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FOOD SUPPLY AND CHOLERA.

[In the Report on the Prevention of Cholera, by J. H. Raymond, M. D., Commissioner of Health of the city of Brooklyn, to the conference of State and Municipal Boards of Health recently held in Washington, D. C., we find the following remarks on the subject of food supply, which are so important in character that we quote them for our readers.—Ed.]

It is conceded that the food supply during the times of a cholera epidemic is an important agent in the predisposition of individuals to attacks of the disease. Koch, if I mistake not, calls attention to the greater liability of contracting the disease, when from any cause the alimentary canal is in an abnormal condition. Whether this is true or not, we know that when the body is properly nourished, individuals are more able to withstand attacks of disease, and even to escape them, than when, from any cause, they are in a debilitated condition. With this in mind, special attention has been given to the food supply of Brooklyn during the past summer. My experience leads me to the conclusion that a very much greater proportion of diseased animals is slaughtered and the meat of the same put upon the market than is commonly believed. During the past summer, inspectors have been stationed at the slaughter houses with reference to this detection of impure meat, and they have thus been enabled to discover and condemn meat which would otherwise have found its way into the market. In one of our large cities, at a not very distant date, scores of carcasses of immature veal were exposed for sale in

the public market, and it was the opinion of men competent to decide, that some of these calves had come into the world only a day or two before, and that others had been born dead. The effect of such meat upon the health of those unfortunate enough to eat it, can readily be surmised.

And here let me say that, in my judgment, no inspection of meat can be of much value unless it occur at the slaughter-house, and before the viscera have been removed. Many cases of tuberculosis and of contagious pleuro-pneumonia have been detected by the inspectors who were able to interrogate the lungs before they were removed from the animal, which would have passed a most rigid inspection had an examination of the carcass alone been relied upon. No statistics, so far as I am aware, have ever been collected in this country of the amount of tuberculosis in our cattle. In the abattoir of Munich in 1875, out of 55,882 head of cattle, 704 were tuberculous. It has been estimated that nearly six per thousand of the cattle of Bavaria are thus affected; and Fleming assumes that five per cent of the cattle of Great Britain are affected with tuberculosis. The milk supply of large cities is also one to be specially kept under observation during epidemics; and this not only because there is danger of milk from diseased cows finding its way into the market, but because a large amount of milk furnished in our cities is adulterated with more or less water.

This water is, as a rule, from the ordinary water supply of the farm or of the stable, and is liable to be impure, and, just as infected water may communicate disease to those who drink it, just so may milk, adulterated with infected water, be the means of conveying disease. The

adulteration of milk with water, therefore, is to be looked upon as something more than an ordinary adulteration affecting the pocket of the consumer, and something more even than one depriving the growing child, depending upon it for its support, of a large portion of its nutrition; it may be a means of conveying cholera, as it has time and again communicated typhoid fever. Courts, therefore, when complaints are made before them of selling milk adulterated with water, should have their attention specially directed to this danger, and should be asked to impose the heaviest penalties which the law allows.

Attention to the sanitary condition of cow stables is also very important. If the urine and excrement are permitted to accumulate and putrefy, either within the stable or in its immediate vicinity, the milk will almost certainly be affected. Every one is familiar with the remarkable absorptive power of milk, and the facility with which it undergoes decomposition. The atmosphere of a filthy cow stable, laden as it is with putrefactive germs, cannot but act deleteriously upon the milk exposed therein.

HINTS ABOUT NURSING THE SICK.

BY KATE LINDSAY, M. D.

NEXT to fresh air in the sick-room comes sunlight. Philanthropists have made eloquent appeals from pulpit and stage, and sown the land broadcast with printed pleas in behalf of prison reforms. Imprisonment should mean the moral reform of the prisoner, says the thinking, benevolent portion of society. Dark, close dungeons, deprived of fresh air and sunlight, tend to increase physical degeneracy and moral depravity.

The prisoner, in his dungeon gloom, cultivates and nurtures all the germs of moral disease. As soon as he is released, they develop into the rank and noxious weeds of crime again. But the jailors who hold the keys of the sick-room,—loving wives, tender mothers, gentle sisters,—who shall enlighten them in regard to the germs of disease and death they so often ignorantly foster in the dungeons over which they preside?

Clothing that has been worn by different members of the family, hung away unaired, saturated more or less by excretions from the body, soiled bed linen and underclothing, unemptied slop jars and

pails,—all are carefully stored out of sight in the same closet, and all exhale the germs of disease, to be absorbed by dusty, damp walls and clothing, and find entrance into the circulation of both sick and well through the skin and lungs. Koch, and a host of other experimenters, have proven that the germs of disease may be cultivated outside the human body for generation after generation. Many house-keepers have fruitful farms in the dark nooks and corners of their habitations, where crops of disease germs flourish luxuriantly.

In the farmer's home I have seen the weakly colt, calf, or lamb carried to the sunny side of the barn or shed to be revived and invigorated by the sunshine; while in the house the delicate child, sick with croup or pneumonia, was languishing in a dark north bedroom, with damp walls and moldy wall-paper. The shady side of all buildings is more damp than the side exposed to sunlight; on the shady side of streets, contagious diseases spread faster, and are more malignant; on the roofs of houses overshadowed by trees, moss and mold collect, and the homes are rendered unhealthy thereby. The moss and ivy covered towers of some ruined castle sounds well in song or story, and is all well and appropriate for a decaying, uninhabited ruin; but for the abode of active human life, clean, freshly painted walls, and roofs kept in good repair, are more wholesome.

I remember well the remark made by a lady who had lived some time in one of our Western prairie States, where air and sunlight meet with no obstructions. After passing a night with the writer in a room with two large windows, but both covered with a close tangle of vines, she said, "I feel, as if I had been partially strangled during the night." My own sensations were much the same. Florence Nightingale says, "Next to fresh air for the welfare of the sick, I would choose the ability to move the patient from room to room, following the sun from morning until evening."

There are diseases of the brain and eye where only a subdued light can be tolerated. Yet, even in most of these cases, shading the eyes, and turning the light away from the face by arrangement of the bed and adjustment of screens, light and air may be admitted into the room. The patient, exhausted by pain and a sleepless night, may need a shaded room a part of the day for the purpose of rest and sleep;

but when he awakes, the blinds should be opened, and the sunlight let in to enliven mind and body.

The excuses often made for darkened rooms and thick window-shades are, Flies will come in, or the carpets and furniture will be faded. The carpets and upholstered furniture are of rather doubtful utility, especially in all cases of contagious disorders. To save the carpet and furniture from fading, as well as becoming the harbingers of disease, it is better to take them out of the room, and supply their place with something appropriate and convenient for the sick-room, not likely to be injured by sunlight, nor to absorb and retain disease germs.

Wire screens in doors and windows will keep out the flies, and let in fresh air and sunlight. The flies can be seen and driven out, and are not the deadly foes to the children of men that the pestilence which walketh in darkness is. So let the sunshine flood the sick-room, and bathe the body of your patient, and all clothing, bedding, and utensils used about him and in the room. Turn the bed so he will not be forced to face the glare of light from a window or a strong reflection from a white wall. Use your native ingenuity and common sense in changing the position of the couch; and by adjusting screens, turn aside the direct rays of the sun from your patient if necessary, yet have the room enlivened by sunshine.

A bright, sunny room exerts a most salutary influence in cases where the patient is not suffering from any morbid or diseased condition, and only needs to rest for repairs. Such are many surgical cases, and all cases of normal labor. The conditions needed to insure recovery are rest and pleasant surroundings. In sickness the confinement often becomes irksome, and the patient restless at night, and dependent during the day, because the room is kept dark and dungeon like, and no means of diversion is afforded the mind. Open the closed blinds, wheel the patient's bed to the window, and let him view a brilliant sunset or some other pleasant landscape scene, and it is often surprising how soon the demons of unrest and dependency will be exorcised; and days or even weeks of prospective confinement will be contemplated with composure and hopefulness, instead of unreconciliation and gloom. Let the invalid, if possible, have a sunny room, see sunshine and good cheer in the face of doctor and nurse and all

others who may attend him, and on every bright day let him look out on as much as possible of God's great sunny world. Let him have the sunshine of God's love in his heart to rob disease and death of their terror, and much will be done to enable the body to rise above disease, and recover health again, and in many cases the oft-times dreary days of convalescence will be shortened.

THE VEGETARIAN QUESTION.

BY W. MATTIEU WILLIAMS.

In a previous paper I said, "The fact that we use the digestive and nutrient apparatus of sheep, oxen, etc., for the preparation of our food, is merely a transitory barbarism, to be ultimately superseded when my present subject is sufficiently understood and applied to enable us to prepare the constituents of the vegetable kingdom to be as easily assimilated as the prepared grass which we call beef and mutton."

This has brought me in communication with a very earnest body of men and women, who at considerable social inconvenience are abstaining from flesh-food, and doing it purely on principle. Some people sneer at them, call them "crotchety," "faddy," etc., but for my own part I have a great respect for crotchety people, having learned long ago that every first great step that has ever been taken in the path of human progress was denounced as a crotchet by those it was leaving behind. This respect is quite apart from the consideration of whether I agree or disagree with the crotchets themselves.

I therefore willingly respond to the request that I should devote one short paper of this series to the subject. The fact that there are now in London nine exclusive vegetarian restaurants, and all of them flourishing, shows that it is one of wide interest.

At the outset it is necessary to brush aside certain false issues that are commonly raised in discussing this subject. The question is not whether we are herbivorous or carnivorous animals. It is perfectly certain that we are neither. The carnivora feed on flesh *alone*, and eat that flesh raw. Nobody proposes that we should do this. The herbivora eat raw grass. Nobody suggests that we should follow *their* example.

It is perfectly clear that man **cannot** be classed either with the carnivorous ani-

mals nor the herbivorous animals, nor with the graminivorous animals. His teeth are not constructed for munching and grinding raw grain, nor his digestive organs for assimilating such grain in this condition.

He is not even to be classed with the omnivorous animals. He stands apart from all as *The Cooking Animal*.

It is true that there was a time when our ancestors ate raw flesh, including that of each other.

In the limestone caverns of this and other European countries, we find human bones gnawed by human teeth, and split open by flint implements for the evident purpose of extracting the marrow, according to the domestic economy of the period.

The shell-mounds that these prehistoric bipeds have left behind show that mussels, oysters, and other mollusca were also eaten raw, and they doubtless varied the *menu* with snails, slugs, and worms, as the remaining Australian savages still do. Besides these, they probably included roots, succulent plants, nuts, and such fruit as then existed.

There are many among us who are very proud of their ancient lineage, and who think it honorable to go back as far as possible, and to maintain the customs of their forefathers; but they all seem to draw a line somewhere, none desiring to go as far back as to their interglacial troglodytic ancestors, and therefore I need not discuss the desirability of restoring their dietary.

All human beings became cooks as soon as they learned how to make a fire, and have all continued to be cooks ever since.

We should, therefore, look at this vegetarian question from the point of view of prepared food, which excludes nearly all comparison with the food of the brute creation. I say "nearly all," because there is one case in which all the animals that approach the nearest to ourselves—the mammalia—are provided naturally with a specially prepared food, viz., the mother's milk. The composition of this preparation appears to me to throw more light than anything else upon this vegetarian controversy, and yet it seems to have been entirely overlooked.

The milk prepared for the young of the different animals in the laboratory or kitchen of Nature is surely adapted to their structure as regards natural food requirements. Without assuming that human dietetic requirements are iden-

tical with either of the other mammals, we may learn something concerning our approximation to one class or another by comparing the composition of human milk with that of the animals in question.

I find ready to hand in Dr. Miller's "Chemistry," Vol. III., a comparative statement of the mean of several analyses of the milk of woman, cow, goat, ass, sheep, and bitch. The latter is a moderately carnivorous animal, nearly approaching the omnivorous character commonly ascribed to man. The following is the statement:—

	Woman.	Cow.	Goat.	Ass.	Sheep.	Bitch
Water	88.6	87.4	82.0	90.5	85.6	66.3
Fat	2.6	4.0	4.5	1.4	4.5	14.8
Sugar and soluble salts	4.9	5.0	4.5	6.4	4.2	2.0
Nitrogenous compounds and insoluble salts	3.9	3.6	9.0	1.7	5.7	16.0

According to this it is quite evident that Nature regards our food requirements as approaching much nearer to the herbivora than to the carnivora, and has provided for us accordingly.

If we are to begin the building-up of our bodies on a food more nearly resembling the herbivora than the carnivora, it is only reasonable to assume that we should continue on the same principle.

The particulars of the difference are instructive. The food which Nature provides for the human infant differs from that provided for the young carnivorous animal, just in the same way as flesh-food differs from the cultivated and cooked vegetables and fruit within easy reach of man.

These contain less fat, less nitrogenous matter, more water, and more sugar (or starch, which becomes sugar during digestion) than animal food.

Those who advocate the use of flesh-food, usually do so on the ground that it is more nutritious, contains more nitrogenous material and more fat than vegetable food. So much the worse for the human being, says Nature, when *she* prepares food.

But as a matter of practical fact, there are no flesh-eaters among us, none who avail themselves of this higher proportion of albuminoids and fat. We all practically admit every day, in eating our ordinary English dinner, that this excess of nitrogenous matter and fat is bad; we do so by mixing the meat with that particular vegetable which contains an excess of the carbo-hydrates (starch) with the smallest available quantity of albuminoids

and fat. The slice of meat, diluted with the lump of potato, brings the whole down to about the average composition of a fairly-arranged vegetarian repast. When I speak of a vegetarian repast, I do not mean mere cabbages and potatoes, but property selected, well-cooked, nutritious vegetable food. As an example, I will take Count Rumford's No. 1 soup already described, without the bread, and in like manner take beef and potatoes without bread. Taking original weights, and assuming that the lump of potato weighed the same as the slice of meat, we get the following composition, according to the table given by Pavy, page 410 :—

	Water.	Albumen.	Starch.	Sugar.	Fat.	Salts
Lean Beef...	72.00	19.30	3.60	5.10
Potatoes ...	75.00	2.10	18.80	3.20	0.20	0.70
Mean composition of mixture ..	147.00	21.40	18.80	3.20	3.80	5.80
	73.50	10.70	(9.4)	(1.6)	1.90	2.90

Rumford's soup (without the bread afterward added) was composed of equal measures of peas and pearl-barley, or barley-meal, and nearly equal weights. Their percentage composition, as stated in above-named table, is as follows :—

	Water.	Albumen.	Starch.	Sugar.	Fat.	Salts.
Peas	15.00	23.00	55.40	2.00	2.10	2.50
Barley-meal	15.00	6.30	69.40	4.90	2.40	2.00
Mean composition of mixture ..	30.00	29.30	134.80	6.90	4.50	4.50
	15.00	14.65	62.40	3.45	2.25	2.25

Here, then, in one hundred parts of the material of Rumford's half penny dinner, as compared with the "mixed diet," we have forty per cent more of nitrogenous food, more than six and a half times as much carbo-hydrate in the form of starch, more than double the quantity of sugar, about seventeen per cent more of fat, and only a little less of salts (supplied by the salt which Rumford added). Thus the John Bull materials fall short of all the costly constituents, and only excel by their abundance of very cheap water.

This analysis supplies the explanation of what has puzzled many inquirers, and encouraged some sneerers at this work of the great scientific philanthropist, viz., that he found that less than five ounces of solids was sufficient for each man's dinner. He was supplying far more nutritious material than beef and potatoes, and therefore his five ounces was more satisfactory than a pound of beef and potatoes, three fourths of which is wa-

ter, for which water John Bull pays a shilling or more per pound when he buys his prime steak.

Rumford added the water at pump cost, and, by long boiling, caused some of it to unite with the solid materials (by the hydration I have described), and then served the combination in the form of porridge, raising each portion to nineteen and three quarters ounces.

I might multiply such examples to prove the fallacy of the prevailing notions concerning the nutritive value of the "mixed diet."—A fallacy which is merely an inherited epidemic, a baseless physical superstition.

I will, however, just add one more example for comparison; viz., the Highlander's porridge. The following is the composition of oat-meal—also from Pavy's table :—

Water.....	15.00	Sugar.....	5.40
Albumen.....	12.61	Fat.....	5.60
Starch.....	54.40	Salts.....	3.00

Compare this with the beef and potatoes above, and it will be seen that it is superior in every item excepting the water. This deficiency is readily supplied in the cookery.

These figures explain a puzzle that may have suggested itself to some of my thoughtful readers; viz., the smallness of the quantity of dry oatmeal that is used in making a large portion of porridge. If we could, in like manner, see our portion of beef or mutton and potatoes reduced to dryness, the smallness of the quantity of actually solid food required for a meal would be similarly manifest. An alderman's banquet in this condition would barely fill a breakfast-cup.

I cannot at all agree with those of my vegetarian friends who denounce flesh-meat as a prolific source of disease, as inflaming the passions, and generally demoralizing. Neither am I at all disposed to make a religion of either eating or drinking, or abstaining. There are certain albuminoids, certain carbo-hydrates, certain hydrocarbons, and certain salts demanded for our sustenance. Excepting in fruit, these are not supplied by Nature in a fit condition for our use. They must be prepared. Whether we do all the preparation in the kitchen by bringing the produce of the earth directly there, or whether, on account of our ignorance and incapacity as cooks, we pass our food through the stomach, intestines, blood-vessels, etc., of sheep and oxen, as

a substitute for the first stages of scientific cookery, the result is about the same as regards the dietetic result. Flesh-feeding is a nasty practice, but I see no grounds for denouncing it as physiologically injurious.

In my youthful days I was on friendly terms with a sheep that belonged to a butcher in Jermyn Street. This animal, for some reason, had been spared in its lambhood, and was reared as the butcher's pet. It was well known in St. James's by following the butcher's men through the streets like a dog. I have seen this sheep steal mutton-chops, and devour them raw. It preferred beef or mutton to grass. It enjoyed robust health, and was by no means ferocious. It was merely a disgusting animal, with an excessively perverted appetite; a perversion that supplies very suggestive material for human meditation.

My own experiments on myself, and the multitude of other experiments that I am daily witnessing among men of all occupations who have cast aside flesh-food after many years of mixed diet, prove incontestably that flesh-food is quite unnecessary; and also that men and women who emulate the aforesaid sheep to the mild extent of consuming daily about two ounces of animal tissue combined with six ounces of water, and dilute this with such weak vegetable food as the potato, are not measurably altered thereby, so far as physical health is concerned.

On economical grounds, however, the difference is enormous. If all Englishmen were vegetarians, the whole aspect of the country would be changed. It would be a land of gardens and orchards, instead of gradually reverting to prairie grazing-ground as at present. The unemployed miseries of our great towns, the inhabitants of our union workhouses, and all our rogues and vagabonds, would find ample and suitable employment in agriculture. Every acre of land would require three or four times as much labor as at present, and feed five or six times as many people.

No sentimental exaggeration is demanded for the recommendation of such a reform as this.—*Knowledge.*

St. Pierre on Vegetarianism.—The noted French author, St. Pierre, giving in one of his books his views upon national education, thus speaks of the importance of accustoming the young to a simple diet:—

“The peoples living upon vegetable foods, are, of all men, the handsomest, the most vigorous, the least exposed to diseases and to passions, and they are those whose lives last longest. Such, in Europe, are a large proportion of the Swiss. The greater part of the peasantry who, in every country, form the most vigorous portion of the people, eat very little flesh-meat. The Russians have multiplied periods of fasting and days of abstinence, from which even the soldiers are not exempt; and yet they resist all kinds of fatigues. The negroes, who undergo so many hard blows in our colonies, live upon manioc, potatoes, and maize alone. The Brahmins of India, who frequently reach the age of one hundred years, eat only vegetable foods. It was from the Pythagorean sect that issued Epaminondas, so celebrated for his virtues; Archytas, for his genius for mathematics and mechanics; Milo of Crotona, for his strength of body. Pythagoras himself was the finest man of his time, and, without dispute, the most enlightened, since he was the father of philosophy among the Greeks. Inasmuch as the non-flesh diet introduces many virtues and excludes none, it will be well to bring up the young upon it, since it has so happy an influence upon the beauty of the body and upon the tranquillity of the mind. This regimen prolongs childhood, and, by consequence, human life.”

AN EPIDEMIC AND ITS LESSON.

THE town of Plymouth, a small village in Pennsylvania, situated on the banks of the Susquehanna River three miles below Wilkesbarre, has, during the last month, been visited by an epidemic of typhoid fever, which, in the extent of its prevalence, is probably without parallel. Up to the present time more than one thousand cases have occurred, of whom nearly one hundred have died, and several hundred are sick at the present moment. A local physician writes as follows to the *Medical News* respecting the origin and history of the epidemic:—

The ravages were not confined to any class of people, nor to any section of the town, but the dwellers in the mansion as well as in the hovel were alike attacked, the house upon the hillside being not more free from the scourge than that situated in the valley.

The epidemic appeared so suddenly, following upon a few days of warm weather, and the symptoms of those first attacked were so severe, that some diversity of opinion as to the true nature of the disease seemed to exist among the attending physicians. It was variously declared to be typhoid fever, malarial fever, and typho-malarial fever, and typho-malarial-meningitis; but in a very short time its true nature was made manifest, and the doubt no longer existed that a true epidemic of typhoid fever was hanging over the doomed borough of Plymouth. The scourge spread with frightful rapidity, from fifty to one hundred new cases appearing daily, until nearly one thousand persons were affected.

Various theories as to the cause of this outbreak were put forth, the most prominent being that it was due to the accumulated filth of the town, which, being acted upon by the warm rays of the April sun, had suddenly become noxious; but inasmuch as all classes of people were attacked, the clean as well as the filthy, and all parts of the town were affected, the highlands as well as the valley, thoughtful minds naturally turned to the water supply as a possible cause of the invasion. But Plymouth is supplied by a stream of great purity, which comes leaping down the mountain-side a distance of several miles, and is distributed through the various streets by pipes running from the lower of four successive reservoirs, formed by huge dams of masonry across the stream. Occasionally, however, when the water in this stream is quite low, the pipes are supplied with water pumped directly into the mains from the Susquehanna River. This was the case from March 20 to 26; but as the river water at this point is known to be reasonably pure, this fact did not seem to present sufficient explanation of the cause of so widespread an epidemic.

That the mountain stream supplying the town with water might have become polluted by fecal matter, was first suggested by Dr. R. Davis, of Wilkesbarre, in an article published in the *Record of the Times* about May 1. The publishing of the article excited considerable interest, and, as great consternation prevailed among the people upon the subject of drinking water, a committee of physicians, consisting of Drs. J. A. Murphy, J. L. Miner, and myself, was requested by the Plymouth Water Company to make a thorough investigation of its reservoirs

and stream, to ascertain if possible, whether any source of water pollution had existed, and whether the same was now operative. A very careful examination of the stream with its several reservoirs, was made on May 6, and specimens of water from different points were procured for chemical examination.

The Committee found the stream supplied with an abundance of pure water, and no source of contamination at *present* existing; but between the third and fourth reservoirs, in the only house situated upon the stream, and within forty feet of its banks, they found a patient convalescent from typhoid fever. This patient visited Philadelphia on December 25, 1884, and while there contracted the disease. He returned to his home in January, and was quite ill with genuine typhoid fever for many weeks, having suffered from a relapse of the same after he had partially recovered. On March 18 and 19 he suffered from attacks of hemorrhage from the bowels of so severe a type that his life was despaired of.

During the course of his illness, the dejecta passed at night, without any attempt at disinfection, were thrown out upon the snow toward, and within a few feet of, the stream supplying the town, while those passed during the daytime were emptied into a privy, the contents of which *lie upon the surface of the ground*. That this was so done we have from the testimony of the two nurses in attendance, and it is not denied by other members of the household. These dejecta, thrown out from time to time, no doubt accumulated and remained innocuous upon the snow and frozen ground. From March 25 to 31, the temperature, as shown from actual records, was daily above the freezing point, and sufficiently warm to melt large quantities of snow; while early in April we had frequent, light showers of rain, with mild, warm weather. These thaws and rains removed the snow, and with it the accumulated poisonous dejecta, directly into the water supply. Supposing this to have occurred between March 25 and April 5, and allowing from ten to fourteen days as the proper period of incubation, we would expect, from this cause, an outbreak of typhoid fever to occur from the 5th to the 15th of April. The time of the proven contamination of the water supply, allowing the proper time as the period of incubation, corresponds so thoroughly with the onset of the epidemic, that the Committee could but conclude

that in this explanation sufficient cause was found for the epidemic of typhoid fever in Plymouth.

The opinion that this disease, in the present case, came directly from the use of hydrant water from the reservoirs, and not from that pumped from the river in March, was strengthened by the following facts: Six hundred feet below the first reservoir, from which the supply pipes start, there is found upon the banks of the stream a house in which two persons are sick with the fever. The family living in this house dip water directly from the stream overflowing from the reservoir, and have at no time used river, or hydrant water. A little farther down the same stream stands a house in which hydrant water is used, and in this house the sickness prevails; while in another, situated but sixty feet away, and supplied with well-water, all the inmates are free from the disease. A little farther north of these houses there are found, on Temperance Hill, eleven families using well-water. None of these have at any time been attacked. On the upper side of Lee Street almost every family using hydrant water is affected; while those living on the lower side of the same street all use well-water, and none of them are sick.

The same relative state of affairs exists on Davenport Street. Ackley Street, which is supplied with a small pipe and back water, has but few sick, while on Franklin Street, supplied by the regular main, very many are affected. On Franklin Street one house supplied with well-water was found in which two patients are ill; but of these the first to contract the fever was a girl of nine who had been attending the public schools, these schools being supplied with hydrant water. Many cases exist where well-water is used, but it is found that the patients first attacked in such houses are those accustomed to drink water away from home.

Further investigation of numerous cases but confirms the opinion that persons who use well-water habitually, and are suffering with the disease, are those who have been accustomed also to drink hydrant water away from home; the women and children in such houses, except those who attend school, are not attacked.

The editor of the *Medical News*, in a recent journal in commenting upon the epidemic, makes the following very practical observations and suggestions:—

The weight of evidence thus far col-

lected tends to the conclusion that the disease which has prevailed in the town of Plymouth since early spring, is true typhoid fever, caused by the specific contamination of a mountain stream partly supplying the town with drinking water, by the excretions from a case of fever which were deposited on the surface of the ground close to the stream, and washed into the current by the melting of snow and by rains. It had not occurred to the physician and attendants of this case to destroy the specific character of the dejections; otherwise the record of this dire calamity probably would not have passed into history.

The sequel affords a most impressive lesson, though by no means new, as similar and equally conclusive cases have every now and then been brought to public notice. Among these may be mentioned, for the sake of comparison, the outbreak of typhoid fever in the village of Nunney, recorded by Ballard. Here the inhabitants had been in the habit of using the water of a stream more or less polluted for years without causing fever; but when a case had come into the village, and the discharges from this person were washed into the stream, a virulent outbreak of fever occurred. Between June and October, 1872, no less than seventy-six cases occurred in a population of 832 persons. All those attacked, drank the stream water habitually, or occasionally. All who used filtered rain-water or well-water escaped, except one family who used the water of a well only four or five yards from the brook.

The remarkable outbreak of fever which occurred in North Boston, N. Y., in 1843, described by Dr. Flint, is equally instructive. No cases of typhoid fever had ever been reported in the village until the year named, when a traveler, who had been sick several days, arrived at the inn. The evacuations from the fever stricken patient were thrown into a cess-pit in close proximity to a well which supplied most of the village with water. Over half the community were attacked with fever, and all these persons had used water from the tavern well daily. These cases show conclusively that the water produced the disease; and though polluted even with excrement, no enteric fever appeared until the specific agent of the disease was present.

The practical lessons of prevention relate to the treatment of the passages of patients sick with infectious disease, and

the preservation of the water supply from impurities. It is unquestionably the bounden duty of those having charge of cases suffering from diseases transmitted by means of the alvine discharges, such as typhoid fever, cholera, dysentery, scarlet fever, etc., to see that the dejections are wholly disinfected at their very issue from the body. For this purpose, chloride of lime dissolved in soft water, in the proportion of four ounces to the gallon, or corrosive sublimate dissolved in soft water, in the proportion of two drachms to the gallon, are most efficient agents.

The protection of the water supply from impurities involves an exact knowledge and vigilant supervision of the source, collection, storage, and distribution of the supply. Sewage and all foul matter, especially of the excremental sort, should never be permitted to flow into a stream used for drinking water. In the town of Plymouth the small volume of water and the nearness of the points of infection and of distribution, were conditions favorable to a violent eruption of disease. The water supply of large cities is often similarly polluted, but the great bulk of water, by its dilution and other natural means of purification, has doubtless prevented an occurrence similar to that which has overtaken unhappy Plymouth. Nevertheless, the apparent self-purification of running streams which have been certainly polluted in some part of their course, cannot be depended upon as a guarantee that the water is fit for domestic use. Disease germs are very difficult to deprive of their vitality; they may be even frozen, and yet preserve their activity. Admitting the presence of disease germs in water, it may be diluted until the chance of taking even a single germ into the system is so small that it may be disregarded; and yet, if the prevailing theory be true, a single germ, if taken, may produce disastrous results.

The whole subject reverts to the one essential condition of cleanliness as the most certain preventive of disease. The complete and inoffensive removal of all refuse matters as fast as produced, and the rendering innocuous of such matters as are unavoidably detained, are cardinal rules of sanitation. Had the authorities of Plymouth applied these rules, the people of that quiet town would have been spared the harrowing incidents of the past few weeks.

This local outbreak of typhoid fever

above alluded to, furnishes a fresh illustration of the serious consequences which sooner or later follow after a reckless disregard of the laws of health. What has happened at Plymouth has happened before and will happen again. People become accustomed to these occurrences, and pay little heed to the lessons they teach, until the pestilence is at their own doors. Then wisdom is purchased at a terrible cost.

FOOD AND INTEMPERANCE.

It is certain from the researches of modern science, that the office of meat is more that of a stimulant than of absolute nourishment. Precocious development, in many ways, is the direct result of any surplus; and in arranging the system of food for children, this is a point always to be considered and guarded. Allowing no meat whatever till the child is six or seven years old, or till the second teeth come, is a wise rule. After this time it should not be eaten more than once a day, and that in very small quantities. The first effect of meat on any stomach is a stimulating one, of a large amount, a greatly increased secretion of gastric juice, and a resultant sense of dryness in the stomach, which calls at once for drink. Water seldom satisfies. Strong tea or coffee may meet the need for a time; but, as a fact, profuse eating of meat seems to give birth to, and include the necessity for, some form of alcoholic drink. The meat eater in a high civilization craves and takes wine—almost a necessity in the elaborate dinners of many courses; in a lower one, whisky or gin takes its place.

Dr. T. D. Crothers, a scientific observer of causes and results, now Secretary of the "Woman's National Hospital" at Hartford, Conn., writes:—

"The question of physical aids to resolution is comparatively new, but I send you a few practical points: First, foods should always be largely of grains and fruits; wheat in all forms, corn, rice, barley, beans, and oatmeal; soups of meats, vegetables, and grains, without condiments, except salt. Cook as well as possible. Beans and oatmeal are the most nourishing of foods. Secondly, drinks. Besides tea and coffee, which should be carefully made, give in most cases acid drinks. Lemonade is good, but dilute phosphoric acid is equally effectual, and can always be kept in the house, and ten cents' worth would last six months, a few drops in a

tumbler of water being of great value as a tonic. When acids do not agree, try other things. Do not, as a rule, drink ice water; but if it is found more satisfying, put oatmeal in it. Oatmeal water is both tonic and nutritious. Cocoa is nourishing and soothing, and also cocoa-shells."

Air must also come under the head of food, the lungs being diseased and digestion impossible where it is impure; and Dr. Crothers's testimony is in the line of that from many other workers in inebriate homes.

"A window open at night is absolutely essential. If a man gets up in the morning with his lungs choked and his stomach fevered by breathing over and over the same air all night, he will feel that a drink of liquor is the only thing that could possibly freshen him up."

This testimony is one of numberless ones all bearing on the same point. Mr. Charles Groom Napier, in a paper read before the British Association in Bristol, writes:—

"More than twenty years ago, I read in Liebig's 'Animal Chemistry' how the use of cod-liver oil had a tendency to promote a disinclination for the use of wine, and how most people, according to Liebig, find that they can take wine with animal food, but not with farinaceous or amylaceous food. I was at that time a vegetarian, and felt in my own person the truth of Liebig, as did two members of my own family, one in old age and one in middle life. They had for two years adopted the vegetarian diet, and were brought up in the moderate use of alcoholic liquors, for which, after leaving off meat, they felt no inclination. I was induced by this seeming proof of the accuracy of Liebig's theory, to try whether it might not be valuable for the cure of intemperance, and have applied it successfully to twenty-seven cases."

He then describes in full the twenty-seven cases, the details being given in a book called "Fruit and Bread," by Gustav Schlickeheysen, an excellent translation of which has been made by Dr. M. L. Holbrook, of New York. Macaroni, beans, peas, and lentils have proved especially valuable, and should be cooked in the most savory manner, using plenty of sweet oil, or butter, as preferred. "The various garden vegetables are helpful, but a diet mainly composed of them would not resist alcoholic drinking so effectually as one of macaroni and farinaceous food. Highly glutinous bread is of great use from this

point of view. It should never be sour; for sour bread has the tendency to encourage alcoholic drinking. Bread that is imperfectly fermented and liable to become sour is in very common use, and in my opinion, greatly contributes to foster intemperance, as also the use of meat of the second or third quality. The use of salted food tends to promote intemperance, while regular hearty meals, of fresh, wholesome, glutinous food, tend to discourage it."

At a later point he writes: "If we inquire the cause of a vegetarian's being disinclined to alcoholic liquors, we find that the carbonaceous starch contained in the macaroni, beans, or oleaginous aliment, appears to render unnecessary, and consequently repulsive, carbon in an alcoholic form. Liebig says that 'alcohol and fat or oil mutually impede the secretion of each other through the skin and lungs.'"

Much the same ground is taken by Dr. Edward C. Mann, in an address before the American Association for the Care of Inebriates; and the general testimony from all who have had opportunity for large observation and experiment confirms these theories in full.

It must be remembered that every reformed man, or every man attempting reform, is shattered physically. Alcoholism is a disease in itself, and means, in nine cases out of ten, some disease, also, in one organ or another, requiring medical treatment. And with this must come at once a change of habits as to food. How to accomplish this when the wife is as ignorant as the husband, who can tell? The first work of every temperance reformer should be to preach this necessity, and to preach it with such intense earnestness and conviction as to pierce the crust of stupidity, ignorance, and torpor incasing them all. Many can never be convinced, and here, as everywhere, any reform must begin with the children. Give them an industrial training. Let them learn how to make savory and relishable dishes from cheap material. Teach them cleanliness and order. Teach them the laws of life. Make them understand their own bodies, their uses, their sacredness. Nothing but knowledge can be any safeguard, and till that knowledge is insured to every child of the republic, we cannot hold ourselves guiltless if they grow to criminal lives and dishonored deaths.

That they are in the world at all may be one of the countless blunders of the time, which another century may know how to hinder or regulate; but they are

here, and a never ceasing demand upon us for every effort mind can make, or pitying hearts project. And first in any consideration of work for or by them must stand this very question of the food that helps to make them what they are, and of which the old words are as true as in another case: "He that eateth and drinketh unworthily, eateth and drinketh damnation to himself."—*Christian Union*.

WHAT KEPT THEM ALIVE?

"WHY did the survivors survive?" This question was addressed by a friend of the *Companion* to Sergeant Fredericks, one of the six men of the Greely expedition who lived to return home. He had just been to visit his family and friends in Ohio, and looked the ideal survivor; ruddy and robust, packed full of muscle.

He looked puzzled at the question, and so our friend explained a little.

"What I mean," said the questioner, "is this. There were twenty-five of you, all picked men, and you were all subjected to the same hardships. You had about an equal chance for your lives. Why were you six the survivors?"

The sergeant sat silent, as if thinking the matter over. Then he said, "It was our *minds* that did it. We kept up our spirits. We wouldn't give in, but kept talking and telling cheerful stories, and making believe that we had no doubt about our rescue."

That was a very good account of the matter so far as it went, but it did not explain why those six were better able than the rest to keep up their spirits. A few days later, the same friend had the great pleasure of conversing with Major Greely himself, to whom he proposed a similar question.

"What kept you up, Major Greely?" (He is major by brevet, and army etiquette requires that he should be called by his brevet title.) "You are not stronger than the other men, and you had already seen a good deal of hard service. Why did you pull through, when stronger men gave out?"

The answer of Major Greely in substance was this: "It was the feeling of responsibility that sustained me. I felt that I *had* to live, anyhow. I felt that I must stand by the men and fulfill the expedition. A hundred times I should have been glad to die, so acute were my suffer-

ings, but in fact I had too many things to attend to."

This was Major Greely's view of the matter. Some days later, our friend read in the *Boston Journal* another explanation, much more simple, if less romantic. "Of the nineteen men who perished," said the *Journal*, "all but one were smokers, and that one was the last to die. The survivors were non-smoking men."

The *Companion* would be rejoiced to be able to believe this clean-cut and highly effective statement, because we are opposed, and have been from the beginning, to the use of tobacco in all its forms. Upon referring to Major Greely, we find that the paragraph, though not exactly true, yet contains a great deal of truth.

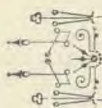
Of the six who lived to see their country again, all were men of the most strictly temperate habits in every particular. Four of them never used tobacco. The two others would sometimes, on festive occasions, to oblige friends, smoke a cigarette or a part of a cigar. They took no tobacco with them among their private stores, and cared nothing for it.

Of the nineteen who perished, the large majority were users of tobacco, some in moderation, some to excess. The first man to die was one who had been in former years a hard drinker, and there is reason to believe that the deaths of several others were hastened by previous habits of excess.

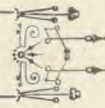
We do not doubt that the non-smokers and non-chewers on this expedition had a positive and very great advantage over their comrades, because tobacco acts as a stimulant upon the digestive powers, and it is the nature of stimulants first to excite, and then to weaken. The excitement is temporary; the weakening is permanent.

Every one must have noticed how uncomfortable a smoker is after dinner until he begins to smoke. The reason is that the languid digestive powers (made languid by frequent stimulation) are waiting to be roused to exertion by the accustomed stimulant. We have not the slightest doubt that men subjected to just such a trial, having to subsist upon shrimps and seal skin, would die about in the order of the strength of their digestive organs.

The sum of the matter is that *all* the virtues, mental and moral, tend to strengthen our hold upon life, and all the vices to lessen it.—*Youth's Companion*.



TEMPERANCE AND MISCELLANY.



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

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

JUDGE NOT.

JUDGE not; the workings of his brain
And of his heart thou canst not see;
What looks to thy dim eyes a stain,
In God's pure light may only be
A scar, brought from some well-worn field,
Where thou wouldst only faint and yield.

The look, the air, that frets thy sight,
May be a token, that below
The soul has closed in deadly fight
With some infernal fiery foe,
Whose glance would scorch thy smiling grace,
And cast thee shuddering on thy face!

The fall thou dardest to despise —
May be the angel's slackened hand
Has suffered it, that he may rise
And take a firmer, surer stand.
Or, trusting less to earthly things,
May henceforth learn to use his wings.

And judge none lost; but wait and see,
With hopeful pity, not disdain;
The depth of the abyss may be
The measure of the height of pain,
And love and glory, that may raise
This soul to God in after days.

— Adelaide Anne Proctor.

DOWN THE GULF.

BY MRS. E. E. KELLOGG.

FROM TAMPA TO KEY WEST.

THAT Tampa, situated on a bay of the same name, is a "place in Florida," is familiar to all the students of geography throughout the country; but the inhabitants of the little town had, for a long period, so quietly pursued the even tenor of their way that little else was known of it until the South Florida railroad recently put it in more direct communication with the outside world, and gave it an impetus to progress. Historically, Tampa is associated with the Spanish conquests of the sixteenth century, being one of the four places of Florida selected by those commissioned to secure some portion of this then new world, as possessing conditions worthy of annexation to the Spanish Crown. At the present time, it is a rapidly growing town of some two thousand inhabitants, with a climate in many respects superior to that of more northern portions of the State; and when its enterprising citizens shall have secured such sanitary conditions as are so sadly needed in the majority of Southern towns, few places in Florida will equal Tampa as a winter haven from Northern snows and storms.

The scenery possesses no striking features, but the absence of natural picturesqueness is partially

atoned for by the wealth of tropical fruits and flowers, which grow here in great abundance; among the former may be mentioned oranges, grape fruits, shaddocks, wild, sour, and sweet lemons, limes, citrons, guavas, bananas, Japanese plums, and pine-apples.

The one attraction in point of beauty is the grounds of old Fort Brooke, occupying a peninsula reaching out into the harbor. The barracks, hospital, and other quaint old buildings are considerably dilapidated; but the gigantic live oaks, with which the grounds are densely wooded, are so heavily hung with draperies of the grey, Spanish moss, that a walk beneath their spreading branches is most strangely weird and suggestive of fairy grottoes hung with waving stalactites.

From old Fort Brooke the view across the bright waters of the bay, with the white sails of the pleasure yachts and fishing boats, dancing in and out amid the green islets that dot its surface, is most charming. Its proximity to the Gulf waters is one of the greatest charms of life in Tampa; the sea breeze tempers the otherwise sultry air, and the numerous steamers that regularly ply between this and other Gulf ports, afford excellent facilities for pleasant excursions.

We took delightful trips during our winter sojourn, to some of the island beaches and points along the coast; and late one afternoon in April we started on a longer voyage down the Gulf; a sail of one night and a day, the monotony of the voyage varied only by the changes of wind and weather and the opportunity we had at one time of watching an immense shoal of porpoises sporting along side our vessel, brought us to Key West. Next to Jacksonville, Key West is the largest city of Florida. The island at the southern extremity of the peninsular State, upon which the city is located, is nearly seven miles in length, but less than two in width. It is of coral formation, and has but a shallow soil. There are no springs, and few wells, and the people are dependent upon cisterns for their water supply. The government has a large apparatus for distilling sea water in case of water famine, which sometimes occurs. The market price of water is one cent a gallon.

Although Key West is one of the enterprising cities of Uncle Sam's dominion, the aspect of its buildings, its vegetation, and its people is quite suggestive of a foreign clime. The one thing that appeared quite too natural was the ever present cigar or cigarette, at one end of which some unwise specimen of humanity kept puffing continuously. Seldom have we seen a sadder exhibition of the excessive use of tobacco than here. Men of all ages, little boys scarcely out of their pinafores, and not a few women and girls, appear upon the streets, at the shop doors, or sit upon their own piazzas, burning incense to the god, Tobacco.

Perhaps it is hardly to be wondered at, since one of the principal industries of the place is the manu-

facture of cigars, upwards of thirty million being produced here annually.

At Key West we saw for the first time the cocoanut palm growing in the open air. It has been said that nature seldom produces a tree so variously useful to man as this. Where it is grown abundantly, its leaves are employed for thatching, its fibres for manufacturing many articles, while its ashes produce potash in abundance. The fruit is eaten raw, and in many ways prepared for food; it also yields an oil which forms an important article of commerce. The milk of the fruit is a cooling beverage, and the woody shell of the nut answers very well for a cup to drink it from. The saccharine juice of the tree also affords an excellent drink; and from the fresh young stems is prepared a farinaceous substance similar to sago. The cocoanut palm possesses so many useful properties that a Polynesian proverb says, "The man who plants a cocoanut, plants meat and drink, health and home, vessels and clothing, for himself and his children after him."

The cocoanut palm is quite as ornamental as useful; it has a tall, smooth trunk, branching out from the top of which is a tuft of long fringed leaves, looking like immense green feathers, several feet long, from among which droops a cluster or two of cocoanuts. The cocoanut as found in commerce is the nut divested of its outer sheath, and is much smaller in size than when seen upon the tree. Picked fresh from the tree, the cocoanut consists first, of a green outer covering; next, of a fibrous coat, which if mature, is hairy-like in appearance; and then, of the woody shell, inside of which is the meat and milk. For household purposes, the nuts are gathered while yet green, and before the inner shell has become solidified; the flesh is then soft like custard, and can easily be eaten with a teaspoon, while a large quantity of delicious, transparent fluid is obtainable from each nut. We drank of the crystal cocoanut water, and ate of the meat in its various stages of growth. Desirous of obtaining a cluster of the nuts to take home with us, we visited a grove on the outskirts of the town, and gained permission to pick one. An active little negro lad promised to secure the cluster for us. Attaching one end of a long rope to his body, he agilely ascended the tree, and after drawing the rope over a large leaf branch for support, tied it around the branch selected, which he then severed from the tree with a sharp knife, while another lad, who held the other end of the rope, gently lowered to the ground the cluster of ten cocoanuts, weighing nearly five pounds apiece.

A large variety of tropical fruits grow upon the island, many of which were new and curious to us. We were also greatly interested in visiting a garden where a banyan, the sacred tree of the Hindoos, seemed to thrive as well as if upon its native Indian soil. We counted thirty large trunks that had formed from the long aerial roots, or stems sent down by the branches, and a number of smaller shoots that will in time reach the soil and take root. The tree already covers a large area, and appears much like a grove of young trees all connected overhead by a net-work of leaves and branchlets.

There are several buildings of interest in the town, including the Fort, Custom House, and Barracks, but they had fewer attractions for us than did the natural curiosities to be found in the vegetation of the island and in the waters of the surrounding Gulf; indeed, the water held for us a charm above almost all else, and we spent several hours of our short stay sailing around near the shores in a small

yacht, fishing up sponges, corals, and sea ferns with the aid of a water telescope (a glass set in the bottom of a bucket, which, held on the surface of the water, enables one to see the bottom forty feet or more below the surface), and a long, slender pole fitted at one end with a double hook. We also caught sea urchins, hermit crabs, fishes, and specimens of the beautiful Medusæ. Seen upon the bosom of the water, the curious Medusæ look like floating mushrooms, some as colorless as crystal, and others striped with blue or violet; upon a nearer view, their delicate, jelly-like structures appear perfect marvels of wonder and beauty. They move about in companies, and by a series of contractions and dilatations of their bodies, make long voyages upon the water. One can scarcely conceive of a more lovely, fragile, flower-like specimen of animal life than these jelly fishes, or "living soap bubbles," as they have been aptly termed.

"A TROUBLER IN ISRAEL."

BY ELEANOR KIRK.

CONTINUED.

THE following day, Nellie's friend, at Mr. Westbrook's request, proceeded to "let out" the much detested garments. As the work had to be done without the invalid's knowledge, and as the lady was very weak and ill, and required constant attention, the work was necessarily slow. It did not take long to give the child relief, however. The fine stitches could wait; but the sore and aching ribs, the confined and suffering lungs, had waited long enough. The child's gratitude and appreciation was so intense that the nurse had more than once to turn her head away to hide the tears.

Mrs. Westbrook would not be likely to discover what had been done till she was about the house again; and if her daughter wished, as she probably did, that this return to health would be indefinitely postponed, who could blame her? Her father would, of course, manage it in some way; but every time he took her part only made it the harder for her during the hours she was obliged to spend alone with her mother.

Nellie went to a private school now, and would have been very happy indeed had it not been for the fact that her beautiful baby brother was ill all the time. He seemed to be in constant pain, and had the most terrible shrieking fits possible to imagine. At such times the mother's suffering was pitiful to behold. She seemed to lose all self-control, and would wring her hands, and even tear her hair in her frantic sympathy and desperation. Nothing would convince Nellie that these attacks were not induced by the tightness and general heaviness of the child's clothes. All her troubles had come from clothes, and why, when the same conditions obtained as in her case, should not the same effects be produced?

On one of these harrowing occasions, when the baby had shrieked until it seemed as if soul and body must part, Nellie had entreated her father to allow her to try her skill upon the child. Such a request seemed ridiculous, even to the father. What could a little girl of that age do in an emergency of this kind? the gen-

tleman asked himself. But when at last every member of the household, and two or three neighbors besides, had failed in their quieting attempts, and the mother had reached the state of frenzy which was sure to follow a prolonged spasm of this kind, Mr. Westbrook placed the baby in his daughter's arms. Nellie had watched the process of dressing too often during the stay of the monthly nurse not to know where buttons and safety pins were located; and so, turning the poor little creature on his side, she deftly removed these hindrances to respiration, and then, passing her hand soothingly over the strained and quivering flesh, brought the baby, as if by magic, out of this fearful convulsive condition into one of perfect quiet.

"It was all a happening," Mrs. Westbrook said, when she was sufficiently recovered to speak.

"O mamma, please do n't put those tight things on my baby brother again," Nellie pleaded, when her father had taken the child from her arms. "He cries because he don't like 'em. I don't like 'em. Nobody likes 'em. He's a boy, and he can have big clothes. Do n't you see? Papa do n't have to wear things too small for him."

"I told you she would dictate to her parents before she wore long dresses," said Mrs. Westbrook to her husband; "and you will observe that her conceit is quite equal to her impertinence."

"You can go out and play, dear, if you like," the child's father said to her kindly, "and I am very grateful to you for helping your little brother so much."

"I think Nellie's suggestion is a good one," the gentleman had the courage to say to his wife after the little girl had left the room. "What is the necessity of swathing him up so snugly anyway?"

"There is an established way of dressing infants," the lady replied, "and I choose to follow it. Moreover, I consider it a subject which neither men nor children have any right to meddle with. And if I don't know enough to properly dress my children, I do n't know enough to be at the head of your house, Mr. Westbrook, and the sooner you say so the better."

What could be said to such a tirade as this? What answer was possible to a kind and honorable man under such circumstances? Here was his wife, pale, ill, quivering in every nerve, so agonized in spirit over this "wee suffering bairn" that she could neither eat nor sleep. How could he seem to be unkind even by persevering in the course which he felt to be right? It was utterly impossible. If his children had to be sacrificed to her mistaken ideas, he must bear it. What else was there for him to do?

In this strange silence which had come between them, Mr. Westbrook recalled the halcyon days before marriage, with their rose-colored prospects and alluring anticipations. He had vowed then that no cloud which he could foresee and scatter should ever overshadow the woman he had chosen for his wife. He must and would keep his word; but oh, how hard it all was! How could he endure to have his little daughter snubbed, humiliated, and ill-treated, and his delicate boy made still more del-

icate by a course of treatment which seemed to him simply inhuman? Nellie was wiser than her mother in many ways, and Mr. Westbrook was perfectly alive to the fact. It was all out of nature; but he had brought the conditions upon himself, and all he could do was to bear them as bravely as possible, and was it, or was it not, right that his wife should be his first consideration.

The above episode occurred when the baby was a little more than two months old, and about this time there was a consultation of physicians. It was an impossibility to find any food that the child could take care of. He would nurse ravenously, and then scream till everybody in the house was worn out. Every day of his miserable little life he grew thinner and thinner, and at two months and a half was nothing but a skeleton. Then there was a consultation of physicians, and the verdict was, Consumption.

"Consumption!" Mr. Westbrook exclaimed, when a few moments later he was alone with the family doctor. "What in heaven's name do you mean? Why should a child of ours be born with consumption? There is no consumption in either of our families."

"It sometimes skips a generation, you know," the medical man replied, "and it has probably done so in this case."

"That's all bosh," said Mr. Westbrook, "and I am inclined to believe that you think so too. If that child is a victim of consumption, the cause is not a remote one. My wife has been ill all the time she was carrying her children. What's the reason of that?"

"Very few women are well at such times," said the doctor.

"Then very few women are well at other times," the troubled husband and father responded. "Is n't the process of bringing children into the world a perfectly natural one?"

"If you were a physician you would think it was anything but natural," was the answer. "It is my intention to quit obstetrical practice as soon as I can, for it worries me more than all the rest of my practice put together. It is a rare thing to find a perfectly healthy woman during pregnancy. That I can assure you. So please do n't imagine that your wife is exceptional in this respect."

"I believe that my wife—perhaps like the majority of her sex, who knows?—has cramped and demoralized her vital organs with tight lacing," said Mr. Westbrook solemnly. "And as I have some reason to think, doctor, that you are not a fool, I feel quite sure that you agree with me. I know very little about anatomy, and not as much as I could wish about physiology; but it stands to reason that such a reckless disregard of the commonest laws of health must result in delicate and diseased children. What else can be expected? And then, when the lacing is continued during pregnancy, what possible chance can there be for the development of a healthy child?"

"You remember the day that we ripped those corsets off of my wife?"

The doctor nodded his head.

"Well, you made light of it, and said that women soon learned to consider their comfort and their health. But you see Mrs. Westbrook has not learned to consider hers, though I have used every means possible to me to enlighten her. I could not throw her corsets into the fire, as I have been sorely tempted to do, nor could I forbid her wearing them. A man cannot treat the woman he has married as if she were a child or a fool, you know. Now this is what is the matter with my baby, and you know it just as well as I do. The mother has cramped herself till she is a chronic invalid. I do n't believe there is a nerve from her head to her heels that isn't askew. The poor little baby had no room before he was born, and consequently no chance for his life since. Now, doctor, as our friend and our family physician, it is your duty to tell these truths to my wife."

"But she cannot bear them now," the gentleman replied with a sigh. "And I don't believe she ever can," he added after a pause, "at least from me."

"She must be told by some one in whom she has confidence professionally," said Mr. Westbrook, "and she believes in you implicitly."

"It is too bad to disturb her confidence," the doctor remarked dryly; "after that communication she never will have any more, and Othello's occupation will be gone. I hope you realize that, Westbrook."

"You do n't mean, I hope, that my wife will send you adrift?" the gentleman inquired.

"I mean just that," was the reply. "When I first commenced practice," he continued, "I went in for all that sort of thing, and waged war especially on that species of vanity which induces women to destroy their health by tight lacing. It did n't work for a cent, Westbrook. In fact, it came mighty near destroying me. I found when I was discharged from attendance on a family on account of truth-telling, that there was always another doctor ready to step into my place, and willing to say precisely what they wanted said. So experience taught me that it was wiser to mind my own business. What possible good could I accomplish when a statement of facts was sure to result in my dismissal? That is the way it will be here; and at the risk of offending you, Westbrook, I am going to add, that it would not be in the least strange or out of the common if the doctor who succeeded me should convince you that I was an old fool, even though you could not forget that I had acted in deference to your wishes."

It was some time before Mr. Westbrook made answer to this. He had been too close an observer of human nature not to know that his companion had good reasons even for this extremestatement.

"Yes," he said at last, "most any man in my position would like to be convinced that his deductions were erroneous. I might not be different from the rest. Who knows?"

This ended the conversation, and also put an end to any hopes that this much perplexed husband and father had entertained in regard to the doctor's successful efforts as a missionary.

When the baby was a little more than three

months old, it stopped trying to breathe. It had been almost as hard a task for the child to draw its breath from the very commencement of the process as for "poor Jo" in his last hours. And when it was all over, everybody in the house and in the neighborhood was thankful, except the mother. The dress-maker draped her in the finest and dead blackest bombazine, and black garments were ordered for Nellie. She stoutly refused to be fitted, and her father was finally sent for to subdue her.

"Has my baby brother got on a black dress up in heaven?" she asked with streaming eyes. "The angels wear white clothes, papa. Why should I wear black? Mamma will wear black because she is sorry. I am glad. Please let me wear a white dress, papa, and my pretty gold chain that baby brother used to take in his little hand and pull so cunning."

Mr. Westbrook went away from this interview with a sharp pain in his heart. How could he force this child into a black dress, and how could he thwart his wife's determination in this regard? He had appealed to his doctor for help, and now he would ask his wife's minister to lend him a hand over this rough place. So he told him how wretched his little girl was over the idea of being dressed in weeds, and asked him to intercede for the child.

"I will gladly do so," said the gentleman heartily. "It seems to me more than bad taste to dress children in black, Mr. Westbrook," he added. "It is wrong, and especially so when a child feels as Nellie does. I am sure I can help you out in this."

TO BE CONTINUED.

BRINGING UP CHILDREN.

THOSE who claim the right of defining it never can say often enough that the true mission of woman is to train up her children rightly, and to make home happy; and no doubt we all agree with them. But have we, or have they, a full sense of what woman requires to fit her even for the first of these duties? Suppose a philosopher in disguise on a tour of observation from some distant isle or planet, should favor us with a visit. He finds himself, we will say, on a spot not a hundred miles from New York or Boston or Chicago. Among the objects which attract his attention are the little children drawn along in their little chaises.

"Are these beautiful creatures of any value?" he asks of a bystander.

"Certainly. They are the hope of the country. They will grow up into men and women who will take our places."

"I suppose there is no danger of their growing up any other than the right kind of men and women, such as your country needs?"

"On the contrary, there is every dan-

ger. Evil influences surround them from their birth. These beautiful creatures have in them the possibilities of becoming mean, base, corrupt, treacherous, deceitful, cruel, false, revengeful; of becoming, in fact, unworthy and repulsive in many ways. Why, all our criminals, our drunkards, liars, thieves, burglars, murderers, were once innocent little children like these!"

"And whether these will become like those, or not, depends on chance?"

"Oh, no! It depends largely on training, especially on early training. Children are like wax to receive impressions; like marble to retain them."

"Are they constituted pretty nearly alike, so that the treatment which is best for one is best for all?"

"By no means. Even those in the same family are often extremely unlike. They have different temperaments, dispositions, propensities. Some require urging, others checking. Some do better with praise, others without: the same of blame. It requires thought and discernment to know what words to speak, how many to speak, and when to speak them. In fact, a child's nature is a piece of delicate, complex machinery, and each one requires a separate study; for, as its springs of action are concealed, the operator is liable at any time to touch the wrong one."

"And mistakes here will affect a child through its whole lifetime?"

"They will affect it through all eternity."

"But who among you dare make these early impressions which are to be so enduring? Who are the operators on these delicate and complex pieces of mental machinery?"

"Oh! the mothers always have the care of the children. This is their mission,—the chief duty of their lives."

"But how judicious, how comprehensive, must be the course of education which will fit a person for such an office!"

"Do you think so? Hem! Well, it is not generally considered that a woman who is going to marry and settle down to family life needs much education."

"You mean, doubtless, that she only receives the special instruction which her vocation requires."

"Special instruction?"

"Yes. If woman's special vocation is the training of children, of course she is educated specially with a view to that vocation."

"Well, I never heard of such a kind of

education. But here is one of our young mothers; she can tell all about it."

We will suppose, now, that our philosopher is left with the young mother, who names over what she learned at the "Institute."

"And the training of children—moral, intellectual, and physical—was no doubt made a prominent subject of consideration."

"Training of children? Oh, no! That would have been a curious kind of study."

"Where, then, were you prepared for the duties of your mission?"

"What mission do you mean?"

"Your mission of child-training."

"I had no preparation."

"No preparation? But are you acquainted with the different temperaments a child may have, and the different combinations of them? Are you competent to the direction and culture of the intellectual and moral nature? Have you skill to touch the hidden springs of action? Have you, thus uninstructed, the power, the knowledge, the wisdom, requisite for guiding that mighty force, a child's soul?"

"Alas! there is hardly a day that I do not feel my ignorance on all these points."

"Are there no sources from which knowledge may be obtained? There must be books written on these subjects."

"Possibly; but I have no time to read them."

your chief mission?"

"No time?—no time to prepare for

"It is our mission only in print. In real life it plays an extremely subordinate part."

"What, then, in real life, is your mission?"

"Chiefly cooking and sewing."

"Your husband, then, does not share the common belief in regard to woman's chief duty."

"Oh, yes! I have heard him express it many a time; though I don't think he comprehends what a woman needs in order to do her duty by her children. But he loves them dearly. If one should die, he would be heart-broken."

"Is it a common thing here for children to die?"

"I am grieved to say that nearly one-fourth die in infancy."

"And those who live,—do they grow up in full health and vigor?"

"Oh, indeed they do not! Why, look at our crowded hospitals! Look at the apothecaries' shops at almost every corner. Look at the advertisements of med-

icines. Do n't you think there's meaning in these, and a meaning in the long rows of five-story swell-front houses occupied by physicians, and a meaning in the people themselves? There's scarcely one of them but has some ailment."

"But is this matter of health subject to no laws?"

"The phrase, 'laws of health,' is a familiar one, but I do n't know what those laws are."

"Mothers, then, are not in the habit of teaching them to their children?"

"They are not themselves acquainted with them."

"Perhaps this astonishing ignorance has something to do with the fearful mortality among infants. Do not husbands provide their wives with books and other means of information on this subject?"

"Generally speaking, they do nothing of the kind."

"And does not the subject of hygienic laws, as applied to the rearing of children, come into the courses of study laid out for young women?"

"No, indeed. Oh, how I wish it had!—and those other matters you mentioned. I would give up everything else I ever learned for the sake of knowing how to bring up my children, and how to keep them in health."

"The presidents and professors of your educational institutions,—do they share the common belief as to woman's mission?"

"Oh, yes! They all say that the chief business of woman is to train up children."

(Philosopher's solo.)

"There seems to be blindness and stupidity somewhere among these people. From what they say of the difficulty of bringing up their children, it must take an archangel to do it rightly; still they do not think a woman who is married and settles down to family life needs much education! Moreover, in educating young women, that which is universally acknowledged to be the chief business of their lives receives not the least attention."

If our philosopher continued his inquiries into the manners and customs of our country, he must have felt greatly encouraged; for he would have found that it is only in this one direction that we show such blindness and stupidity. He would have found that in every other occupation we demand preparation. The

individual who builds our ships, cuts our coats, manufactures our watches, superintends our machinery, takes charge of our cattle, our trees, our flowers, must know how, must have been especially prepared for his calling. It is only character-moulding, only shaping the destinies of immortal beings, for which we demand neither preparation nor a knowledge of the business. It is only of our children that we are resigned to lose nearly one-fourth by death, "owing to ignorance and injudicious nursery management." Were this rate of mortality declared to exist among our domestic animals, the community would be aroused at once.—*Mrs. Diaz.*

WOMAN'S DRESS.

MRS. D. W. REID writes to the *Union Signal*, the organ of the N. W. C. T. U. in the following pointed words upon the subject of woman's dress:—

How few women to-day consider what Frances Willard calls the "religious conformity" of dress! The inquiries which occasionally find their way into our papers from thoughtful mothers, as to the dress, food, and exercise of children, the woman's periodicals in circulation, the pure, helpful books written on subjects of vital importance to women, and the plain words of the medical fraternity, though as yet but ripples on the surface, show the rising of the tide.

Scarce one-fourth of our American women have the physical strength requisite to carry out their plans. They are ambitious, yet sacrifice health and strength to the dictates of fashion. Is it that we do not think? Imagine a man going to his business in the morning with his lungs bound in corsets and his feet entangled in long skirts! Yet in the old Greek times, the dress of woman was far simpler than his. Man has conformed his dress to his needs as a practical worker. If woman is to take her place to-day as a co-worker with him, and is to be able to compete with him in the professions and work of the world, she must emancipate herself from the thralldom of dress.

A woman fashionably attired is ready for nothing but to be looked at, admired perhaps, certainly not to enter with comfort on any healthful amusement or useful work. And here we do not characterize merely those who lead so-called fashionable lives. The great mass of women dress

uncomfortably. They are restricted by the multiplicity of belts and bands in the vital functions of respiration and muscular action, and weighed down and trammelled by heavy skirts.

The woman of to-day has a work to do. She is pleading for the right before the law, reaching out the hand of healing, bringing her utmost strength to bear against the giant evil of intemperance, filling positions of power and responsibility. Her dress should be an exponent of her life,—useful, sensible, practical, adapted in every particular to her physical needs, yet as beautiful as woman's artistic sense of form and color can make it.

"Is not the life more than meat, and the body than raiment?" Let us conserve our forces for the grand work opening before us, and stand before the world strong and free, examples of what common sense rather than fashion can do for woman.

A WORD TO GIRLS.

GIRLS, first make up your minds that you will be something. All the rest will follow. What you shall be, comes more easily and clearly in due time.

A girl of thirteen cannot decide with any discretion or assurance, whether she will be a sculptor or a washerwoman, a farmer or a poet; but she can decide distinctly whether it is her wish or her duty, after leaving school or college, to remain dependent upon her parents, or to fit herself for a self-providing life.

The education by which you mean to get your bread and butter, your gloves and bonnets, is a very different affair from that which you take upon yourself as an ornament and an interval in life. The chemical experiment which you may some day have to explain to pupils of your own is quite another thing from the lesson that you may never think of again. The practice in book-keeping, which may some time regulate your dealings with live, flesh-and-blood customers, becomes as interesting as a new story. The dull old rules for inflection and enunciation fairly turn into poetry, if you hope to find yourself a great public reader some coming day. And the very sawdust of the French and Latin grammar becomes ashes of roses to the stout little fancy that dreams of brave work and a big salary in some foreign department at Washington, or tutoring girls or boys for college.

All over the terrible ocean among the lawless sailors, the men with wives and children to work for are those who lead the gentlest and cleanest lives. So, on the great ocean of school-life, the girls with aims to study for are those whose labor is the richest and the ripest. Ah! you will never realize till you have tried it what an immense power over the life is the power of possessing distinct aims. The voice, the dress, the look, the very motions of a person define and alter when he or she begins to live for a reason. I fancy that I can select in a crowded street the busy, blessed women who support themselves. They carry themselves with an air of conscious self-respect and self-content which a shabby alpaca cannot hide, nor a silk bonnet enhance, nor even sickness or exhaustion quite drag out.—*Elizabeth Stuart Phelps, in St. Nicholas.*

AT CLOSE OF DAY.

If you sit down at set of sun,
And count the acts that you have done,
And counting, find
One self-denying act, one word
That eased the heart of him who heard,
One glance most kind
That fell like sunshine where it went;
Then you may count that day well spent.

But if, through all the live-long day,
You've cheered no heart by yea or nay;
If, through it all,
You've nothing done that you can trace,
That brought the sunshine to one face,
No act most small
That helped some soul and nothing cost;
Then count that day as worse than lost.

—*The Young Reaper.*

Popular Science.

Crinoids.—Growing from the bottoms of the ancient seas, long since obliterated by the geologic changes which have taken place in the earth's surface, there was found a curious class of animals, so closely resembling a flower attached to a long stem, that the fossil remains, which are still found in some chalk and salt deposits, have been familiarly known as stone lilies.

These curious creatures were closely allied to the great family of polyps, but different from the ordinary polyp in the fact that their substance contained a great number of minute particles, secreted by the soft jelly-like animal matter in which they were imbedded. In ancient times, great numbers of these creatures were to be found growing in tropical seas, and a number of species have been made out by examination of the fossil remains, which are found

in different parts of the world. Very extensive beds of these fossils exist in France, the same as in this country. One of the most remarkable in the world is that found at Crawfordsville, Ind., which is owned by Prof. D. A. Bassett of that city.

The fossil crinoid has at the present time only one or two valuable representatives, though anciently the crinoid family were so numerous that its chalk remains form in some places enormous lime-stone deposits. A short time ago we received a box of fossil crinoids, which are among the most remarkable fossil specimens we have ever seen. Prof. Bassett, by whom the specimens were sent, has for many years devoted considerable time to the study of this curious creature, exhuming them from subterranean beds, in which they have been buried for many centuries. Those who desire to obtain specimens of these remarkable creatures in a fossil state, should address for terms, etc., Prof. D. A. Bassett, Crawfordsville, Ind.

The Temple of Baalbec.—Rev. Henry M. Field, D. D., after his return from an extended tour through Eastern countries, has published a book on India and the Holy Land which is both instructive and entertaining. Doctor Field, in a letter to the *Evangelist*, of which he is the editor, thus describes the ruins that mark the place where the grandest of ancient cities is believed to have existed:—

The ruins of the ancient city of Baalbec, situated on the plain forty-three miles northwest of Damascus, are the wonder of modern architects.

Everything is colossal. The area is larger than that of the temple at Jerusalem. We may begin with the walls, which are half a mile around, and of such height and depth as are rarely attained in the most tremendous fortress. Where from within I climbed to the top, it made me giddy to look over the perilous edge to the depth below; when from without the walls, I looked up at them, and they rose high in the air. Some of the stones seem as if they had been reared in place, not by Titans, but by the gods. There are nine stones 30 feet long and 10 feet thick, which is larger than the foundation stones of the temple at Jerusalem, dating from the time of Solomon, or any blocks in the great Pyramid.

But even these are pygmies compared with the three giants of the western wall, 62 feet, 63½ feet, and 64 feet long. These are said to be the largest stones ever used in any construction. They weigh hundreds of tons, and instead of being merely hewn out of a quarry which might have been on the site, and left to lie where they were before, they had been lifted 19 feet from the ground, and there embedded in the wall. Never was there such cyclopean architecture. How such masses could have been moved is a problem with modern engineers.

Sir Charles Wilson, whom I met in Jerusalem, is at this moment in Baalbec. Standing in the grounds of the temple, he tells me that in the British Museum there is an ancient tablet which reveals the way such stones were moved. The

mechanics were very simple; rollers were put under them, and they were drawn up inclined planes by sheer human muscle—the united strength of great numbers of men. In the rude design on the tablet, the whole scene is pictured to the eye.

There are battalions of men, hundreds to a single roller, with the taskmasters standing over them, lash in hand, which was freely applied to make them pull together, and the king sitting on high to give the signal for this putting forth of human strength, *en masse*, as if an army were moving to battle. A battle it was in the waste of human life it caused. These temples of Baalbec must have been a whole generation in building, and have consumed the population of a province, and the wealth of an empire.—*Scientific American*.

To Render Clothing Uninflammable.—

According to a chemical journal, fabrics may be rendered uninflamable by the following inexpensive methods:—

The Chemist's and Druggist's Diary, says Capt. Shean, has the following cheap mode of rendering fabrics non-inflamable: Four parts of borax and three parts of sulphate of magnesia. These salts are mixed together just before being required,—otherwise insoluble borate of magnesia is formed too early,—and then dissolved in from twenty to thirty parts of warm water, in which the fabrics are to be immersed, next wrung out, and then dried. A mixture of sulphate of ammonia and gypsum may be used for coarse fabrics. Mr. A. J. Martin, of Paris, has succeeded in rendering textile fabrics, even such materials as muslin, tarlatan, and lace curtains, uninflamable by the application of the following mixture: Sulphate of ammonium, eighty parts; carbonate, twenty-five parts; boracic acid, thirty parts; borax, seventeen parts; starch, twenty parts; water (distilled or rain), one thousand parts.

The first four ingredients are to be dissolved in one-half of the water, while the starch is boiled in the remaining portion until fully gelatinized; the two solutions may then be mixed, raised to the boiling point, and while hot, applied to the fabrics, or to wool or paper. The former, when partly dried, can then be ironed in the usual way, and will be found incapable of burning. Even on the continuous application of a flame they will not “flare up,” but may, of course, be quietly charred without igniting in the usual way. To render wood incombustible, soak the wood for four or five days in a solution of one pound of alum and one of sulphate of copper and 100 gallons of water. These directions strike me as being very simple and valuable in their application to cases in which risk of fire is incurred in the course of ordinary avocations.

—The oldest and largest tree in the world is said to be a chestnut near the foot of Mount *Ætna*. It is hollow, and big enough to admit two carriages driving abreast through it. The circumference of the main trunk is 212 feet.



GOOD HEALTH.

BATTLE CREEK, MICH., JUNE, 1885.

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

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COCA DRUNKARDS.

THE extensive use of coca among certain tribes, native of South America, has been referred to by numerous travelers in this part of the globe, some of whom have attributed to the plant remarkable strengthening properties, affirming that persons addicted to its use will often travel very great distances, enduring great fatigue and hardships, and performing enormous feats, by the aid of the coca leaves, a few of which they carry as their sole sustenance, extracting the properties of the leaves by making them into small balls with a little lime, which are placed in the mouth and chewed. According to Dr. Hartwig, who has recently written an excellent work, entitled "The Tropical World," the coca-chewer is affected by his practice scarcely less injuriously than the opium-eater. The following is a graphic description of the *coquero*, as the confirmed coca-chewer is called in his native country:—

"He is known at once by his uncertain step, his sallow complexion, his hollow, lusterless, black rimmed eyes, deeply sunk into his head, his trembling lips, his incoherent speech, and his stolid apathy. His character is irresolute, suspicious, and false; in the prime of life he has all the appearance of senility, and in later years sinks into complete idiocy. Avoiding the society of man, he seeks the dark forest, or some solitary ruin, and there for days together indulges his pernicious habit. While under the influence of coca, his excited fancy indulges in the strangest visions, now reveling in pictures of ideal

beauty, and then haunted by dreadful apparitions."

The alkaloids found in tea and coffee are similar in chemical and physiological properties to that of coca, though the grave effects, described as resulting from the use of coca, are rarely seen, probably owing to the fact that theine and caffeine, the alkaloids of tea and coffee, are somewhat less powerful in their influence than the active principle of coca.

POISONS GENERATED WITHIN THE BODY.

AMONG the most interesting results of modern physiological researches, are the curious facts which have been learned respecting the generation of poisons within the body similar to some of the most deadly poisons obtained from various vegetable sources. Oxalic acid with its compounds, oxalates of lime, soda, etc., is a well-known poison. Its presence in the stamens of the pie-plant leaf, gives to this plant its peculiar acid flavor, which has given rise to its use as a food. Curare is one of the most deadly of vegetable poisons, and has for ages been used by some wild tribes for the purpose of poisoning the tips of their arrows, so as to produce paralysis, and consequent helplessness, in persons or animals wounded by them. These, among other poisonous alkaloids, are known to occur in the body, as evidenced by the following paragraph, which we quote from the *Detroit Lancet*:—

"Dr. Golding Bird has described a group of symptoms, including hypochondriasis and depression of spirits, produced by an excess of oxalates, as shown by

their abundant accumulation in the urine. Poisonous alkaloids have been shown to circulate in the blood.

"Bocci (*Arch. per le Scienze Med.*) has extracted from the human urine an alkaloid which has exactly the same action as curare. This alkaloid has the same effect as an alkaloid found by Brieger, to be formed from fibrine by the action of gastric juice. Both of these alkaloids, like curare, act by paralyzing the peripheral terminations of the motor nerves.

"Dr. Brunt shows that the bitterness of gall is not from any normal constituent of the gall itself, but from the admixture therewith of some alkaloidal substance or substances derived from digestion. It is well known that in some cases an excessive languor comes on a couple of hours after a full meal rich in nitrogenous substances. Dr. Brunt (*British Medical Journal*) regards this as due to poisoning from alkaloids formed by imperfect digestive processes. In these cases there is a curious weight in the legs and arms, the patient describing them as lumps of lead. The symptoms are extremely like those exhibited by curare poisoning.

"In some cases, sick headache can be prevented by confining the patient to an exclusive non-nitrogenous (fruit and grain) diet. It is more than probable, Brunton says, that some headaches, as well as languor, are due to poisonous products derived from nitrogenous food. This field of study is just being opened up, and it gives promise of revelations that shall be most helpful to all, in their endeavors to maintain a healthy state of the body and mind."

—A tobacco shop in Philadelphia has a very appropriate sign at its door, consisting of a life size bust of a dilapidated drunkard, with a large rum-blossom on his nose, and a long pipe in his mouth.

—The discovery was recently made in the city of New York, that the milk of dangerously sick cows is regularly sold to consumers.

COLD BATHING.

A WRITER in a late issue of the *British Medical Journal* writes thus respecting the practice of cold bathing, which prevails much more commonly in England than in this country. During the summer season, frequent cold bathing is of very great service as a means of preserving the health, and preventing a large share of the various disorders which prevail at this season of the year.

"The morning bath holds a well-established place among domestic arrangements. Cold water is usually and properly preferred for this purpose by those who can bear it. Apart from its cleansing property, which is valuable as promoting excretion from the skin, and so relieving deeper excretory organs, especially the kidneys, we can by means of cold water apply a degree of cold to the surface of the body which, when suitably regulated, is both salutary and agreeable. Such a shock essentially constitutes a check upon the peripheral blood-vessels, causing their contraction and a concentration of the blood contained in them on the heart and internal organs. Associated with this, and practically inseparable from it, is nervous shock, of which the sensation of cold is the indication. This vascular (or circulatory) repression, however, has its natural and unfailing counterpoise in the reaction by which a healthy heart, stimulated by the temporary and unwonted resistance, redoubles its action to overcome it, and succeeds in flushing anew the surface channels of the circulation.

"We may thus regard the action of cold in moderation, on the muscle of the heart as a means of seasonably exercising this most important of our vital organs, and thus of maintaining its tone. It is clear, from the above remarks, that we do not oppose the practice of morning bathing, but rather approve of it. But a caution must accompany every general statement, and this is no exception.

"There are those whom a cold bath will injure, instead of invigorate. The readi-

est test of benefit is the glow of free surface-circulation, or at least the absence of any decided sense of chill after immersion. Some do not experience this. Among these are the subjects of heart weakness, arising from whatever cause; it may be consequent on organic disease of the heart, on old gout or rheumatism, or on overwork and underfeeding, in which case it is a part of a general debility. Again, there is in some a tendency to engorgement of one or another deep-seated organ with blood, a kidney, the liver, etc. This is commonly the result of a previous inflammatory attack, or of visceral disease at the time existing. Surface-cold aggravates the congestive tendency. Obviously, therefore, such persons, if they bathe, ought to use tepid water; and in renal disorders this method is often advantageous. In slight cases, cold is not injurious if the ablutions be expeditiously gone through, and restricted to periods of summer weather.

"The aged should avoid cold baths, and commonly do. With infants, if ordinary dispatch is used in bathing and dressing, there is no reason to fear them. Their powers of reaction are excellent. We will not say that children suffer seriously from the maternal dread which warms their morning tubful; but they lose somewhat by the want of that salutary exercise of the circulatory organs which we have mentioned. In the absence of actual disease, debility, if present in a decided degree, contra-indicates sudden cold affusion. We say 'decided,' because there are less degrees of atony (want of tone) which are the better for it. These are not far below the level of health, and retain a fair measure of latent energy capable of development. All persons in health and of average strength may use a cold bath daily, in summer at least. In winter, we have mornings of extreme frost, which try the strongest constitution. Only the strongest are likely to benefit by a plunge on these occasions. Fortunately, with us they are rather the exception than the

rule; and for the most part, individuals of moderate powers and free from disease may carry the cleanly practice of summer through the winter months.

"A word on the bath itself. Those who take to it should begin in summer, not winter, and so become gradually accustomed to its lowest temperature. No one should linger over it; three or four minutes are ample. After immersion, the body should be quickly and well dried and rubbed before dressing. Light gymnastic, or dumb-bell, or club exercise may occupy the next few minutes, the clothes being partly on if the weather be cold, and breakfast, or a cup of warm tea or coffee, should shortly follow, to prevent chilling."—*British Medical Journal*.

LATE SUPPERS.

EATING late at night, when the muscular and nervous systems are exhausted by the labor of the day, and then retiring soon to rest, is one of the most active dyspepsia-producing habits to which modern society is addicted. "A tired stomach is a weak stomach;" and in addition, we may add, a sleepy stomach is a sluggish one. Secretion must of necessity be deficient in both quantity and quality, owing to the exhausted condition of the system; and with the further obstacle afforded to prompt digestion by the slowing of the vital operations during sleep, it is almost impossible that there should be other than disturbed digestion and disturbed sleep in consequence. It is under these circumstances that people often suffer with obstinate insomnia, bad dreams, nightmare, and similar troubles, from which they arise in the morning unrefreshed and unrecuperated by Nature's sweet restorer, the work of assimilation, by which repair takes place, having been prevented by the disturbed condition of the nerves.

No food should be taken within three or four hours of retiring. This will allow the stomach time to get the work of digestion forward sufficiently to enable it to be carried on to completion without dis-

turbing the rest of the economy. The last meal of the day, if three are taken, should be a very light one, preferably consisting of ripe fruit and simple preparations of the grains. The custom which prevails in many of the larger cities, of making dinner the last meal of the day, eating of articles the most hearty and difficult of digestion as late as six or even eight o'clock, is one that ought to be discountenanced by physicians. It is only to be tolerated at all by those who convert night into day by late hours of work or recreation, not retiring till near midnight.

Beef Tea and Starvation.—Dr. Austin Flint, of New York City, believes that many persons are starved to death by being fed upon beef tea, the nutritive value of which he classes very low, according to the following report of remarks made by him before the New York Medical Association:—

“With regard to meats, a common error, both popular and professional, and one productive of a vast deal of harm, is to consider their nutritive value as fairly represented by either infusions or decoctions, or by the juices obtained by pressure. The valuation by most persons outside of the medical profession, and by many within it, of beef tea or its analogues, the various solutions, most of the extracts and the expressed juice of meat, is a delusion and a snare which has led to the loss of many lives by starvation. The quantity of nutritive material in these preparations is insignificant or *nil*, and it is vastly important they should be reckoned as of little or no value, except as conducive indirectly to nutrition by acting as stimulants for the secretion of the digestive fluids or as vehicles for the introduction of the nutritive substances. Furthermore, it is to be considered that water and pressure not only fail to extract the alimentary principles of meat, but the excrementitious principles, or the products of destructive assimilation, are thereby ex-

tracted; hence, not very inaptly, beef tea has been compared with urine; and a few years ago a German experimenter, whose name I cannot recall, declared that he produced fatal toxæmia in dogs by feeding them with this popular article of diet.”

“Too Ripe” Bologna.—According to an exchange, a specimen of Bologna sausage recently made quite a sensation in a family in New York. A German made his friend Klabe a present of two yards of Bologna made in a New York factory. (It is not stated whether the mules were of native or foreign growth.)

“Klabe, remarking that the sausage was too ripe for his taste, gave it to a little boy, who was to inter it in an ash-barrel. Young Sobieski Kotankoski, who lives on the second floor, secured the delicacy, remarking that he would regale the household cat with it. The intelligent beast ate heartily, but the Kotankoski dog declined the sausage. Then the biped members of the family turned themselves loose on the remnant of the Bologna, not noticing the agony of the cat, which soon yielded up her nine lives. The entire household was very sick, and Dr. Cyrus Edson, of the Health Board, who called upon them, said that they had altantiasis and butulesmus. At this appalling news the Kotankoskis groaned in concert. The sausage will be analyzed.”

Cheese* Poisoning.—According to the report of the last meeting of the State Board of Health of Mich., V. C. Vaughan, M. D., Professor of Physiology and Chemistry in the University of Michigan, and a member of the Board, has been conducting a series of experiments and researches for the purpose of determining the nature of the poisons in poisonous cheese. As the result of his labors, he has secured a small quantity of the poison in a crystalline form, and the experiments with it show that it produces the characteristic effects of cheese poisoning. Some of the experiments which he has made, show a sim-

ilarity between this poison and some of the poisons which are developed during animal decomposition. The professor expressed the belief that there might be several poisons in poisonous cheese, and among them mentioned buteric acid, which might be present even when the characteristic rancid odor, known as that of buteric acid, was not present, as there are varieties of this acid which do not have this odor.

Distinguishing Genuine Butter.—According to the *Pharmaceutical Record*, an eminent German analyst gives the following excellent way of distinguishing genuine butter from oleomargarine:—

“When true butter is heated over a clear flame, it ‘browns,’ and gives out a pleasant odor—that of browned butter. In heating there is more or less sputtering caused by minute particles of water which are retained in washing the butter. On the bottom of the pan or vessel in which true butter is heated, a yellowish-brown crust is formed, consisting of roasted or toasted caseine. When oleomargarine is heated under similar circumstances, it does not ‘brown,’ but becomes darker by overheating; and when heated to dryness, gives off a grayish steam, smelling of tallow. There is no ‘sputtering’ when it is being heated, but it boils easily. If a pledget of cotton or a wick, saturated with oleomargarine, be set on fire and allowed to burn a few moments before being extinguished, it will give out fumes which are very characteristic, smelling loudly of tallow, while true butter behaves very differently.”

Yellow Fever Vaccination.—Dr. Domingos Friere, of Rio de Janeiro, S. A., announces the discovery that the disease might be prevented by vaccination with the yellow fever virus “attenuated” by artificial cultivation. There has been a general tendency among sanitarians to discard the assertions of Dr. Friere. It seems, however, that the Doctor still

maintains his claim to having made a great discovery, and a recent letter to the editor of the *Sanitary News* reads as follows: “I have great pleasure in informing you that I have already practiced, this year, more than one thousand vaccinations with the attenuated culture of this microbe. The success has been the most complete possible. Not one of the vaccinated is dead of yellow fever, notwithstanding the disease has been malignant and fatal among the non-vaccinated. I hope that my discovery will be practically adopted.”

Snuff-Taking.—Notwithstanding the agitation of the tobacco question, and the constant exposure of the enormous evils of the practice, in some circles tobacco-using seems to be on the increase. The number of tobacco-users among women is undoubtedly much greater than is generally supposed. Not many months ago we were consulted by a lady of most excellent social standing, who desired to free herself from the obnoxious habit of smoking, to which she had been secretly addicted for twenty-years, having resorted to it for the purpose of inducing sleep.

The abominable habit of snuff-taking is, according to the following from an exchange, also more prevalent than most people suppose:—

“Five cents’ worth of snuff,” said a little woman, as she bent over the counter of a drug store this morning, and whispered the order in the clerk’s ear with a mysterious mein. Glancing furtively around to assure herself that there were no witnesses to the transaction, she added: “It’s for another lady. I never use the horrid stuff.” Picking up a little bundle neatly wrapped in white paper, she placed it to her nose to assure herself that it was the genuine article, then flung down a nickel, and hurriedly left the store.

“Here, Johnny,” said the clerk, turning to a boy who was standing behind the prescription case in conversation with a reporter of this paper, “put up some

more snuff. All those packages we made last night are gone already. Hurry! Here's another customer coming across the street. From the way she stares through the door, I judge she wants some snuff. Ah, this is a rushing business!" he continued, aside to the reporter who had let fall his under jaw in utter amazement.

"Who are your chief patrons in this line?" ventured the reporter.

"Why, the ladies, of course. We have no male callers for snuff at all. The men chew tobacco instead. Of course no woman buys the snuff for herself. The purchase is made for a neighbor or a friend. I have seen women come here with the brown juice in the corners of their mouths, and complain of the dirty stuff, which they said they were buying for another woman. The habit, I understand is very fascinating, and when once begun, is more binding than either chewing tobacco or smoking. In its strength to enslave the will, it approaches the power of narcotics."

Rheumatism and Diet.—A sensible writer in an English Magazine makes the following remarks on the relation of diet to rheumatism, which are well worthy of consideration:—

"Rheumatism is, as often as not, caused by over-eating, and especially over-indulgence in meat, which is certain to cause an excess of uric acid, and render the body liable, on exposure to wet or cold, to an attack. We know that old people are proverbially liable to rheumatism. The reasons for this are not far to seek. One is, that joints and ligaments are harder and stiffer, and very often contain deposit—urate of soda. Another is, that as a rule, people up in years eat more than is necessary to support life, under the mistaken notion that they want a deal of nourishment to keep them up. I say that, on the contrary, the wear and tear of tissue is trifling compared to what it is in earlier manhood, and that far less food is required. Therefore, if an elderly per-


son would live long, and be free of aches and pains, and be calm in mind,—for that is a great desideratum,—he or she must live abstemiously, more or less."

Poisonous Carpets.—A lady residing in the town of Chappaqua, N. Y., recently bought in New York City a green carpet. While making it up, she was taken ill with great pains in her eyes, which became blood-shot. Vomiting soon followed. The patient also complained of suffocation. A physician was called in, and soon discovered the cause of the trouble to be arsenical poison contained in the carpet. The patient was very ill, but at last accounts was recovering.


Nutmeg Poisoning.—The *American Medical Journal* gives the following account of poisoning by nutmegs, which would be somewhat startling to persons who are addicted to the free use of this condiment in cooking:—

"Early in December, 1884, one afternoon, a lady ate one and a half nutmegs. About two hours after, she became drowsy, and remained so nearly an hour, the drowsiness amounting almost to stupor. This was followed by an excited condition, with sharp pain in the brain, then involuntary laughter, wild fancies, and incessant talking, without loss of consciousness. Presently pain was felt in the region of the heart, with cold extremities and a depressing sensation. Her face was very pale, and her pulse weak and thready. These alarming symptoms lasted more than an hour, during which time two doses of ammonium bromide were administered. Next morning it was necessary to repeat the dose. Since then she has been unusually nervous."

—A facetious college professor, who believed in the value of pure air, when change of classes in his recitation room took place, used to remark to the janitor, "Please open the windows, and let the remains of the Senior class out of the room."



DOMESTIC MEDICINE.



BALDNESS—ITS PREVENTION AND CURE.

THE mode of formation and growth of the hair is now so well known that there can be no question as to the cause of baldness. It is produced by a failure of normal nutrition in the papilla, or small hair-mold, at the base of each hair follicle. Imperfect work being done in the minute blood-vessels, which are here richly distributed, the cells which constitute a hair-shaft are not formed in their due proportion; the old shaft thus feebly sustained, becomes loose and drops away, leaving nothing in its place. The failure of nutrition may have a sudden cause, of which the effect will be but temporary. For instance, an attack of typhoid fever often leaves the papillæ of the scalp so much enfeebled that rapid baldness ensues. The papillæ, however, still retain their vitality, and as the system regains its strength, they quickly recover their potentiality, and the hair comes again, perhaps thicker than before.

In the same manner certain skin affections may cause the hair to fall by an action on the papillæ which is but temporary; in such cases recovery, perhaps with assistance, perhaps without it, is possible. In the great majority of instances, however, where the head is bald, the failure of nutrition of each papilla has come on so gradually, and has continued so long, that the papilla no longer exists. It has passed away by atrophy; its capillaries have become obliterated, and even the follicle itself no longer constitutes a depression in the skin, and the scalp has the smooth and shining appearance which we so well recognize.

It is easy, therefore, to see that in such a condition as this, no renewed growth of the hair is to be expected; for the anatomical structure which caused its development and continued it, has ceased to exist, and the countless remedies which are so freely advertised as being able to rejuvenate bald heads, are utterly of no avail. They serve only to illustrate the greed and the impudence of the inventors, as well as the credulity of the purchasers. But such is the desire to escape the appearance of "growing old," that no doubt they will hold their ground for all time to come.

But now arises the question, Cannot the application of the various agents to the scalp, at the time when the hair is *beginning* to lose its hold, be of service in stimulating the follicles and papillæ into renewed and permanent vigor? To this question it is not possible, on theoretical grounds, to say "No," absolutely; but in practical fact, that is the only true answer to give in the vast majority of cases. The cause of the falling of the hair has been already stated, and safe reasoning tells us that our only hope can be in that which can restore the failing vitality, and we well know that we should not expect to secure this on any other part of the skin by filthy oils and washes. Proper cleansing of the scalp is as important as it is of all other parts; nothing else should be applied to it but common sense. In many cases of commencing baldness, brisk friction to the scalp, with brushes possessing soft, elastic bristles, does much good. Wire brushes should never be used.

There can be little question that the continued close covering of the head with hats and caps is one very constant cause of baldness. Women, in our own communities, seldom lose their hair, except from sudden causes; and among those nations where the head is habitually left bare, or but slightly covered, baldness is practically unknown. At the same time the beard, which is of the same class of hair as that of the scalp, but which is always uncovered, does not fall with age. A reform in our style of head-gear is very desirable, but it is not at all likely to be accomplished.

The suggestion was some time ago made by some one, that bald heads might perhaps be covered anew with hair by "skin grafting," *i. e.*, applying bits taken from other scalps, and causing them to take root and spread. No doubt such bits might be attached, but the whole matter is merely a wild fancy without practical value. We can make "skin grafts" take hold, but it is only where the skin is destroyed and the surface raw and exposed, commonly rendered so by disease. Assuming that some person (though it is difficult to believe that such a person could be found) would consent to have his scalp peeled away in preparation for the operation, and then assuming that some other

person could be found who would consent to appropriate his own scalp to cutting out the proper bits for the work, yet then the very best possible success, even theoretically, must be extremely imperfect. The denuded surface would heal so rapidly between the "grafts" that no extension on their part could take place, and a head with small specks of hair here and there would be the only attainable result. "Crazy patchwork" is fashionable, but perhaps not many would care to wear it in that way.

The result of all seems to be that when baldness has come slowly and naturally, it has come to stay, and our only wisdom is to be content.—*Health.*

Cure for Ringworm.—The *British Medical Journal* gives the following method of treatment for this disease, which obstinately resists remedies usually employed:—

"The child affected is made to sit down before a wash-basin half filled with warm water. A folded towel is first of all tied around the child's forehead in such a way that no fluid poured on the head can trickle into the eyes.

"It is best to cut the hair short all round the affected part. If there are many spots of ringworm, the whole head may be closely cropped. Have ready a two-ounce bottle of common spirits of turpentine, an ounce bottle of tincture of iodine, a camel's-hair brush, and a cake of 10 per cent carbolic acid soap.

"While the child bends forward over the basin, the spirits of turpentine is freely poured over one or more spots at a time, the forefinger being used to rub the turpentine well into the scalp. Almost immediately the dirt and greasy scabs disappear, and the short, broken hairs are seen to stand up like bristles. Generally in about three minutes' time the child cries out, 'Oh, it nips!' and we know the turpentine has penetrated deeply. Immediately the piece of carbolic acid soap is rubbed well into the parts which have been acted on by the turpentine, and warm water is freely applied to make this soap into a lather, by which means the head is well washed, and soon appears to be beautifully cleaned. The smarting, such as it is, quickly disappears. The head is then well dried with a towel. Common tincture of iodine, in two or three coats, is now well painted over the affected parts, and allowed to dry. As soon as the hair is dry, some carbolic oil (1 in 20) is rubbed through the hair to catch such spores as may be there.

"This treatment, applied every morning, or

morning and night in very bad cases, generally cures the worst cases in the course of a week. During the last five years I have used no other method of treatment. The explanation of its success is as follows: common spirits of turpentine is a powerful germicide, but it is a still more powerful solvent of the sebaceous or greasy matter of the scalp, and it rapidly penetrates into all the epithelial structures of the scalp, the affected hairs included, and clears the way for a more powerful germicide, namely, the tincture of iodine.

"It is an interesting chemical fact that spirits of turpentine, or more correctly, oil of turpentine, is a powerful solvent of iodine. This quickly destroys the fungus of ringworm. If tincture of iodine be applied to the spots which have been treated as above, first with the spirits of turpentine, and then washed with carbolic acid soap and water, it finds its way down into the epithelial structures and hair follicles, following the course which the spirits of turpentine has taken. It is of no use to apply watery solutions of germicides until the sebaceous or greasy matter of the scalp has been first removed.

"In some severe cases, after the head has been washed and cleaned, I have used a solution of iodine in turpentine, ten grains to the ounce, instead of the tincture of iodine; but in most cases the use of tincture of iodine, after the part has been acted on by spirits of turpentine as above described, is quite sufficient to destroy the disease.

"Ringworm of other parts of the body may be treated with spirits of turpentine and tincture of iodine in the same way. One great advantage of this treatment is that it may be used on the head of the youngest child, and causes little or no distress at any time."

Ringworm, Cause and Cure.—This disease of vegetable parasite is very contagious. It is undoubtedly communicated from one person to another by the use of a common comb or brush. It frequently prevails extensively among the inmates of reformatory institutions, and sometimes among school-children when proper precautions are not observed. One of the best remedies is hyposulphide of soda. It should be applied to the affected parts with a soft sponge, after they have been thoroughly cleansed. The application should be made daily until a cure is effected.

Fetid Feet.—To relieve fetid perspiration of the feet, rub the parts with dry carbonate of bismuth night and morning.

Question Box.

Disinfectants—Breathing through the Mouth.—An old subscriber asks:—

1. Where disinfectants are needed, and prove efficacious in a locality, does it follow as a matter of course that the locality at the same time is made healthy thereby?

2. How can the habit of breathing through the mouth be broken up? I am so strongly confirmed in it that in sleep my lower lip will involuntarily drop a little.

Ans.—1. No.

2. This difficulty is undoubtedly due to some obstruction in the nasal cavity, which should be removed by treatment.

Superfluous Hair.—E. L. W. inquires our opinion respecting the following method of removing superfluous hair:—

A paste made of wood, or caustic soda, is left on as long as it can be borne, and then washed off with vinegar to take out the alkali, the application to be made daily.

Ans.—This remedy will remove the hairs, but not permanently. They are taken off close to the skin, but will soon grow out again. The only satisfactory means of removing superfluous hair permanently, is by the use of galvanic electricity, applied to the hair follicles by means of a fine needle. This operation always gives good results.

Cold Foods—Protection of Head.—A patient inquires as follows:—

1. Should persons with slow digestion avoid all cold foods, including cooked fruits?

2. Should persons with catarrh and ear difficulties protect the ears and head in winter, or when under treatment?

Ans.—1. Yes.

2. Yes; the head and ears should be sufficiently protected to insure against cold and damp weather, especially if there is a tendency to catarrhal and aural difficulties.

Impure Water—Filters.—A subscriber wishes to know how pure water may be obtained by those living in cities, where the water supply is liable to be contaminated.

Ans.—Water which is known to be dangerous to health on account of contamination with organic matter, should be avoided altogether. Water which is only slightly impure may be cleansed by boiling thoroughly, and then filtering. The boiling will destroy the animalculæ and most germs, and proper filtration will remove the decomposing matter and foul gases.

Filters are of little use, however, unless made of vegetable or animal charcoal. Those made of sand and stone simply strain the water without destroying the organic matter.

Filters should be allowed to dry every day or two, so as to renew their supply of oxygen, upon which their power to destroy organic matter depends. Foul smelling and hard water should never be used in a filter, as the first fills it with living creatures, for which it becomes a brooding-place, and the second deposits lime in the charcoal, which destroys its filtering properties.

Saliva.—J. C. M., of Mich., asks the following question:—

Should the saliva that accumulates so frequently, when afflicted with indigestion, be spit out or swallowed? Doctors that I have consulted on the subject seem to differ.

Ans.—No harm can be done by swallowing the saliva under the circumstances referred to.

Cubeb Berries—Deafness.—S. E. M., of Iowa, inquires:—

1. Are cubeb berries, either smoked or used as snuff, a useful remedy for chronic catarrh?

2. Does smoking them ever cause deafness?

Ans.—1. Cases of Catarrh are undoubtedly benefited sometimes by the use of this remedy, but there are other less objectionable remedies which are to be preferred.

2. We are not aware that such a result is likely to follow.

Twitching of Muscles.—W. L., of Ind., inquires the cause of a jerking of the muscles of the legs at times.


Ans.—The symptom you name is one of the many ways in which dyspepsia shows itself. Proper care, and treatment for the improvement of the digestion is the best remedy.


Sleeping with Reference to the Points of Compass.—A subscriber wants to know if position in bed with reference to the points of the compass affects the sleeper, having heard that it was better to sleep with the head toward the north.

Ans.—We never have seen any facts which convinced us that this idea was at all reliable.


Test for Hard Water.—A correspondent inquires for a simple test for hard water.

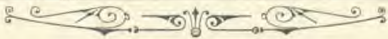
Ans.—Agitate a little soap in the water. If a large amount of soap is required to produce a permanent lather, the water is hard; if only a little is required, it is soft. The degree of hardness is according to the amount of soap necessary to produce a good and permanent lather.





SCIENCE IN THE HOUSEHOLD.





CONDUCTED BY MRS. E. E. KELLOGG.

SOME RECIPES FOR THE USE OF STRAWBERRIES.

Strawberries for the Table.—Says Marion Harland, speaking of how to serve these most delicious of berries, "Never wash strawberries that are intended to be eaten as fresh fruit. If they are so gritty as to require this process, keep them off the table. You will certainly ruin the flavor beyond repair if you wash them, and as certainly induce instant fermentation, and endanger the coats of the eaters' stomachs, if after profaning the exquisite delicacy of the fruit to this extent, you complete the evil work by covering them with sugar, and leaving them to leak their lives sourly away for one or two hours.

"Put them on the table in glass dishes, piling them high and lightly, send around powdered sugar with them and cream, that the guests may help themselves. It is not economical perhaps; but it is a healthful and pleasant style of serving them."

Simple Strawberry Pudding.—Make a jam by mashing fresh strawberries and sweetening to the taste. Spread slices of light whole-wheat bread with the jam, and pile them one above another in a pudding dish. Pour over the whole thin cream sufficient to moisten well; cut into pieces and serve. A simple custard may be used in the place of the cream if preferred.

Strawberry Mold.—Prepare some strawberry juice by putting fresh berries in a jar, and placing it in a kettle of hot water until the juice flows freely from the berries, then strain. Have a half cup of sago soaked for an hour in just water enough to cover. Boil the sago in a quart of the fruit juice until thick like jelly. Pour into molds, put in a cold place, and when needed, serve with sugar and whipped cream.

Wholesome Strawberry Short-Cake.—Beat together one cup of thin cream, slightly warmed, a tablespoonful of yeast, and two small cups of flour. Set in a warm place till very light. Add sufficient warm flour to mix soft. Knead thoroughly for fifteen or twenty minutes. Divide into two equal portions, and roll into two sheets about one-half inch in thickness, making the centers a very little thinner than the outside, so that when risen they will not be highest in the center. Place in tins, and set in a warm place until perfectly risen, or until they have doubled their first thickness. Bake quickly.

Prepare the fruit by chopping or mashing if large, sweeten to the taste, and add a little cream if desired. Spread one cake with fruit, and cover with the other.

The Importance of a Knowledge of Household Hygiene for Women.—In a recent publication, entitled "Women Plumbers and Doctors," we find the following pertinent paragraphs:—

"To the woman whose destiny it is to remain a large share of the time at home, whose divinely appointed mission it is 'to guide the house,' a new sphere of usefulness and efficiency opens with the knowledge that in sanitary matters an ounce of prevention is worth a ton of cure. There is nothing in hygiene that she cannot comprehend; and too often does she realize this and begin to study it, when, too late, she stands beside the still form of some precious one, slain by some one of those preventable diseases that, in the coming sanitary millennium, will be reckoned akin to murders."

"More than four years ago Dr. B. W. Richardson, President of the British Medical Association, said: 'I want strongly to enforce that it is the women on whom full sanitary light requires to fall. Health in the home is health everywhere; elsewhere it has no abiding-place. I have been brought indeed by experience to the conclusion that the whole future progress of the sanitary movement rests for permanent and executive support on the women of the country. When, as a physician, I enter a house where there is a contagious disease, I am, of course, primarily impressed by the type of the disease, and the age, strength, and condition of the sick person. From the observations made on these points I form a judgment of the possible course and termination of the disease, and, at one time, I should have thought such observations sufficient. Now I know them to be but partially sufficient. A glance at the appointments and arrangements and management of the house is now necessary to make perfect the judgment. By this glance is detected what aid the physician may expect in keeping the sick in a condition most favorable for escape from death; and by this is also detected what are the chances that the affection will be confined to one sufferer, or distributed to many. As a rule, to which there are the rarest exceptions, the character of the judgment hereupon is dependent upon the character of the presiding genius of the home, or the woman who rules over that small domain. The men of the house come and go, know little of the ins and outs of anything domestic, are guided by what they are told, and are practically of no assistance whatever. The women are conversant with every nook of the dwelling, from basement to roof, and on their knowledge, wisdom, and skill the physician rests

his hopes. How important, then, how vital, that they should learn, as a part of their earliest duties, the choicest sanitary code!"

Dress in the Kitchen.—"Our Elizabeth looks pretty fine when she comes out on the street in the afternoon, but you ought to see her in the morning in the kitchen and around the house." This was the remark made by a terrible old man, who was a friend of Elizabeth's family, to a young man who aspired to be something more than a friend to the girl. It was true that the young man, seeing her only in the afternoon or evening in silk attire and with glossy braids of golden hair, would hardly have recognized her in the carelessly-dressed girl who ran to hide herself if she heard the door-bell ring, and who did not dare present herself at window or door in the morning. The time consumed in concealing herself was sufficient to have made an elaborate toilet, not counting the mortification she sometimes endured. She was not untidy either in a personal sense, but was simply negligent and careless. There was not the least need of it; indeed, it has always seemed as if Cinderella herself might have kept out of the ashes even if she was obliged to stay in the kitchen and work. To look well while about house-work is worth while. A neat calico dress short enough to clear the floor, smoothly brushed hair, a clean collar, and a plentiful supply of aprons are all within the reach of any woman, and I maintain that she will do her work better, and will feel more like doing it, if so prepared for it. "Dress, indeed," says Mr. Boswell in his superior tone, "we must allow has more effect upon strong minds than one would suppose, having had the experience of it."—*Sel.*

Washing Carpets.—The following is an excellent way to wash carpets that have become too much soiled for cleaning by any other means. Cut the breadths apart. Place one on a long bench or table in the back yard. Go over it carefully, soaping all the spots and more soiled portions; then with hot suds and a scrubbing-brush, scour it on both sides. Rinse thoroughly twice or more with plenty of clean water, using the brush.

To Remove Mildew from White Muslin.—Mrs. H. W. Beecher, in the *Christian Union*, gives the following methods for removing mildew from white muslin:—

1. To be successful and do no injury to the cloth, the mildew should be extracted as soon as possible after it is discovered. It is almost impossible to remove it, if long unattended to, without serious injury to the garment. Mix soft soap and finely powdered starch with half the quantity of salt and the juice of a lemon. It should be as thick as paste. Wet both sides of the cloth in this preparation, and spread it on the grass. Let it lie there day and night till the mildew disappears, renewing the paste two or three times a day.

2. Put salt into tomato juice, and wet the

stain in that. Spread the cloth on the grass, renewing the salt and tomato juice as before, till the mildew disappears; then rinse in clear water, and boil and bleach with the other clothes.

3. Moisten a piece of soap, and rub over the spot, and then spread whiting over the soap. Lay it on the grass in a hot sun, and as it becomes dry, wet the spot, and from time to time renew the soap and whiting.

Rules for Selecting Canned Fruit.—Reject every can that does not have the name of the manufacturer or firm upon it, as well as the name of the company and the town where manufactured. "Standards" have all this. When the wholesale dealer is ashamed to have his name on the goods, fight shy of him.

Reject every article of canned food that does not show the line of resin around the edge of the solder of the cap, the same as is seen on the seam at the side of the can.

Every cap should be examined, and if two holes are filled in it, send the can at once to the Board of Health, with its contents, and the name of the grocer who sold it.

Press up the bottom of the can; if decomposition is commencing, the tin will rattle the same as the bottom of your sewing-machine oil-can does. If the goods are sound, it will be solid, and there will be no rattle to the tin.

Reject every can that shows any rust around the cap on the inside of the head of the can. If housewives are educated to these points, then muriate of zinc amalgam will become a thing of the past, and dealers in "swells" will have to seek some other occupation.—*Sel.*

—Boiling water should not be poured over tea trays, japanned goods, etc., as it will make the varnish crack and peel off; have a sponge wet with warm water and a little soap if the tray be very dirty, and rub it with a cloth; if it looks smeary, dust on a little flour, and then rub it with a cloth. If the tray gets marked, take a piece of woollen cloth, with a little sweet oil, and rub over the marks.

—A mixture of powdered pipe-clay, soap lees, and unslacked lime will remove all grease spots from stone steps if left to dry on. The mixture should afterward be washed off in the ordinary way.

—When the burners of lamps become clogged with char, put them in strong soft-soap suds, and boil awhile to clean them.

Literary Notices.

BERLIN AS A MEDICAL CENTER: By Horatio Bigelow, M. D., Sandy Hook, Conn. New England Publishing Co.

This little monograph is intended as a thorough guide for the American medical student in Berlin. It covers all the necessary details

of a trip to Berlin, embracing the questions of cost, transportation, board, lodging, and tuition, and many other items valuable to a student. It contains a good map of the city, tables of routes of horse-cars and railroads, and altogether will prove a most valuable help to any one intending to go abroad to pursue the study of medicine.

ALL THE YEAR ROUND IN THE RECESSES OF THE ROCKY MOUNTAINS is the title of a very neat little pamphlet, descriptive of Idaho Springs, Colorado, and its advantages as a health resort. The pamphlet is finely illustrated, and may be obtained by addressing box 214, Idaho Springs.

THE BROOKLYN MAGAZINE: Published at Brooklyn, N. Y. Terms \$1.00 per annum, 10 cents a copy.

The June number of the *Brooklyn Magazine* is before us, and is, as usual, well filled with excellent reading matter. Martin Farquhar Tupper, the English poet, opens the number with an entertaining reminiscence paper on the late Col. Fred Burnaby, which is followed by two poems, and three chapters of a new serial story, "Sally," by Mr. G. I. Cervus. The opening chapters of this story, a tale of West Point, are interesting, and give promise of an excellent serial for the summer months. The paper on "Municipal Government" by the Hon. Demas Barnes, will without question attract considerable attention. The author writes with a fearless pen, and shows a spirit of independence not often met with in articles discussing the municipal affairs of a city. Mr. Louis Zemansky continues his delightful descriptions of "Travels in Foreign Climes," while Mrs. Henry Ward Beecher gives several excellent suggestions as to what is necessary to do in the closing of houses for the summer, and how best to protect carpets, furniture, etc. Twenty-five pages of reading matter are printed besides.

POPULAR SCIENCE MONTHLY: Published by D. Appleton & Co., New York. Terms 50 cents a number, or \$5.00 per annum.

There is no magazine on the list of American monthlies which contains in its pages more practical instruction than the *Popular Science Monthly*. The June number opens with a brief article by Henry Gaunett, in which he returns a negative answer to the question, "Are we to Become Africanized?" Professor Benedict, after his preliminary discussions on "The Nervous System and Consciousness," develops his interesting conclusions on the correlations of thought and organization. M. de Laveleye, the Belgian socialist, writes at much length on "The State versus the Man," in answer to Spencer's "Man versus the State." Spencer replies briefly, but very effectively. The discussion is spicy, and helps on the subject. The eminent London biologist, Professor Flower, expounds "Whales, Past and Present," with illustrations, giving much freshness to an old topic. "The

Fuel of the Future," "Sulphurous Disinfectants," "Concerning Kerosene," and "The Mediterranean of Canada," are very readable papers. "The Ways of Monkeys" is an entertaining study in a fascinating branch of natural history; and Professor Grote's "Moths and Moth-Catchers" is a timely paper by one of our first etomological authorities. Mattieu Williams closes his valuable series of papers on "The Chemistry of Cookery" by giving us the chemical story of maltose and the science of puddings and porridges. There are a sketch and portrait of Dr. Alfred Brehm, the distinguished German naturalist and traveler, recently deceased; and the closing departments are full of critical discussion and varied miscellaneous scientific information.

DUXBERRY DOINGS: By Caroline B. Le Row, Boston. Congregational Sunday-School and Publishing Society.

This is a wholesome and interesting story full of practical truths upon every-day topics. The principal characters of the sketch are girls whose life and work are similar to that of thousands in whose hands this little book would be instructive and helpful.

THE NORTH AMERICAN REVIEW concludes its seventieth year with its June number. It never had so large a circulation, nor greater influence, nor a more brilliant staff of contributors. This number discusses seven topics of vital public interest by no less than fourteen eminent writers, not including the short contributions in "Comments." "Shall Silver be Demonetized?" is answered pro and con, by three distinguished economists, Sumner, Laughlin, and Walker, representing Yale and Harvard Colleges, and the Massachusetts Institution of Technology. "The Tardiness of Justice" is discussed by Judge W. L. Learned, and "Prohibition in Politics," by Gail Hamilton; "The Swearing Habit" by E. P. Whipple, and "French Spoilation Claims" by Edward Everett. The policy of the Roman Catholic hierarchy toward our public schools is assailed in a learned essay by a new polemic, Mr. M. C. O'Byrne, of North Carolina, and defended by Bishop Keane, of Virginia, with equal erudition. It is a most interesting double presentation of an impending issue. "How Shall Women Dress?" is answered by Charles Dudley Warner, Elizabeth Stewart Phelps, Dr. W. A. Hammond, Dr. Kate J. Jackson, and Mrs. E. M. King, the English leader of the dress reform movement.

THE SANITARY MONITOR: Published at Richmond, Virginia.

We have received a copy of this new journal which is devoted to the practical principles of hygiene in all their relations. The first number of this enterprise is replete with valuable articles, and we feel sure the *Sanitary Monitor* will prove well worthy the patronage of those who desire to know how to be well and keep so.

Publisher's Page.

Thanks to the activity and energy of canvassers; our circulation, notwithstanding the general depression of business, is now greater than at any previous time. The zeal manifested at the beginning of the year shows no signs of abatement, and encouraging reports are continually being received.

Improvements are still in progress at the Sanitarium. A large room formerly devoted to treatment, is being fitted up as a library and reading-room for employees. A large green-house is being constructed in the rear of the building, and the grounds are being laid out in walks and drives, and will soon be an attractive spot. The green-house will be one of the finest in the city, and is to be stocked with the choicest plants.

Clubs of the American Health and Temperance Association will be glad to know that a little leaflet plan of work, and schedule of programs for meetings has been prepared, and will be furnished to all desiring it, on application to the Secretary, Mrs. E. E. Kellogg, Battle Creek, Mich.

The demand for hygienic literature is increasing everywhere. People are waking up to the importance of taking care of their health. There never was a better time to canvass for *GOOD HEALTH* and to introduce popular works on hygiene among the people than now. Let us scatter broadcast the seed of sanitary reform. As we have often said before, one of the greatest needs of the day is sanitary missionaries who will go from house to house instructing the people on the most vital points relating to sanitary and hygienic reform, and awakening a still deeper practical interest in the subject. If there are among the readers of *Good Health* any young men or women of talent who would like to make themselves useful in the world, we are prepared to give them a chance to work in a way that will do others an inestimable amount of good, and at the same time secure a good pecuniary remuneration for themselves. Let us hear from some who want to work.

A Sanitary Convention, under the auspices of the State Board of Health, is to be held at Ypsilanti on Tuesday and Wednesday, beginning June 30. The object of this Convention is the presentation of facts, the comparison of views, and the discussion of methods relating to the prevention of sickness and deaths, and the improvement of the conditions of living. Among the topics to be presented are the following:—

- Disposal of slops and garbage.
- Drainage and sewerage of Ypsilanti.
- Causes of malaria in Ypsilanti.
- Prevention of communicable diseases.
- Limitations and duties of local boards of health.
- Sanitary conditions and needs of school buildings and grounds.
- Practical details of management of earth closets.
- Influence of sewerage and drainage upon the death-rate in cities.
- Moral effects of sanitation.

Seasonable Advice.—Now is the time for those who wish to keep healthy during the hot weather to make proper preparations for so doing by attending to the condition of their surroundings. Every house and its premises should undergo a thorough overhauling at once, before

the sultry, germ-generating weather comes. Never rest until every nook and corner which can possibly be a breeding-place for germs is thoroughly cleansed and disinfected. Eternal vigilance is the price of safety against the inroads of the enemies of human life which lurk in every dark cellar filled with damp, moldy debris and decaying vegetables, in uncleansed cess-pools and privy vaults, in wells contaminated with organic matter, in unventilated and unshaded sleeping apartments with dark, moldy walls, around back door yards strewn with garbage from the kitchen, wherever there is organic matter undergoing decomposition. Clear out, clean up, ventilate, and disinfect at once, before the fell destroyer gets a foothold in your dwelling.

One of the most interesting places in or about the Sanitarium is the "Patients' Gallery," a little alcove parlor on the third floor of the main building, upon the walls of which are to be seen the faces of scores of old patients and patrons of the institution. The most recent acquisition to this collection is the life-size portrait of Dr. P. M. Lamson, whose modest life and good works will be remembered by those who have been members of the Sanitarium family in years past.

The Sanitarium family enjoyed, a few days ago, a visit from Miss Frances E. Willard, President of the N. W. C. T. U., who lectured in the City. Her ability as a lecturer caused the large hall to be crowded to its utmost, and many were compelled to go away without gaining admittance.

Few women have accomplished so much during a whole life-time, as Miss Willard has done in the cause of Temperance within the last ten years. She has certainly demonstrated the fact that it is possible for women to exhibit the highest degree of executive ability in governing a large number of people. The organization of the W. C. T. U. now comprises more than ten thousand local unions, with a membership of nearly a quarter of a million. It has come to be recognized everywhere as a power and influence which is felt around nearly every hearth-stone, and in the legislative halls. The feature of the W. C. T. U. work which has a special interest to us, is the the Department of Hygiene, in which the organization everywhere are beginning to take a lively interest, and make strenuous efforts to enlighten the masses in regard to healthful modes of living.

The State Convention of the Womans' Christian Temperance Union, which recently convened at Albion, was one of the most interesting ever held. The report of work accomplished in all branches of the Union, far exceeded that of other years, and the outlook for the year to come is more promising than ever. Mrs. Mary T. Lathrop, of Jackson, the excellent lady who for years has held the place of president in the State Union, was again re-elected to that position.

Special attention is invited to the advertising columns of the present number particularly. You will do well to notice the advertisement of Prof. D. A. Bassett, who owns the most remarkable beds of fossil crinoids in the world. A brief description of this remarkable animal appears in the scientific department of this number. Prof. Bassett exhibits remarkable skill in the preparation of these specimens, which are among the most rare geological formations to be found in museum collections.

Attention is also called to the advertisement of Prof. Chas. Dennison's Climatic Maps. These maps are compiled from the official data of the U. S. Signal Service, and will be of special use to those who are interested in climatology and kindred subjects.