the limitation of receiving capacity, if the circumstances forbid the offering of helpful suggestions that you know are applicable to the case in question.

There are undoubtedly many ways of solving this problem, which, without circumlocution, may be translated thus: During the first years of the home-life, the mother, in the richness of her love, with health and strength at the maximum, generously (?) spares her children every burden and responsibility. The object of such indulgence is as often found in the cottage as the palace; and the child thus reared, reaching the period when it should be capable of bestowing instead of receiving aid, regards all *bona fide* application as exceedingly distasteful. Some are born with capacity that others never acquire; but the mantle of self-reliance and executive ability rarely falls from the skies to envelop those who have arrived at manhood and womanhood untaught, to perform the ordinary duties of every-day life. Then comes the fact, patent to every observer, to which the mother's dim consciousness is the last to awaken, that her physical powers fail to respond to the long-continued draft, and in consequence, the mind loses its wonted vigor just at the time when John, and Charles, and Hattie, and Katie need a clear brain, and a firm, even hand at the helm, whose cultivated judgment and rich experience shall not only be able to foresee the shoals and quicksands, and warn them of impending dangers; but whose lofty purpose and inflexible will shall hold them from the strong outward current until good *impulses* shall have become solidified into *principles*. For want of this, many a youth of both sexes has been wrecked amid the breakers, when just the right help, just at the right time, would have taken them safely through the narrow channel of the all-important transition period, and brought them safely into port.

The old style, straight-laced, puritanical style, of living and doing is much decried by the present generation; but it is to be doubted whether, when the plucking of a white rose of a Sunday morn was considered Sabbath desecration, and the "Blue Laws" rendered it a crime for a wife who had been separated from her husband to welcome his return with a kiss upon that same sacred day, there was not as perfect heart understanding in the home as at the present time. The pendulum, instead of pausing midway, has swung to the opposite extreme, and unwise indulgence is no indication that parents and children have come to better appreciate the finer feelings and necessities of each other's nature. Is there not a middle ground between the arctic regions and the torrid zone, where one may both "deal justly and love mercy"? Must it be the iron bedstead with its scanty appointments, or smothering, downy, French feather-beds above and below the would-be but cannot-be sleeper? The quaint furniture, dark, unused parlor, and bare walls of the olden time seem fitting attributes of the solemn faces that look down at us from the old portraits, and chill us through and through. It cannot

be denied, however, that the garden pinks and red and white roses yielded a perfume, and bound the home circle together in a way that all the sunflowers Oscar Wilde ever sowed in the banged brains of foolish Americans, never have done, never can do. And could we go back to the old-time simplicity in many things, it would be of decided advantage as regards the peace and prosperity of home and social life. But you say you have tried to inculcate habits of industry, neatness, and order in your children; but the *telling* of your wishes did not suffice, and "it is too much work to see that they perform the tasks allotted them." What kind of an army officer would a general make, who would lay his plans before the soldiers in his charge, and then, when they doubted their feasibility, or neglected to execute them, repair to his tent, and weep over their heartless conduct?

The strength of any nation lies in its homes. Therefore, O mothers, guard well your sacred altars. Let the little child learn to bear its own weight, and teach it to minister to the comfort of those with whom it is associated. Share your daily toil and care with those whom God has placed as your assistants. Bind your children to your heart by the strong cords of love, sympathy, and duty; and teach them the sacred import of mutual obligation. So shall the "sweet, swift years" bear testimony to your faithfulness, and each be able to—

> "Bless the hand that guided
> And bless the heart that planned,
> When you with them are gathered
> In Immanuel's land."

NOTHING TO WEAR.

WILLIAM ALLAN BUTLER.

Miss Flora M'Flimsey, of Madison Square,
Has made three separate journeys to Paris;
And her father assures me, each time she was there,
That she and her friend, Mrs. Harris,
(Not the lady whose name is so famous in history,
But plain Mrs. H., without romance or mystery),
Spent six consecutive weeks without stopping
In one continuous round of shopping;
Shopping alone, and shopping together,
At all hours of the day, and in all sorts of weather;
For all manner of things that a woman can put
On the crown of her head or the sole of her foot,
Or wrap round her shoulders, or fit round her waist,
Or that can be sewed on, or pinned on, or laced,
Or tied on with a string, or stitched on with a bow,
In front or behind, above or below;
For bonnets, mantillas, capes, collars, and shawls;
Dresses for breakfasts, and dinners, and balls;
Dresses to sit in, and stand in, and walk in;
Dresses to dance in, and flirt in, and talk in;
Dresses in which to do nothing at all;
Dresses for winter, spring, summer, or fall;
All of them different in color and pattern—
Silk, muslin, and lace, crape, velvet, and satin,
Brocade and broadcloth, and other material
Quite as expensive, and much more ethereal;
In short, for all things that could ever be thought of,
Or milliner, *modiste*, or tradesman be bought of,
From ten-thousand-franc robes to twenty-sous frills;
In all quarters of Paris, and at every store,
While M'Flimsey in vain stormed, scolded and swore;
They footed the streets, and he footed the bills.
The last trip, their goods shipped by the steamer *Arago*
Formed, M'Flimsey declares, the bulk of her cargo;
Not to mention a quantity kept from the rest,
Sufficient to fill the largest-sized chest,
Which did not appear on the ship's manifest,
But for which the ladies themselves manifested
Such particular interest, that they invested
Their own proper persons in layers and rows
Of muslins, embroideries, worked underclothes,
Gloves, handkerchiefs, scarfs, and such trifles as those,
Then, wrapped in great shawls, like Circassian beauties,
Gave GOOD-BYE to the ship, and GO-BY to the duties.
Her relations at home all marvel'd, no doubt,
Miss Flora had grown so enormously stout
For an actual belle and a possible bride;
But the miracle ceased when she turned inside out,
And the truth came to light, and the dry goods beside,
Which, in spite of collector, and custom-house sentry,
Had entered the port without any entry.
And yet, though scarce three months have pass'd since the day
This merchandise went, on twelve carts, up Broadway,
This same Miss M'Flimsey, of Madison Square,
The last time we met, was in utter despair,
Because she had nothing whatever to wear!

NOTHING TO WEAR! Now, as this is a true ditty,
I do not assert—this, you know, is between us—
That she's in a state of absolute nudity,
Like Powers' Greek Slave, or the Medici Venus;
But I do mean to say, I have heard her declare,
When, at the same moment, she had on a dress
Which cost five hundred dollars, and not a cent less,
And jewelry worth ten times more, I should guess,
That she had not a thing in the wide world to wear!
I should mention just here, that out of Miss Flora's
Two hundred and fifty or sixty adorers,
I had just been selected as he who should throw all
The rest in the shade, by the gracious bestowal
On myself, after twenty or thirty rejections,
Of those fossil remains, which she called her "affections,"
And that rather decayed, but well-known work of art,
Which Miss Flora persisted in styling "her heart."

* * * * * * * * * *

Since then, taking pains that it should not be bruited
Abroad in society, I've instituted
A course of inquiry, extensive and thorough,
On this vital subject; and find, to my horror,
That the fair Flora's case is by no means surprising,
But that there exists the greatest distress
In our female community, solely arising
From this unsupplied destitution of dress,

Whose unfortunate victims are filling the air
With the pitiful wail of "Nothing to wear!"
Researches in some of the "Upper Ten" districts
Reveal the most painful and startling statistics,
Of which let me mention only a few:
In one single house, on Fifth Avenue,
Three young ladies were found, all below twenty-two,
Who have been three whole weeks without anything new
In the way of flounced silks, and thus left in the lurch,
Are unable to go to ball, concert, or church.
In another large mansion, near the same place,
Was found a deplorable, heart-rending case
Of entire destitution of Brussels point-lace.
In a neighboring block there was found, in three calls,
Total want, long-continued, of camel's-hair shawls;
And a suffering family, whose case exhibits
The most pres ing need of real ermine tippets;
One deserving young lady almost unable
To survive for the want of a new Russian sable;
Another confined to the house, when it's windier
Than usual, because her shawl is n't India,

* * * * * * * * * *

Which renders her life so drear and dyspeptic,
That she's quite a recluse and almost a skeptic;
For she touchingly says that this sort of grief
Cannot find in religion the slightest relief,
And philosophy has not a maxim to spare
For the victims of such overwhelming despair.
But the saddest by far of all these sad features
Is the cruelty practiced upon the poor creatures
By husbands and fathers, real Bluebeards and Timons,
Who resist the most touching appeals made for diamonds
By their wives and their daughters, and leave them for days
Unsupplied with new jewelry, fans, or bouquets;
Even laugh at their miseries whenever they have a chance,
And deride their demands as useless extravagance.

* * * * * * * * * *

Won't somebody, moved by this touching description,
Come forward to-morrow and head a subscription?
Won't some kind philanthropist, seeing that aid is
So needed at once by these indigent ladies,
Take charge of the matter? or won't Peter Cooper
The corner-stone lay of some splendid super-
Structure, like that which to-day links his name
In the Union unending of honor and fame,
And found a new charity just for the care
Of these unhappy women with nothing to wear;
Which, in view of the cash which would daily be claim'd,
The Laying-out Hospital might well be named?
Won't Stewart, or some of our dry-goods importers,
Take a contract for clothing our wives and our daughters?
Or, to furnish the cash to supply those distresses,
And life's pathway strew with shawls, collars, and dresses,
Ere the want of them makes it much rougher and thornier,
Won't some one discover a new California?

—In life it is difficult to say who do you the most mischief, enemies with the worst intentions, or friends with the best. —*Bulwer-Lytton.*

CURIOUS PATENTS.

Some investigating person has furnished the New York *Times* with a brief list of patents on small things, which in many instances have proved great mines of wealth to the lucky discoverer. The list might be extended to a much larger number, but we only state those given in the *Times*. Among these trifles is the favorite toy, the "return ball," a wooden ball with an elastic string attached, selling for ten cents each, yielding to its patentee an income equal to $50,000 a year. The rubber tips on the end of lead pencils afford the owner of the royalty an independent fortune. The inventor of the gummed newspaper wrapper is also a rich man. The gimlet pointed screw has involved more wealth than most silver mines; and the man who first thought of putting copper tips to children's shoes is as well off as if his father had left him $2,000,000 in United States bonds. Although roller skates are not so much used in countries where ice is abundant, in South America, especially in Brazil, they are very highly esteemed, and have yielded over $1,000,000 to their inventor. But he had to spend fully $125,000 in England alone, fighting infringements. The "dancing Jim Crow," a toy, provides an annual income of $75,000 to its inventor, and the common needle threader is worth $10,000 a year to the man who thought of it. The "drive well" was an idea of Colonel Green's, whose troops, during the war, were in want of water. He conceived the notion of driving a two-inch tube into the ground until water was reached, and then attaching a pump. This simple contrivance was patented after the war, and the tens of thousands of farmers who have adopted it have been obliged to pay him a royalty, a moderate estimate of which is placed at $3,000,000. The spring window shade yields an income of $100,000 a year; the stylographic pen also brings in $100,000 yearly; the marking pen for shading in different colors, $100,000; rubber stamps the same. A very large fortune has been reaped by a Western miner, who, ten years since, invented a metal rivet or eyelet at each end of the mouth of coat and pants' pockets to resist the strain caused by the carrying of pieces of ore and heavy tools.

—We would willingly have others perfect, and yet we amend not our own faults.

A FEW VULGARISMS.

ASKING questions, private and personal, is one vular habit, and telling your own business, which no one wants to hear, is another. Asking the cost of a present that has been made to you; "pumping" a servant to hear what has been given by way of parting vail; loud talking in public; hard staring at table; insolent disrespect to husband, wife, sister, or brother; showing temper in trifles, and making scenes in public, showing an embarrassing amount of fondness; making love in public; covert sneers, of which people can see the animus if they do not always understand the drift; persistent egotism, which talks itself, itself, itself, only itself, and cannot even feign the most passing interest in another; detraction of friends, and it may be of relations—a husband telling of his wife's unpleasantness, a wife complaining of her husband's faults; the bold assumption of superiority, and the servile confession of infinite unworthiness,—all these are signs and evidences of vulgarity, vulgarity of a far worse type than that which eats its fish with a steel knife, and says "you was" and "each of the men were." In fact, true vulgarity resolves into the central point of evil—selfishness. The unselfish can never be really vulgar. They may be uncouth, but they cannot be more; while the best top-dressing of manner to be found in the whole world cannot make the substance refined, where that one foul canker of egotism and indifference to others lies at the heart of things.—*Ex.*

The House that Rum Built.—The poorhouse: This is the house that rum built.

The drunkard: This is the beast that lives in the house that rum built.

Appetite: This is the chain that binds the beast that lives in the house that rum built.

Intoxicating drink: This is the serpent in flowery guise, with artful tongue and dazzling eyes, that welds the chain that binds the beast that lives in the house that rum built.

The rumseller: This is the monster who holds the rein over the serpent who welds the chain that binds the beast in cruel pain that lives in the house that rum built.—*Ex.*

—Kindness is the golden chain by which society is bound together.

—Death from a lightning stroke is said to be absolutely painless. But we don't see how they know. We don't believe any person who ever died that way had a chance to tell how it felt.—*Boston Post.*

Popular Science.

—A Canadian firm is utilizing sawdust for making gas.

—A good tracing paper can be made by applying to tissue paper equal parts of turpentine and mastic varnish.

—An American has recently completed an invention by which seventy-two telegraphic messages can be sent over the same wire simultaneously.

—A scientist estimates that more than one thousand gallons of alcohol are produced daily in the process of bread-making in New York City. This estimate includes only the bread made by bakers. It is proposed to make an effort to save the alcohol, by connecting a still with every baker's oven. This was once tried in London, but without success, as the bread was of inferior quality, not, however, because of the loss of alcohol, but because it was poorly made.

Water-Proofing Mixture.—To make fabrics impervious to water, immerse them in the following solution:—

Gelatine,	5 parts.
Soap,	5 "
Alum,	7 "
Water,	170 "

On drying, the fabrics will be found impervious to water.

Work.—The cannon, considered as a machine, is incomparably superior to the steam-engine as regards the time necessary to produce a given quantity of mechanical work.

Thus, for example, the 100-ton cannon develops in *one-hundredth of a second* a quantity of work equal to that which would be yielded by a 47-horse power steam-engine *in one hour.* A man of average strength is still lighter than an ordinary steam-engine of equal power, but he is much inferior to the other animals of creation, and particularly to insects.

Thus, for example, *libellula*, which is capable, without apparent fatigue, of following a train of cars for several hours, giving its wings during this whole time some thousands of backward and forward motions per second, is a hundred times lighter than a steam-engine capable of producing an equivalent work.

This is what renders the problem of aërial locomotion so difficult, and, as Mr. Hirn says, it explains why we can fly in imagination only.—*La Nature.*

GOOD HEALTH.

BATTLE CREEK, MICH., APRIL, 1884.

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

A HYGIENIST ABROAD.

A VISIT TO THE BATHS OF LEUK.

NESTLED down among the Gemmi peaks at the head of the valley of the Dala, is a quaint little village, known as Leukerbad, or Loëche-les-Bains, according as you are talking with a German or a Frenchman. A large number of the towns and cities near the border-line between the German and the French speaking nations, are blessed with double names, the significance of which is the same, although the spelling and pronunciation are very different.

Leukerbad (we use the German name, as it is the shortest and most euphonius) is to be reached only by diligence or carriage, the nearest railway station being at Susten, in the valley of the Rhone, distant about five hours' ride. The road from Susten to Leukerbad leads through some of the most interesting scenery in the Alps. It follows the wild gorge of the Dala, which it crosses on the route, over a wonderful stone bridge four hundred and twenty feet above the water. The road is one of the best in Europe, cut out of the solid rock, and made as smooth as a marble pavement. Occasionally, for long distances, it runs close to the edge of some frightful precipice, which grows more appalling as we ascend, and brings to mind all the tales ever heard of the terrible accidents that sometimes happen on these mountain roads through the carelessness of drivers or the viciousness of horses. In some of these places, a low wall of cut stone affords a partial protection; but in many places, this is absent, and yet our driver seemed to take delight in seeing how near to the edge he could keep the carriage without going over the brink.

We took an early morning start from Susten by private carriage, so as to be able to get back in time to catch the afternoon train for Lausanne, where we wished to spend the night in the excellent hotel, *Beau Rivage*. From the windows of this hotel, one may overlook nearly the whole of the beautiful Lake Geneva, and catch distant views between the moving clouds of the snow-capped Alpine peaks. A half hour's ride up the steep mountain, through thrifty vineyards clinging to the rocky wall, which stretched down to the edge of the beautiful Rhone, and far up among the shifting snowbanks of cloud, which now and then lifted long enough to enable us to catch glimpses of the glittering mantle of snow which perpetually clothes the nakedness of the time-worn and storm-battered peaks,—brought us to the curious little town of Leuk. Perched up here on the mountain side, this little hamlet of old brown houses reminded one of a group of birds' nests, clinging to some old moss-grown wall. The few inhabitants, whose thrifty habits had already brought them out of their dingy homes on various domestic errands, looked as ancient and old-fashioned as the ruined towers, dilapidated inn, and antiquated dwellings. We have in our mind's eye a picture of this secluded little village which will remain vivid for many years. We can almost see again the milk-maids with their rustic and healthful garb and unaffected manners, coming out with their pails in the fresh morning air, which they hardly needed to deepen the roses on cheeks blooming with the exuberant health which is so seldom seen except in those who are reared in Nature's own lap, at a safe distance from the deteriorating and demoralizing influences of civilization.

But we must not become too enthusiastic about the healthfulness of these Alpine wilds; for there is an old man tottering along by the roadside, with a huge goitre pendant at his neck, a sight not uncommon in many localities among the Alps, especially in villages situated in deep valleys, or gorges, or on the shaded side of mountains, places to which the sun has little access.

But we must hasten on our journey. Leaving Leuk, the road constantly ascends, until from the summit of the pass, the eye commands one of the finest views in all Europe. Several thousand feet below runs the classic Rhone, its green, fertile banks spread out into a narrow valley, which can be traced from our dizzy hight, winding between its perpendicular mountain walls for thirty or forty miles. All along the silver line which represents the Rhone, are little villages, each of which has a history running back so far into the misty past that in most instances any inquiry concerning the founder or first inhabitants can be answered only by the most vague conjectures. Old Sol is just beginning to show himself above the

low peaks in the east, and his slanting beams light up the lovely landscape stretched out before us with such a striking effect as to make us long for some art to catch the wonderful picture and immortalize it.

Reluctantly we turn away from the fascinating scene, and hasten on our journey along the winding mountain road. Having left our hotel before breakfast time, we had made provision for taking breakfast on the road. We only lack a bottle of water to dilute our can of condensed Swiss milk, which, with a loaf of good Graham bread and a few boiled eggs, will constitute our meal. Nature seems to have anticipated our wants, for here is a cold crystal spring gushing out of the rocks just by the road-side. The keen, fresh morning air gives us as good a relish for our simple fare as could be excited by the most luxurious spread.

After pursuing our way along the summit of the range for an hour or two, the road begins to descend, and we shortly find ourselves riding along the edge of a deep gorge, at the bottom of which, some thousands of feet below, runs the romantic little torrent known as the Dala. Every turn in the winding mountain road brings into view new and striking pictures, each of which out-vies its predecessors in its fascinating grandeur; but our sinewy Swiss horses dash along so rapidly that one view follows another in as quick succession as the scenes in a rapidly changing panorama.

Just after making a sudden turn about a projecting rock, the driver brings his horses to a halt, and points to some object of interest on the opposite side of the deep valley. Bringing into requisition an excellent field glass, we discover the object to be a series of ladders, one above another, clinging to the bare face of a rocky wall some thousands of feet high. On inquiry, we learn that this is the famous ladder path which in winter constitutes the only means of communicating with the outside world for the inhabitants of the little village of Albinen, situated at the very top of the rocky hight, but hidden from view by its frowning crest.

A few minutes' farther whirling down the steep Alpine road brought into full view the curious old hamlet at the head of the valley of the Dala, famous for its hot springs and its unique bathing customs, unlike those of any other bathing place in Europe, known as the Baths of Leuk, which we will describe at length in the next number.

—A Havana physician advances the theory that yellow fever is communicated by musquitoes, and claims to have seen suspicious spores on the bill of one of these insects that had just bitten a yellow-fever patient.

ADULTERATION STILL ACTIVE.

From a scientific contemporary we cull the following facts, which indicate that the perpetrators of adulterations of every description are as active as ever in their malicious operations:—

"*Olive-Oil and Cotton-Seed Oil.*—Our consul at Naples, the Hon. B. O. Duncan, reports to the State Department that immense quantities of refined cotton-seed oils are imported into Italy for the special purpose of sophisticating the native oil, for the reason that it can be laid down in Naples at less than half the cost of producing pure olive-oil. Hence the temptation is great to use it for mixing with pure oil for export from Italy to other countries. Its use is not easily detected except by chemical means."

"G. A. Buckheister (*Droguisten Zeitung*) finds that while the ordinary tests,—sulphuric and nitric acids, potash, lye, ammonia, etc., produced no definite reactions, he could, by a mixture of equal parts of sulphuric and nitric acids, render visible as small an addition of cotton-seed oil as ten per cent. Three parts of this test to ten parts of the suspected oil is shaken together. Pure oil gives a white color with a greenish cast; that mixed with sesame, a grass-green; and that mixed with cotton oil, a paler color. After a few minutes the liquids separate, and pure olive-oil appears almost unchanged; cotton-seed oil, a light brown."

"*Orange and Lemon Oils.*—It is reported that the cheapness of essential oils, orange, lemon, and bergamot, made in Messina, Italy, is not so much due to the use of improved methods and apparatus as it is to the way they have of rectifying the French spirits of turpentine, and obtaining a fragrant non-oxidized product from it that admits of free admixture with the essential oils without ready detection."

"*Glucose.*—Eleven millions of bushels of corn will be used this year in the twenty glucose factories of the United States in producing this product, most of which is

employed for adulterating cane sugar and cane syrup. This amount of grain is equivalent to over one thousand car-loads per day; and when it is considered that the principal temptation to its production is, so far, its fraudulent use as an adulterant for true cane sugar, not easily detected, enabling the producers to reap fabulous profits therefrom, the writer thinks that it is high time that State or National legislation should compel manufacturers and mixers of this left-handed, often impure, insipid sugar, to brand it, whether pure, or mixed with cane sugar, by its right name and percentage, that buyers may get what they pay for. At the last meeting of the American Pharmaceutical Association, Mr. Allaire, of this committee, very properly reported against the use of glucose in making medicinal sirups as a substitute for cane sugar."

THE MEDICINE MANIA.

One of the most common errors of the day is the supposition held by the majority of people that a man may conduct himself as he pleases as regards the laws of health, may violate every principle of healthful living, and thus bring upon himself disease, and may then take a few doses of some drug, and antidote the effects of his carelessness or folly. We are glad to see an occasional recognition of this fact on the part of men of eminence in the profession, and take pleasure in quoting the following by an eminent English physician in the *British Quarterly Review* :—

"It is to be feared that, to most people, medicine is not an erudite science, or a learned art, but is little more than a commonplace administration of physic. They cannot understand medicine without drugs, and its virtue and power are popularly measured by the violence of its operations. Its very name is, in ordinary parlance, synonymous with physic. Take from it its pills and potions, and for them you take away its whole art and mystery. They do not believe in a scheme of treatment, however deep-laid and skillful, which does not include a certain statutory dosage; so that, as a rule, medical men are practically compelled to give their patients a visible object of faith in some form of physic, which may be at most designed to effect some very subordinate purpose. And it is remarkable how strongly, even among the educated classes, this feeling prevails. Cure by the administration of mixtures and boluses is so fixed and ancient a tradition that it is only very slowly that the world will give it up. The anxiety of the friends of the patient wants to do more than follow the simple directions of 'nursing,' which have been so carefully inculcated, and possess, apparently, so little remedial power. There is nothing of the unknown about them in which a fluttering hope of great advantage can nestle.

"Thus it is necessary to educate the world into a belief in medicine apart from drugs, which finds its power of curing in adaptations of the common conditions of life, and the applications of physiological facts,—a medicine which takes into its hands the whole life, and orders and fashions its every detail with scientific definiteness. It is found in every-day practice that this popular misunderstanding of the modern spirit of medicine constantly checks the little tentative advances of a more scientific treatment, and it is necessary that it should be generally understood how powerfully the various processes of the economy may be affected by the manipulation of the condition of common life."

HYGIENE AND MEDICAL TREATMENT AMONG ANIMALS.

An eminent French scientist recently communicated to the Biological Society some interesting facts about means for the preservation of health, and treatment of disease among the lower animals, of which the following is a brief abstract :—

"A large number of animals wash themselves and bathe, as elephants, stags, birds, and ants. M. Delaunay lays down as a general rule that there is not any species

of animal which voluntarily runs the risk of inhaling emanations arising from their own excrement. Some animals defecate far from their habitations; others bury their excrement; others carry to a distance the excrement of their young. In this respect they show more foresight than man, who retains for years excrement in stationary cesspools, thus originating epidemics.

"If we turn our attention to the question of reproduction, we shall see that all mammals suckle their young, keep them clean, wean them at the proper time, and educate them; but these maternal instincts are frequently rudimentary in women of civilized nations. In fact, man may take a lesson in hygiene from the lower animals.

"Animals get rid of their parasites by using dust, mud, clay, etc. Those suffering from fever restrict their diet, keep quiet, seek darkness and airy places, drink water, and sometimes even plunge into it.

"An animal suffering from chronic rheumatism always keeps as much as possible in the sun. The warrior ants have regularly organized ambulances. Latreille cut the antennæ of an ant, and other ants came and covered the wounded part with a transparent fluid secreted from their mouths. If a chimpanzee be wounded, it stops the bleeding by placing its hand on the wound, or dressing it with leaves and grass. When an animal has a wounded leg or arm, it completes the amputation by means of its teeth. A dog, on being stung in the muzzle by a viper, was observed to plunge its head repeatedly for several days into running water. This animal eventually recovered. A sporting dog was run over by a carriage. During three weeks in winter it remained in a brook, where its food was taken to it; the animal recovered. A terrier dog hurt its right eye; it remained lying under a counter, avoiding light and heat, although habitually it kept close to the fire. It adopted as general treatment, rest and abstinence from food. The local treatment consisted in licking the upper surface of the paw, which it applied to the wounded eye, again licking the paw when it became dry. Cats also, when hurt, treat themselves by this simple method of continuous irrigation. M. Delaunay cites the case of a cat which remained for some time lying on the bank of a river; also that of another cat which had the singular fortitude to remain for forty-eight hours under a jet of cold water. Animals suffering from traumatic fever treat themselves by the continued application of cold, which M. Delaunay considers to be more certain than any of the other methods. In view of these interesting facts, we are, he thinks, forced to admit that hygiene and therapeutics, as practiced by animals, may, in the interests of psychology, be studied with advantage. He could go even further, and say that veterinary medicine, and perhaps human medicine, should gather from them some useful indications, precisely because they are prompted by instinct.

"It is worthy of note that some of the simple measures employed by animals when suffering from certain ailments, are among the most efficacious of all which have been discovered and used by man, notwithstanding their great simplicity."

Abuse of the Mackintosh.—The London *Lancet* makes some very sensible suggestions respecting the use of this very common article of apparel:—

"The season has set in for wearing mackintoshes. A caution may be therefore not unnecessary, and, let us hope, not unheeded, as to the use and abuse of this serviceable, but, when improperly employed, dangerous article of clothing. When once a mackintosh is put on to defend the body from wet, it should on no account be taken off until the wearer has not only taken shelter, but is in a position to change his clothes. What a covering of oil silk does for a wet rag in surgery, namely, convert it into a poultice, the

mackintosh does for the clothes of its wearer. The insensible perspiration, which finds its way of escape through ordinary clothing, is kept in by the water-proof, and the clothes are saturated with moisture. A very few minutes will suffice to render the under-clothing 'damp' under a mackintosh, particularly if the wearer perspires freely, or if the weather be what is called 'muggy,' as well as wet. When, therefore, the wearer of a mackintosh takes off that article of clothing, because it has ceased to rain, he is in the position of a person who has damp clothes on; and if he sits in the saddle, or walks home, or rides in an open trap, he is more likely to take cold than if he had not used the mackintosh at all. Therefore, we say, if a mackintosh is once put on, it should on no account be removed until the clothes can be changed or dried by a fire without reduction of bodily temperature. The use of a mackintosh is to protect a man from a severe storm of rain. His clothes must be damp if he wears one of these protectors. The sole gain from using it is to render the moisture warm instead of cold, and to prevent loss of heat by evaporation. If the mackintosh be removed, evaporation commences immediately, with all the consequent risks of that process."

Tea and Coffee and Indigestion.— Dr. James Fraser, of Scotland, has been making a series of experiments for the purpose of determining the influence of tea, coffee, and cocoa upon stomach digestion. He finds that the effect of all is to retard digestion. Cocoa, instead of being least harmful, is, according to Dr. F.'s observations, most productive of indigestion of all the common beverages, tea coming next in order, and last of all coffee, although the latter is by no means trivial in its influence. Dr. F. also condemns the use of "meat teas."

—Ling's system of Swedish gymnastics is to be introduced into the public schools in London.

Swill Milk.—Dairymen do not always stop to consider the important influence of the character of the food given their cows upon the quality of the milk produced. Fermented food, sour mash, sour swill from the kitchen, and similar food is often employed, regardless of the influence which such unphysiological food may have upon the consumers of the milk. The practice of storing fodder of various kinds in silos is becoming more and more common; and in some districts, this fermenting, decomposing food is largely fed to milch cows, as it is found that the yield of milk is thereby largely increased. Like other sour food, silo products contain considerable quantities of acetic acid and alcohol, and the milk of cows fed upon such food must contain these substances also, and to an injurious extent. It has been observed that children fed upon such food suffer with indigestion, and often refuse to take the milk on account of its disagreeable flavor.

Dress Reform in Georgia.—Northerners are very prone to suppose that everything in the line of progress or reform must emanate from the northern section of our great country, the South being supposed to be so wrapped up in conservatism that little in the line of social or material improvement can be expected; but the following paragraph from the *Augusta* (Ga.) *Chronicle* indicates that the spirit of reform which seems to be agitating various parts of the country is as active in Georgia as in some other States supposed to be much more progressive:—

"Georgia girls are leading the world in reform. A remarkable feature at the commencement of Wesleyan Female College, at Macon, Ga., was the beautiful simplicity of the dresses worn by the young ladies. A number of them were made by the young ladies themselves, and cost from $1.50 to $3."

—Fifty persons have been attacked with trichinosis in a single town in Prussia.

Mutability of Germs.—Prof. Carpenter, one of the most eminent of English physicians, and a distinguished microscopist, at a meeting of the British Medical Association, advanced views respecting the microscopic forms of life which give rise to various diseases which have been suspected by others, but perhaps never before so boldly stated. According to the *Lancet*, "He believes that the same germs may, under altered circumstances, produce various diseases, and these opinions he supported by various arguments. The decrease of the virulence of the small-pox, which ravaged Europe in the fifteenth century, he attributes to the cultivation of the mildest cases which occurred. A severe attack of any particular disease may so affect the system that a disease arises which cannot be recognized as related to that from which it proceeded. Under favorable conditions, an ordinary intermittent fever may develop into a virulent form, which is highly contagious. There is, in his opinion, very strong ground for the belief that even the innocent hay bacillus may undergo such an alteration in its type as to become the germ of severe disease."

The "Sand Cure."—A certain Dr. Kerlus recommends sand as a remedy for dyspepsia. This is his reasoning: "Herbivorous animals all eat a little dirt with their regular food, and it makes it more 'porous.' Fowls and birds of all kinds also take sand with their meals. Why not, therefore, man?" The remedy is "dirt cheap," but we are not prepared to recommend it, notwithstanding the claim of the author that he has had great success in its use.

—The pail system for disposing of excreta and house refuse, is in successful operation in a number of the larger cities of England and Scotland. It is the only satisfactory method of disposing of decomposable matter in a town or city not supplied with sewers, and possesses some advantages over the sewerage system.

Tobacco-Smoking Nations.—A statistical comparison recently published, showing the relative extent to which various nations are addicted to the use of tobacco, gives the proportions as follows: For England, France, and Russia, 5; for Italy, 7; for Cuba, 11; for Austria, 14; for Germany and North America, 15; for Belgium, 24; and for Holland, 28.—*Sanitary Journal.*

Narrow Escape.—The published report of a benevolent society says: "Notwithstanding the large amount paid for medicine and medical attendance, very few deaths occurred during the year."—*Ex.*

Lead Poisoning from Silk.—A dress-maker received as a patient at an English dispensary was found to be suffering with lead poisoning, which was traced to the sewing-silk she used, habitually holding the threads in her mouth. It is well known that silk which is sold by weight, is often made to weigh more than the proper amount by adding acetate of lead.

New Parasite in Pork.—A new parasite, vegetable in character, and bearing the name of the *Haplococcus reticulatus*, has been recently discovered by Dr. Zoff.

—The present rage among the wealthy for the old oriental rugs in the furnishing of their homes, has induced a prominent medical journal to call attention to the fact that many of these faded and frowsy mats have been used as kneeling rugs by Mohammedan pilgrims, many of whom were undoubtedly victims of leprosy and other loathsome diseases, which may by this means be introduced into English and American homes. The "odor of sanctity" which attaches to these relics of heathenism should be thoroughly dissipated by baking or fumigation before they are allowed to enter a home.

—Dr. Richardson reports the case of a man who fasted fifty days; he then died.

DOMESTIC MEDICINE.

NASAL CATARRH.

Causes.—Among the most active of all exciting causes of catarrh of the nose and throat, is what is popularly known as taking cold. "A cold in the head" is essentially a slight fever, accompanied by an acute inflammation of the mucous membrane lining the nasal cavity.

A cold is usually looked upon as a very trifling affair, which scarcely needs serious attention, as it will work off of itself in a few days. This is really a grave error. Neglected colds are the most common cause, not only of catarrh of the nose and throat, but not unfrequently of still more grave diseases, as chronic laryngitis and consumption. At least, a neglected cold leaves behind it an increased susceptibility to taking cold, so that another is contracted much more rapidly than the first; and this susceptibility to taking cold is increased until finally a very slight exposure, which would be in fact no exposure at all to a healthy person, will be sufficient to induce a severe cold, which may last for weeks, or even months. After a time, indeed, the susceptibility becomes so great that no exposure whatever is required to cause the individual to take a cold. A change of a few degrees in the barometer, or a slight variation in the temperature of a room, or a change in the direction of the wind may be sufficient to bring on a fresh attack.

Thus what was at first only an occasional occurrence, colds being contracted only at long intervals, becomes, on account of serious exposure, a practically continuous condition, and a simple cold has resulted in a chronic catarrh. The frequent inflammation of the nasal membrane has caused its blood-vessels to become relaxed and dilated to such an extent that the condition is permanent, and the membrane is constantly congested, thus occasioning a too profuse secretion of mucus on the part of the glands situated in the membrane, and a too rapid exfoliation, or shedding, of the epithelial cells covering the membrane.

It may be well to consider some of the ways in which persons contract colds. In general, it may be said that a cold is occasioned by some violation of the laws relating to health, particularly those relating to the proper clothing of the body. The majority of bad colds are contracted in the spring and fall, as at these seasons of the year people are apt to be most careless in regard to the proper protection of the body. Many persons neglect to put on an extra suit of warm under-clothing sufficiently early in the fall to avoid an early cold; and probably an equally large number commit a similar error in leaving off the warm woolen under-suits too early in the spring, and before the weather has become settled. In this climate, the weather can scarcely be considered settled before the first of June; indeed, in some seasons the weather does not seem to be settled at all. A "cold snap" will sometimes occur in July and August, which creates as great a necessity for additional underclothing as the approach of cold weather in late autumn. The only safe plan in relation to clothing is to wear woolen drawers and undervests the year round. Some prefer a mixture of wool and cotton, and as a rule, such a fabric is more agreeable to the skin than pure wool. The summer suits may be as thin as desired; in winter, very heavy suits should be worn, and, in severe cold weather, two or three suits. The clothing should be carefully adapted to the weather. Extra cold weather in winter, and an extra exposure to the cold, calls for one or two extra suits of under-clothing; and a cold spell in mid-summer creates a still more urgent demand for extra clothing than a similar change in winter, as warm weather produces a condition of the skin which is not so well prepared to defend itself against the cold as when it has been accustomed for some time to a lower temperature.

The clothing of the head is a matter of special importance. Men, as a rule, protect their heads by warm fur or felt caps or hats; but women are generally so enslaved by fashion that health is sacrificed for the sake of gratifying the perverse taste for displaying a fashionable bonnet, which cannot be considered as in any degree a protection to the head, being at best merely an ornament. Both the head and the neck should be sufficiently protected to prevent chilling. The wearing of heavy fur scarfs and mufflers is, however, a practice to be condemned, as the amount of heat thus induced is so great as to produce perspiration, and, as a result, increased liability to a cold. Woolen wrappings for the

throat possess the advantage of being pervious to the air, and consequently less liable to excite undue activity of the skin. The throat should not be enveloped in so many folds as to occasion an excessive degree of heat.

The practice of cutting the hair of men and boys very short, which has been much in vogue in recent years, must also be condemned as in the highest degree productive of catarrhal affections. The hair is intended as a protection to the scalp, and should be left sufficiently long to serve its purpose. No less to be condemned are the enormous masses of hair sometimes worn by ladies, which over-heat the head, and injure the scalp by their great weight.

Too great stress cannot be laid upon the importance of proper clothing of the feet and lower limbs. Thin-soled shoes are scarcely better than no shoes at all, as they rapidly conduct the dampness through to the feet. The sole of the foot is very largely supplied with nerves, and is one of the most sensitive portions of the body. It is on this account that a cold is contracted more rapidly by wetting or chilling the feet than by similar accidents to most other portions of the body. The shoes should be thick and warm, with heavy soles, and rubbers should be worn during wet weather, or when the shoes come in contact with moist surfaces. The wearing of rubbers or water-proof overshoes constantly, is not a healthful practice, however, as the moisture escaping from the surface of the feet is retained, so that they become wet, and injury may result as readily as though they were wet in any other way.

Somewhat extended opportunities for observation have led us to the conclusion that an inactive state of the liver has something to do toward predisposing an individual to catarrh. We have observed that a torpid liver is, in the majority of cases, associated with nasal catarrh; and chemical examination shows that the discharges of the nasal cavity of a person suffering with catarrh contain a considerable quantity of cholesterine. The influence of diet, as the excessive use of fats, sugar, condiments, and numerous other unhealthful articles, in predisposing to catarrh, is unmistakable. Sedentary habits, by lowering the vital tone and lessening the resisting power of the individual, are predisposing causes which should be mentioned. In the next number we will describe the leading symptoms of catarrh, and the results when long continued.

—Cold water is Nature's beverage.

Cold Water in Pneumonia.—The popular fear of using cold water in the treatment of pneumonia is wholly unfounded. In the first stage of the disease, when the temperature is usually high, and the local mischief is being done, cold applications may be made over the affected lung with excellent effect. Many continental physicians employ the cold full bath with good results. The following is clipped from the *Medical Gazette*:—

"Burgnatelli reports eleven cases successfully treated by this method (*Rev. med. dell' Istituto Lombard*). The patients bear the cold bath well; on immersion in water of 23° to 19° C. (73°.4 to 66°.2 F.), they experience a slight shiver, which soon passes off. These low temperatures are better borne when the patient is placed at once in the cold water, than when the water is gradually cooled down after his immersion. The pulse generally becomes slow and small; respiration is sometimes unaffected, sometimes hurried, more frequently diminished and deeper. The temperature often falls several degrees, and this fall lasts for some time. The general state is sensibly improved, the patient is much more calm, and generally sleeps for several hours. The bath seems to exercise a beneficent influence on the disease. In seven cases the fever disappeared, and resolution began on the sixth day, in two on the seventh. The bath probably hastens resolution in the lung. Contraction of the superficial vessels causes increased pressure in the deep vessels, while at the same time the heart is stimulated."

Water for Infants.—The following article, which we clip from the *Medical Record*, contains so much good sense that we are very glad to reproduce it:—

"With the exception of tuberculosis, no disease is so fatal in infancy as the intestinal catarrh occurring especially during the hot summer months, and caused, in the great majority of cases, by improper diet. There are many upon whom the idea does not seem to have impressed itself that an infant can be thirsty without at the same time being hungry. When milk, the chief food of infants, is given in excess, acid fermentation results, causing vomiting, diarrhea, with passage of green or greenish-yellow stools, elevated temperature, and the subsequent train of symptoms which are too familiar to need repetition. The same thing would occur in an adult if drenched with milk. The infant needs, not food, but drink. The recommendations of some writers, that barley-

water or gum-water should be given to the little patients in these cases, is sufficient explanation of their want of success in treating this affection. Pure water is perfectly innocuous to infants, and it is difficult to conceive how the seeming prejudice against it ever arose. Any one who has ever noticed the avidity with which a fretful, sick infant drinks water, and marks the early abatement of febrile and other symptoms, will be convinced that water, as a beverage, a quencher of thirst, as a physiological necessity, in fact, should not be denied to the helpless members of society. We have often seen an infant which had been dosed *ad nauseam* for gastro-intestinal irritability, assume almost at once a more cheerful appearance, and rapidly grow better when treated to the much-needed draught of water. If any one prescription is valuable enough to be used as routine practice, it is 'Give the babies water.'"

Foreign Bodies.—A contemporary offers the following excellent suggestions respecting the removal of foreign bodies from the throat, nose, ear, and eye:—

In the Throat.—When anything has lodged in the throat, causing choking or suffocation, a smart blow on the back between the shoulders will in many cases send the substance out of the mouth. Should this fail, hold up the body by the feet (in the case of a child) and let another person strike between the shoulders with the open hand. This process should only last for a moment. Look in the throat, and see if the substance can be reached; seize hold of it with the thumb and finger, or a pair of blunt-pointed scissors, and pull it out. If there is only a small substance in the throat, causing a troublesome, tickling cough, give bread, followed by a drink of water; and if this is not sufficient, give a little mustard and warm water as an emetic, and after vomiting there will probably be no further trouble.

In the Nose.—When any small article, as a pea, bean, or pebble, has been pushed into the nose, it may often be removed by snuff, or any other substance which will produce sneezing, being introduced into the opposite nostril, or by the use of a pair of forceps or blunt-pointed scissors, care being taken not to push the substance back into the throat. Peas and beans are the more dangerous, as they increase in size by the absorption of moisture.

In the Ear.—Insects in the ear are removed by plugging the external opening with a piece of cotton saturated with a solution of salt or vinegar, so as to prevent the admission of air. Then let the patient lie on the affected side, and press the hand firmly on the ear. After a few minutes, the insect may be found imbedded in the cotton. Or lay the patient on the opposite side, and fill the ear with oil. A small stream of water from a syringe will often remove small bodies or sand. If any substance can be readily seized with the forceps, they may be used for this purpose; but very little force must be used, or the substance will be pushed still further in, rupturing the drum of the ear, and permanent deafness will be the result.

In the Eye.—For the removal of dirt, sand, etc., from the eye, it will often suffice to lift the upper lid away from the eyeball by taking hold of the lashes, drawing it down over the lower lid, and allowing it to slide slowly back. Then wipe the edges with a handkerchief to remove the foreign body from the lashes. Or, take something hard, like a knitting-needle or pencil, and press it across the outside of the upper lid, then take hold of the lashes and make the lid turn over the pencil, and the substance will generally be seen sticking to the delicate membrane which lines the lids, when it can be gently washed or rubbed off.

Ear Disease in Children.—A German specialist has been examining the ears of schoolchildren, and finds so large a number as 1,392 in 5,905 children affected by some form of disease of the ear, or nearly one-fifth of the total number examined. Children are often accused of stupidity, when the real difficulty is defective hearing. This is a matter which every parent should look after; and as soon as any evidence of disease is discovered, such as discharge from the ear, frequent ear-ache, tenderness about the ear, noises in the ear, or defective hearing, a competent specialist should be consulted.

Electricity.—A galactagogue is a remedy supposed to have the power of increasing a flow of milk. Electricity is one of the best means which can be employed for this purpose. The ordinary faradic current should be employed. Application is made by placing upon either side of the breast a moistened sponge electrode, using a very mild current. The application should be made twice a day, and ten or fifteen minutes at a time. The effect is usually quite prompt.

—A Southern gentleman claims to have received great benefit from rubbing the body with glycerine after bathing.

Hot Water Enemata in Childbirth.—A writer in the *British Medical Journal* calls attention to the value of hot enemata as a means of facilitating childbirth in cases of difficult labor, and has often found that the use of the forceps can be dispensed with by this powerful means of stimulating the pelvic organs. It not only relieves the bowels of any obstruction, but stimulates both the voluntary and involuntary muscles to vigorous contraction, and its use almost always affords grateful relief to the patient. We can add our own experience to that of the writer referred to, having found it very beneficial in a number of cases.

Contagious Baldness.—A German physician contends that premature baldness is usually a result of contagion. He claims that the hair is destroyed by a fungus which is communicated from one head to another by means of combs and hair-brushes. The remedy recommended is washing the scalp daily with tar soap, afterward bathing it with warm water for some time, and then drying the hair, and applying a weak solution of carbolic acid. A one or two per cent solution is of sufficient strength. The wash should be continued six or eight weeks, and is said to be successfully employed when the hair first begins to fall out.

Resuscitation of Still-Born Infants.—One of the very best means of revivifying a still-born child when life is not wholly extinct, is a hot-water bath. The little one should be placed at once in a bath at a temperature of 100 degrees, which temperature should be maintained, and the thorax should be conpressed at short intervals, so as to carry on artificial respiration. By this method, thousands of infants may be saved who would otherwise perish at the very threshold of life.

To Remove Liver Spots.—In some instances these unsightly stains may be removed by taking a thorough soap and water bath every day, and afterward applying a solution of hyposulphite of soda, one drachm dissolved in an ounce of water. The general health should be improved in every possible way, and the activity of the liver increased by proper diet.

Ivy Poisoning.—In cases of poisoning with poison-ivy, paint the affected parts as soon as possible with a mixture of quick-lime and water. The mixture should stand half an hour after the lime and water are put together.

For Nettle-Rash.—Bathe the parts with hot water. A teaspoonful of carbonate of soda to the pint of water, either cold or hot, is often more effective. Rubbing slices of lemon on the affected surfaces sometimes affords speedy relief.

Question Box.

Bright's Disease.—Mrs. J. M. H. inquires for the cause and symptoms of Bright's disease of the kidneys, remarking that people often die from the disease without even their friends or physicians being aware of the nature of the malady until after death.

Ans. Among the leading symptoms of Bright's disease are, general and increasing debility; peculiar pallor; dropsical swelling of the face, hands, and feet, and finally the abdomen; nausea; headache; frequent vomiting; drowsiness; and in the last stages, convulsions, and attacks of coma. The urine is somewhat viscid, and in shaking the bottle a great amount of froth is produced, which persists for a long time. The urine coagulates when heated, and after adding nitric acid or acetic acid; there is usually more or less of a whitish sediment, which is largely made up of casts from the tubucles of the kidneys. The long list of symptoms published by the advertisers of "Warner's Safe Kidney and Liver Cure" as the symptoms of this disease, are, as they are intended to be, very misleading, and calculated to make every man who has a torpid liver or indigestion believe that he is suffering with Bright's disease.

The disease is undoubtedly increasing, a fact which is attributable to the large use of beer and animal food in this country, but it is by no means so frequent as the assertions of the venders of quack nostrums would have the people believe.

Magnetism.—Mrs. H. H. F., of Va., inquires about the effect of magnetism on the human body, especially with reference to its influence upon the circulation.

Ans. Numerous experiments have been made for the purpose of determining the influence of magnets upon the human body. The first experiments made were conducted in Paris nearly a century ago. A man by the name of Mesmer professed to have obtained remarkable results from the use of large magnets. The French Academy appointed a committee to investigate the matter, one member of which was the eminent Benj. Franklin. The committee found that some effects were apparently produced by the magnets; but when the magnets were replaced by blocks of wood resembling them, the effect continued the same as before, leading them to the conclusion that the results apparently obtained from the magnets were really the work of the imagination of the patients. Numerous experiments have since been made in the

same line, and some persons have claimed results from the use of magnetism; but it is by no means established that the magnet is of any remedial value whatever. Prof. Charcot, of Paris, has been quoted as recommending the use of magnets, and we saw a small magnet in use in his Clinic at the Salt Petriere in Paris; but on making inquiries respecting the matter, we learned that he had no faith whatever in the remedial efficacy of the magnet, except as it influenced the imagination of the patient. He employed it in certain cases of hysteria in which the disease was largely due to a perverted mental state.

We consider of no value whatever the various forms of magnetic shields, etc., which are recommended and sold as panaceas for nearly all the diseases to which flesh is heir. If magnetism is of any value whatever as a remedial agent, it must be employed in very large quantities, and by the aid of very powerful magnets. The tiny magnets used in magnetic shields would exert less influence upon the circulation than the ordinary-sized pocket magnet carried in the vest pocket. A magnetic insole will, of course, aid in keeping the feet warm, as will insoles of any other description.

Rush of Blood to the Head.—M. L. R., of Dakota, inquires, "What is the cause of a rush of blood to the head when a person is standing erect, causing a hot sensation for a minute, then immediately after, a cool sensation.

Ans. Sudden flushing of the face or of other parts of the body are, when not occasioned by violent exercise, or mental emotions, due to some disturbance of that portion of the nervous system which regulates the circulation of blood in the small blood-vessels. Such disturbances usually accompany conditions of the system in which there has been loss of nerve tone. It is frequently present in nervous dyspepsia, and is one of the indications of the approach of the menopause, or change of life, in women.

Artificial Respiration—Chronic Constipation—Fish Diet.—An inquiry comes from two consumptives in Canada, for information how to construct a simple and cheap apparatus for administering artificial respiration; how to cure chronic constipation without medicine; and the nutritive value of milk and fish.

Ans. 1. See reply to "a Detroiter from home," in the March number of GOOD HEALTH, page 91.

2. Make the diet consist chiefly of grains and fruit; use very little meat. Drink six or ten glasses of hot water through the day, taking two or three glasses one or two hours before each meal. Wear every night a wet towel, wrung pretty dry, placed about the lower portion of the body, covered with three or four thicknesses of flannel. On removing in the morning, rub the body and bowels with a coarse towel wet in cold water, and knead and percuss the abdomen ten or fifteen minutes.

3. Both milk and fish contain a large amount of nutritive elements. Milk, particularly, is an excellent food when obtained from healthy cows. Fish is a less wholesome article of diet, but may be used in moderation with other foods without injury to the system.

Palpitation of the Heart—Coffee.—E. H. complains of a twitching or jerking of his heart when lying abed; he also wishes to know if he will be safe in telling some of his coffee-loving friends that there is not enough nutritive value in ten pounds of coffee to make a breakfast for a laboring man, and if ten pounds of coffee contain enough poison to kill ten men.

Ans. 1. Palpitation of the heart is due to a variety of causes, usually to some disturbance of digestion. The best remedy is to remove the cause. If the difficulty still persists, the heart should be examined by a competent physician, to determine whether or not organic disease is present.

2. The coffee berry contains some nutritive elements as well as poisonous elements. If taken cooked, like peas or beans, and before roasting, and if its poisonous elements could be removed, life might be sustained by its use; but in the form in which it is ordinarily employed, its nutritive value is entirely destroyed by the roasting process, and it is practically nothing more than a stimulant. In order to secure its nutritive elements, it would be necessary to take the entire berry, as the infusion contains only the poisonous elements. The analysis of coffee shows that it contains from seventy to one hundred and fifty grains of caffeine to the pound. Twenty grains of caffeine have been known to produce dangerous symptoms, administered to a strong man. Thirty or forty grains would probably be a fatal dose.

Diseased Meat.—P. H., of Wash. Ter., sends us a sample of meat for examination, the eating of which caused severe illness of his entire family. The symptoms were pain in the back of the head, and nose-bleed, with fever and weakness at the stomach. Our correspondent has himself been ailing since. The meat "did not smell just exactly right while cooking." Some cattle had died in the vicinity, of what is called "black leg." He wishes us to determine what was the matter with the meat.

Ans. The quantity of meat sent was so small that it was impossible to make a proper examination of it, but the circumstances stated certainly point very strongly to the meat as being the cause of the sickness. Such occurrences are becoming more and more common, and emphasize the fact that animals as well as human beings are subject to disease, and that the greatest care should be used in selecting meat for food.

THE COOKING SCHOOL.

Conducted by MRS. E. E. KELLOGG.

A DINNER OF EIGHT COURSES.

GRAINS AND MUSHES.

THE grains, rice, barley, oatmeal, and the various preparations of corn and wheat are among the most nutritious articles of diet. Of the combined nutritive elements, they contain, according to the best authorities on foods, more than double the amount to be found in the same quantity of beef, mutton, or poultry. In the proper proportion of the food elements necessary to meet the requirements of the system, which scientific investigation has shown to be about one part albumen to seven of carbonaceous elements, they approach more nearly the given standard than most other foods; indeed, wheat contains exactly the correct proportion of the food elements. Being thus, in themselves, so nearly perfect foods, and when well prepared, exceedingly palatable, they are the cheapest and most wholesome articles of diet.

The only objections to be urged against their use is that they are not always thoroughly cooked, and are apt to be eaten without any attempt at mastication, which renders digestion difficult and often imperfect. Being soft and already in fine particles, mastication is not necessary to render the mouthful fit for swallowing; but the simple breaking up of food is not the only necessity for mastication. It is especially important that every particle of food entering the stomach should be thoroughly mixed with the saliva, the first of the digestive juices, which, by its action, converts the starchy portion into sugar, and also stimulates the secretion of the gastric juice when taken into the stomach. If the food, then, is imperfectly salivated, the first process of digestion is imperfect, and, in consequence, the stomach digestion will also be imperfect. This difficulty is easily obviated by eating slowly, or by using some dry food with the small grains, which will necessitate a thorough mastication.

Grains and their preparations are usually served in the form of mushes or puddings, and too often in an under-done state. Grains and mushes of all kinds require several hours' cooking, and slow cooking is always preferable. Soft water is preferable to hard in their preparation; and if salt is to be used at all, it should be added to the water before stirring in the grain or meal. The most convenient utensil for cooking either grains or meals, is a double boiler, consisting of one vessel set inside another, the inner one containing the grain, the outer one filled with boiling water. An ordinary bowl-shaped iron kettle will, however, do very well, if smooth, and by greasing the inside with a little butter or oil before putting in the water, the tendency of the mush or grain to adhere to the kettle will be greatly obviated.

If one does not possess a double boiler, a very fair substitute may be improvised by using a covered tin pail for the grain, and hanging it in a kettle of boiling water by means of a stick laid across the top of the kettle. A weight may be laid on the top of the pail to keep it upright, and care must be taken that the water does not come up high enough to boil into the grain, although there should be sufficient to cover the pail to the depth of the grain on the inside. A covered pail set in a pan of boiling water will also do very well for a double boiler.

The water in the outer boiler should be kept at a steady boiling heat; and if it becomes low, should be replenished with boiling water, never with cold, as that will check the cooking of the grain, and tend to make it water-soaked. The water should never be allowed to dry entirely out of the outer vessel, or the grain will burn on the bottom.

After the grain or meal has set, or become thickened and ceased to settle to the bottom, it should be stirred but very little or none at all. Much stirring breaks up the particles, and frees the starchy portion, thus rendering the food pasty, and much more liable to stick to the bottom of the cooking utensil.

All grains and meals should be put into boiling water, and allowed to boil hard until they set, or cease sinking to the bottom; and till then should be stirred constantly, lest they burn on the bottom of the dish. If the double boiler is used, allow the grain to boil in the inner cup standing on the stove until it sets, then cover, and place in the outer boiler, the water in which must also be boiling in order that the cooking process be not checked, and leave to cook slowly until done. If it is desired to have the grain dry, leave the cover off for the last half hour of the cooking. If a kettle is used for the cooking, as soon as the grain has thickened, set it on the back of the stove where it can only simmer, cover closely, and leave till done.

The following recipes give the amount of water and the approximate length of time required for cooking some of the various grain products:—

Pearl Wheat.—Put half a pint of pearl wheat to soak over night in a quart of soft water. In the morning, drain off the water into the inner cup of a double boiler, and heat it to boiling temperature, then add the wheat slowly so as not to stop the boiling. Let the wheat boil rapidly ten or fifteen minutes, stirring oft-

en; then place with the same, in the outer cup, the water in which should be boiling, and leave it to steam about three hours. Remove the cover the last twenty or thirty minutes of the cooking. Pearl wheat may be cooked in the same manner and quantity of water without soaking, but must be steamed a longer time by one-third, and the grains are more apt to be crushed and pasty from the long-continued cooking.

Crushed Wheat.—Crushed or cracked wheat may be cooked in the same manner as pearl wheat by using four and one-half parts of water to one of grain. The length of time required to thoroughly cook it is about the same as for pearl wheat. If either the cracked or pearl wheat is desired for breakfast, it should be cooked the afternoon previous. In the morning, warm it by putting it into the inner cup of the double boiler, and placing that in the outer boiler of boiling water, where it will warm in a short time. Very little stirring will be required, and the grain will be as nice when thoroughly warmed as when first cooked. If the double boiler is porcelain lined, or of pure granite ware, the grain can be cooked and left in it over night.

Cracked Wheat Dessert.—Cracked wheat, cooked according to the foregoing recipe, and turned into molds till cold, makes a very palatable dessert, and may be served with sugar and cream or with fruit juice. Bits of jelly placed on top of the molds in stars or crosses, give it a very pleasing appearance. The same is very nice served with fresh berries in their season.

Cracked Wheat Pudding.—A very simple pudding may be made with two cups of cold, well-cooked cracked wheat, two and a half cups of milk, and one-half cup of sugar. Let the wheat soak in the milk till thoroughly mixed and free from lumps, then add the sugar and a little grated lemon peel, and bake about three-fourths of an hour in a moderate oven. If the oven is very slow, a longer time will be required. The pudding should be of a creamy consistency when cold, but will appear quite thin when taken from the oven. It is best served cold. By flavoring the milk with cocoa-nut, a quite different pudding can be produced. Pearl wheat is quite as good for this pudding, and many prefer it.

Pearl Barley.—Pearl barley may be steamed the same as pearl wheat. It should be soaked over night. Most people, however, prefer that it should be cooked in fresh water instead of that used to soak it in, as in the case of pearl wheat. Three parts water to one of barley should be used, and a half hour's more steaming than for pearl wheat is required.

Baked Barley.—Soak six tablespoonfuls of barley over night in cold water. In the morning, turn off the water, and put the barley in an earthen pudding dish, and pour three and one-half pints of boiling water over it; add salt if desired, and bake in a moderately quick oven about two and a half hours, or till perfectly soft, and all the water is absorbed. When about half done, add four or five tablespoonfuls of sugar mixed with grated lemon peel. This may be eaten warm, but is very nice poured into cups, and molded to be served cold with cream.

Rice.—Rice requires a much less time for cooking than most other grains. A very good way to cook it, when one does not possess a double boiler, is to soak a cupful in a cup and a half of warm water for an hour, then add a cup and a half of milk to the rice and water, turn all into an earthen dish, and set into a covered steamer over a kettle of boiling water, and steam for an hour. It should be stirred with a fork occasionally, for the first ten or fifteen minutes. (Let us here remark that a silver fork is also much better for stirring wheat and barley than a spoon.)

If the double boiler is used to cook rice in, the soaking may be dispensed with. The same proportions should be used; *viz.*, one cup of rice to three of water. After being carefully picked over and washed, put the rice into the water, which should be boiling, and let it boil rapidly, stirring frequently, for ten or fifteen minutes, till the rice has well swelled; then place in the outer boiler, and steam, uncovered, without stirring, till tender.

Cooked by either of the above methods, rice will be white and dry, with each grain separate and distinct, though soft and tender.

Rice may be cooked just as nicely in an ordinary stew-pan, but requires much more care to keep it from adhering to the bottom of the pan. The same quantity of water, or of water and milk, should be used. The rice should be allowed to cook rapidly until well swelled, when it must be placed where it can only simmer till tender, and the water is absorbed.

If it is desired to cook rice very quickly, the best method is to put a cupful into five times as much boiling water, and boil rapidly twenty or thirty minutes, till tender. Turn all into a colander, and thoroughly drain the rice, then place it in a dish in a warm oven, where it will keep hot, and dry off. Picking and lifting occasionally with a fork, will make it more flaky and dry.

Simple Rice Pudding.—Look over carefully one-half cup of good rice, put it into an earthen pudding dish, with one-half cup of sugar and four cups of new milk and such flavoring as desired. Place the dish on the top of the stove, and leave until the milk is boiling hot, stirring frequently, so that the rice shall not adhere to the bottom of the dish. When heated to the boiling point, put into the oven, and bake till the rice is tender, which can be ascertained by dipping a spoon into one side, and taking out a few grains. This pudding should not be dry when done, but of a rich, creamy consistency.

Oatmeal.—Wet one cup of coarse oatmeal with water just sufficient to moisten it, and pour over it a quart of boiling water. Turn into the inner cup of a double boiler, and boil rapidly, stirring continuously, until it sets; then place the cup in the outer boiler, and cook three hours or longer.

Farina.—Put one pint of milk and one of water, or, if preferred, a quart of milk, to boil in

the inner cup of a double boiler; add salt if desired; and when boiling, stir in five tablespoonfuls of farina, wet with just enough milk to moisten it. Let it boil rapidly until well set, which will be in about five or eight minutes; put into the outer boiler, and steam an hour. It may be eaten hot or cold as preferred.

Molded Farina.—A very nice and simple dessert may be made of farina by cooking in the same manner as described, using a little cream instead of milk to moisten the farina, and adding about four tablespoonfuls of sugar at the same time with the farina. When done, turn into cups previously wet with a little cold water, and let cool. Turn from the mold when cold, and serve with whipped cream flavored with vanilla or lemon.

Graham Grits.—This is a granulated meal, a little finer than farina, which as yet is quite new in the market. We know of but one place where it is manufactured, but it can be obtained from the Sanitarium Food Co. It is the material par excellence for mushes. For its preparation, use a teacupful of grits to the quart of boiling water; pour the grits slowly into the water, stirring it rapidly with a spoon or spatula that no lumps be formed; or, if preferred, a teacup of water may be retained, and the grits mixed with it to a paste, before putting into the boiling water. Boil rapidly with continuous stirring until well thickened, then place in the outer boiler to steam two or three hours.

Beaten biscuits made of Graham grits according to the recipe given in the last number are very nice.

Vegetable Oyster Soup.—Scrape all the outer covering and small rootlets from the vegetable oysters, and lay them in a pan of cold water to prevent discoloration. The scraping can be done much easier if the roots are allowed to stand in cold water for an hour or so before they are needed. Slice enough of the prepared roots to make one quart, and put them to cook in a quart of water. Let them boil slowly for two hours, or until very tender. If it is desired to make the soup with an especial oyster flavor, a piece of salt codfish about an inch square may be boiled with the vegetable oysters, and removed as soon as the roots are tender. (We do not especially recommend this, however, and persons whose tastes are unperverted will prefer the soup without this addition.) When tender, add a pint of milk, a cup of thin cream, salt if desired, and, when boiling, a tablespoonful or two of flour, rubbed to a paste with a little milk. Let the soup boil a few minutes until thickened, and serve.

To Cook Prunes without Sugar.—Put the prunes in warm water to clean them. Remove the stones if desired, then put them to cook in three quarts of water for one of prunes. Cover them closely, and let them simmer for several hours. Cooked in this way, they will be soft and sweet, with a thick juice, and need no sugar whatever. Many persons who cannot eat fruit cooked with sugar, can safely partake of prunes cooked in this way.

Literary Notices.

THE WOMAN AT WORK.—The March number of this most excellent magazine opens with a portrait and sketch of Mrs. Sarah B. Cooper. The whole journal is full of most helpful articles, written especially for women and their needs. *The Woman at Work* has long been a welcome visitor at our table, and is always full of good things; but we could not help thinking, as we perused the present number, that it grows better and better with each new issue.

Published at Brattleboro, Vt. Yearly subscription, $1.00.

THE HOUSEHOLD.—Of all the magazines published in the interest of house-keeping and home making, we know of none of more practical value than the *Household*. It always contains a large stock of useful knowledge for home keepers, and imparts it in such plain, familiar language that the reader feels she has found a helpful, interested friend in her trials, duties, and aspirations to success in all the various departments of home life.

Subscription price, $1.10 per annum. Published at Brattleboro, Vt.

A CIRCULAR just received from the Rural Health Retreat, St. Helena, Cal., pictures it as one of the most attractive spots on the continent, with a climate unrivaled for its invigorating and health-giving qualities, and its facilities for treating the sick in accordance with rational principles. The numerous testimonials appended to the circular guarantee the correctness of the claims made by its managers, and our acquaintance with them enables us to indorse all they say about their growing institution and its advantages, although we have never had the pleasure of visiting it personally. For some classes of invalids, a change of climate is a most important aid to recovery; and when this can be made without sacrificing home comforts and advantages, and with the added advantage which can be afforded only by a well-ordered Sanitarium, such a change may often be made the means of prolonging life for years, even when a cure is impossible, and not infrequently the worst cases recover by the aid of the combined advantages of an invigorating climate and rational treatment.

The managers of the Sanitarium have several times considered the expediency of establishing a branch institution in some such locality as St. Helena, and should undoubtedly have carried out the plan long ago but for the heavy debt under which the institution has labored. They are greatly pleased at the enterprising spirit shown by the managers of the St. Helena institution in their efforts to place it upon a footing with the best institutions in the country in all particulars, and will take pleasure in recommending it to persons requiring the special advantages afforded by the climate.

A special car with thirty persons bound for St. Helena left here last evening. We are glad to say they are not all invalids, but quite a number were in feeble health, and will undoubtedly be benefited by the change of climate. Those who desire further information can readily obtain it by addressing a letter to the Rural Health Retreat, St. Helena, Cal

Publisher's Page.

☞ We are constantly receiving letters from old patients who express themselves so well pleased with the journal that they are unable to dispense with it, and have been benefited each year many times its cost by the saving of sickness and doctors' bills. The publishers have spared no efforts to make the journal the most practical and useful of its class, and are pleased at the evidences of appreciation of their efforts in the rapid increase of its already large circulation.

☞ We have received so many communications for our "Question Box" that it is more than full this month. We trust those who do not find answers to their questions in the present issue will be as patient as possible, and in due time their inquiries will receive attention.

☞ Just after our last number went to press, an accident occurred at the Sanitarium, of which many of our readers may be already aware, through the somewhat exaggerated accounts given by the public press. After some years of use, one of the boilers used for heating the building proved to be defective through the weakness of a single sheet, which gave way under the light pressure of less than sixty pounds, the maximum pressure employed. The settings of several boilers were disturbed, and their pipe connections with the Main Building broken, so that the supply of heat to the building was cut off. The damage to the boiler room, though considerable, was speedily repaired, so that in two days the uninjured boilers were supplying heat to the building as usual. In the meantime, all were made comfortable, and and the usual treatment was given, with the exception of the mechanical movements, by means of portable boilers, some of which were in place and supplying heat to the building in less than three hours after the accident, so that the steam-pipes and and coils did not have time to cool.

The damage to the boiler was wholly confined to a single spot, not a brace, rivet, or seam in any other portion being at all injured. The boiler had been inspected but a few weeks previous by an agent of the Hartford Boiler Insurance Co., and seemed to be sound. The company very promptly paid the loss resulting from the accident, thus demonstrating their claim to reliability and fairness in the adjustment of losses.

The boiler house is so situated in relation to the main building that not a particle of damage was done to either the building or its inmates. Even the fireman, who stood within two feet of the boiler, was unhurt. The injured boiler is to be replaced by a larger boiler of steel, of the most approved construction. The upper part of the boiler house, which was formerly occupied as a gymnasium, will be used for other purposes, and a large, new gymnasium, 45x85 feet, with a basement of the same size, will be constructed as soon as possible. The contractors agree to have the structure finished and ready for occupancy soon after June 1. A large sixty-foot tent, which has been rented for the purpose, will be used as a gymnasium until the new building is completed.

The managers of the Sanitarium feel that they have reason for deep gratitude that no injury to life or limb resulted from the accident, and congratulate themselves upon the precautions for safety taken a few years ago when the boilers were removed from the basement of the Main Building to their present location.

☞ The contract for the erection of the addition to the main building, including the new gymnasium, has been let to Messrs. Bush and Patterson, of Kalamazoo, Mich., a firm whose reputation for reliability and ability is second to that of none in the State, and who possess unequaled facilities for accomplishing the work in the best possible manner and in the shortest possible time. They have agreed to complete the entire work by Oct. 1, 1884. The work is already under good headway. The new structure will be composed of brick, and will be constructed with reference to safety from fire as well as the highest degree of sanitary excellence. The completed structure will have a front 257 feet in length, four and five stories in hight above the basement, including its rear extension, its total length will be 466 feet. The entire ground covered by the main building will be 23,518 square feet. When complete, this will undoubtedly be by far the largest and most complete structure ever erected for similar purposes.

☞ A Sanitary Convention will be held at Hillsdale, Mich., April 17 and 18, under the auspices of the State Board of Health, assisted by a committee composed of the leading citizens of Hillsdale. These Sanitary Conventions are a very important and useful feature of the work of the State Board of Health, and always enlist the interest of the most intelligent citizens wherever they are held.

The papers and addresses presented are such as are of interest to the common people, and the information communicated such as is indispensable to those who recognize the necessity of regarding the requirements of sanitary laws.

BUILDING PLANS.

If any of our readers are thinking about building a cheap or a costly residence, a public building, a church, a factory, a business block, a bank, a barn, or any kind of structure, or of remodeling an old house, or of decorating a house in modern style, they will find it to their interest to correspond with The Building Plan Association, No. 24 Beekman Street, New York.