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SUGGESTIONS FOR PREVENTING THE SPREADING OF INFECTIOUS AND CONTAGIOUS DISEASES.

BY ALFRED CARPENTER, M.D., C.S.S.; ETC.

(From the Sanitary Record, concluded.)

If isolation can be accomplished without removal it should be in a room situated at the top of the house, the staircase to which should only be used by those tending the sick person. There should be access to a water-closet, if such things are in use, which should only be resorted to by the nurses and for the disposal of the patient's excreta. The windows in the room should be open top and bottom; there should be an unclosed fire-place in it, so that currents of air may circulate freely, and a proper degree of warmth be obtainable at all times. A free ventilation provides a certain means for diminishing dangers; dilution of air brings oxidisation of the floating particles or infectious matter, and dwarfs their growth, for they cannot increase and multiply without material to assimilate to themselves. Albuminoid ammonia is their pabulum.

If water containing albuminoid ammonia and other ammoniacal compounds is passed through a few feet of earth, the noisome elements which would, under some circumstances, spread disease are changed into nitrates and nitrites, and become perfectly harmless. They are oxidised by contact with the oxygen contained in the earth, and their noisomeness is destroyed. A similar result arises with germs of mischief when circulating in the air; the ammonia is removed, ozone acts upon the albumen, and dilution, if carried out to a sufficient extent, is destruction.

All curtains, carpets, and unnecessary articles of furniture should be removed from the room which is occupied by the patient, and no direct intercourse be kept up between the inmates and the rest of the house. A sheet should be hung up outside the door of the room, and, if possible, a second sheet a few feet from the first, so that when one is moved aside the other should be closed. These sheets should be kept quite damp by having them frequently

sprinkled with water containing carbolic acid or chloride of lime in solution. A gallon of water, in which a pound of lime is diffused, or a quarter of a pint of carbolic acid, will, by evaporation from the sheet, produce a condition of atmosphere which will help to dwarf any particles of diseased matter. Such things may accidentally escape from the room by the door into the passages leading to the rest of the house. The floor of the room which is occupied by the patient should be carefully examined, and be freely beeswaxed, so that all crevices between the boards may be closed; it should then be frequently sprinkled with some of the solution, and cloths dipped in the same hung about the room.

The bed and body linen which have been used by the patients should not be taken from the room until they have been dipped into a solution of carbolic acid of similar strength to that just recommended. They should remain in the water at least an hour, and afterwards should be boiled in abundance of water. At the same time, it is better not to preserve any article (especially in bad cases) which is of slight consequence; pieces of rags should be used instead of pocket-handkerchiefs; old rags and woollen cloths retain the infection very readily, and it is better to burn up such things after use than to preserve them. In support of this view I may mention the following circumstances, the facts of which were communicated to me by the medical man in attendance. The island of Mull is on the west coast of Scotland, very bleak, and with an exceedingly scattered population. Small-pox made its appearance at some shanties or mud huts at a long distance from any other place, but when it was also present upon the mainland. The huts were deserted by the inhabitants, they became dilapidated, the roofs fell in, and the ruined walls were exposed to the elements for some time. The property changed hands, and three years afterwards the new owner sent a gang of men to clear away the ruins for the purpose of building some decent cottages at that place. The men employed on the work fell ill with small-pox. The same medical man being called from Oban to attend them, recollected the former cases at the same spot, and he came to the conclusion that some old rags which had been turned out from the ruins had contained the foci of disease, and had infected the new comers. Dr. McGillivray, the medical attendant on the cases, informed me that he was not aware of any other cases of small-pox at that time in that part of Scotland.

These facts teach us several important lessons. Persons in attendance on the sick should not wear woollen garments or any material which cannot be washed or easily exposed to a degree of heat sufficient for the destruction of adhering particles of mischief. Cotton dresses should always be worn in the sick room by the attendants. They should also wash their hands immediately after attending upon a sick person. It is also better for them to use carbolic soap instead of ordinary soap. For similar reasons it is of the greatest importance that the sick room should not be frequented by any persons who are not in immediate attendance upon the

patient. The clothing of visitors is liable to carry away infection, and all should be rigorously excluded except for very special reasons. If obliged to enter they should prevent their clothes coming in contact with the patient or the bed upon which he is resting, and before entering another house it is always prudent to walk some distance in the open air.

In a majority of cases of infectious disease the greatest danger is derived from the excreta. Everything which passes from the sick person should be put into vessels containing a solution of sulphate of iron—green copperas it is commonly called. It acts most decidedly and most certainly in deodorising and disinfecting organic matter. A pound of copperas, which costs a few pence, should be dissolved in a gallon of water, and all discharges which come from the patient and all washings should be at once mixed with some of the solution. Some of it should be put into vessels into which they are received, and some more cast over them before they are thrown down the water-closet, and every closet, or sink, or privy, into which discharges of any kind are thrown, should have a quantity of the copperas solution poured down it daily so long as it is used by the patient or the nurses. It is highly important that this rule be specially adhered to. It is sometimes the custom for the excreta to be buried in the garden; this is not always sufficient unless much care is used, for fowls and other birds may disturb it, or rats or other vermin carry it away before its danger is destroyed. It is far safer to act upon it at once with a solution of sulphate of iron, and then no danger can arise. These are all matters which are fairly within your province to enquire about, and to give instruction to those whose duty it is to take care of the sick.

There is also another point of some importance to nurses and the friends of a sick person. All cups, glasses, spoons, and other articles used by the patient should be washed in a solution of carbolic acid; no food or drink which has been tasted by the sick person or that has been kept in the sick room should ever be taken by any one else. It is unwise to keep food there at all, except such as is required for immediate use. This applies especially to milk. There is no kind of food more useful than milk. There is no kind which absorbs infectious matters more certainly. If vessels containing milk are kept in a room in which there is a scarlet or typhoid fever patient, or if the gases from a sewer into which the excreta of such patients have been discharged without having been disinfected find their way into a dairy, the disease in question will be distributed by the milk, and a severe epidemic may be produced. I have known several instances of outbreak of disease which could only be fairly explained on this theory. It is all but impossible to prove it by absolute experiment, because the cause is generally removed during the stage of incubation, and when the disease appears has ceased to be in operation.

Nurses and all attendants upon persons who are sick, should be careful to wash their hands before taking food themselves. The

Mosaic custom on this point should be rigidly enforced. This is especially the case in typhoid fever, cholera, and scarlatina.

The patient having been removed to the infectious wards, or if the case has been treated at home and he has recovered from his illness, you will have sometimes to advise what is to be done to the patient himself as well as to the room he has occupied. His own disinfection is not exactly within your province, but I will tell you the advice I generally give when I speak upon the individual cases. After the patient has been removed, all the articles of bedding, and such clothing as will not bear washing should be hung about the room; you should then close up the fireplace, windows, and doors, so that all external air may be excluded; then take an ordinary spirit lamp with a cotton wick, or still better, one of the lamps which Mr. Keats has specially designed for the purpose, put into it about four ounces of sulphide of carbon, place it on a stone slab in the centre of the room, light the wick, shut the door carefully as you leave the room. The air of the room becomes pervaded with sulphurous acid, and all organic matter in the room is completely disinfected by it. Failing the lamp and the sulphide of carbon, you may obtain the same result by breaking up a quarter of a pound of sulphur into small pieces, put them into an iron dish, sling it over a pail of water in the middle of the room, and set the sulphur on fire by putting some live coals upon it. The room must then be completely closed up, and allowed to remain so for twenty-four hours. If you use the sulphide of carbon you must be careful, as it is highly inflammable; but it is very cleanly, and quite easily applied. The room may be opened the day after, and the doors and windows thrown open, and a good fire made. The ceiling should be lime-whited, the paper scraped off the walls and burnt, and all the woodwork well washed with soap and water. The floor must be scraped, the crevices between the boards cleaned out, and then well washed with solution of chloride of lime, and until these processes are completed to the satisfaction of a medical practitioner the room must not be again occupied. It is highly important that this rule should be adhered to, and all houses which have become vacant immediately after a case of infectious disease has occurred in them must be watched by the inspector, and it is his duty to see that they are not again let by the landlord until the law has been complied with; and also all rooms which are let out to lodgers, and hotels or places of public resort, must be disinfected when cases of infectious disease have occurred there before they are again occupied. It is clearly your duty to put the law in force against the offender wherever you have reason to believe that it has been infringed, and you ought in every case to take care that the penalties are pressed for; much mischief has resulted from persons innocently going into danger without any warning from those whose interest it was to keep the fact of infectious disease having occurred in the place a secret from the new comers. The full penalty of 20*l.*, to which the landlord has subjected himself, or even at times committal to prison,

which is at the discretion of the magistrate who hears the case, is none too severe a punishment to inflict upon those who wilfully break this law.

The next point to which I may now direct your attention is the attendance of children at school. I have suggested that you should be in frequent communication with the masters and mistresses of elementary schools, so that you may know what children are absent on account of illness. You may also warn them that infectious disease exists in such-and-such a house, and that children from that particular house or court should be excused attendance at school until they are certified to be safe. Many serious epidemics have had their secondary impetus from the attendance of an infected child, and disease has been by its means spread over a very considerable area.

If the case has had a fatal termination you should visit the place as quickly as possible, and see that the body be not removed from the room, except for burial. The body should be put into a coffin as soon as possible, with plenty of powdered charcoal on the bottom of it, and some carbolic acid powder sprinkled over the body. The coffin should then be at once fastened down, and buried as soon as possible. If the bed and the mattresses upon which the death took place have been soaked by discharges from the patient, it is best to burn them without delay, with all coverlets and cloth articles of clothing which will not wash easily. Local authorities have the power of doing this and recouping the poor the value of the article destroyed. It is better that an excess of caution should be used in this direction than that any risk should be run. Many cases of puerperal or child-bed fever have been caused by a neglect of this rule. A poor person often reserves the bed or mattress which has been out of use for her confinement; she is more prone at that time to take an infectious disease. The virus capable of producing it remains in the bed, and soon after her confinement she succumbs to its influence.

It is not necessary, however, to burn up all things which have been infected or exposed to the chance of infection. I mentioned that heat destroys all germs of disease, and every sanitary authority should have a disinfecting apparatus at command, in which articles of clothing, sheets, articles of furniture, books, carpets, and other things capable of bearing a heat of 300 degrees, could be baked. There is one which has been arranged by Fraser Brothers, which is very useful for the purpose. I suppose the Northampton authorities possess such an one; if they do not, I should strongly urge them to have one put up for public use. Much good results from the use of such an apparatus, and much valuable property may be preserved from destruction. It is necessary that the articles should remain in it long enough to have the whole of their structure raised to a temperature of 300 degrees, otherwise some particles of mischief may escape destruction. Feather beds and such like especially require to be kept in the apparatus for a long time. It is best to place a

thermometer in the middle of such articles, and not have them removed until it is shown that the proper temperature has been reached.

I will now say a few words regarding the disinfection of individuals. Those patients who give off scales of excreta from the skin, such as small-pox and scarlet fever, should have the body smeared over with some fresh pure oil or lard, so that the particles may be arrested from floating away in the air. Warm baths should be used every day during the progress of recovery, and every means taken to retain the desquamating skin within the sheets, and when the latter are removed they should be at once plunged into the solution of carbolic acid or chloride of lime formerly mentioned. When the patient is sufficiently recovered to bear it, he should be bathed in water containing a quantity of Condyl's Fluid, an ounce to a gallon. The hair should be cut short, the head freely washed with the same solution, the nails of both hands and feet cut, and Condyl's solution or carbolic soap rubbed in beneath them. If the whole of the skin has exfoliated, as in scarlet fever, or if the scales have all been removed if the case is one of small-pox, there will be no danger whatever after this treatment in the patient mixing with his fellows. It is the custom to speak of a quarantine of a month after recovery from infectious disease before a patient may mix with other people. This quarantine is highly injurious to some people, and it is not necessary if the rules I have laid down are carefully followed in the diseases I have mentioned, and if care is taken in regard to the excreta, so that they are disinfected, is any danger likely to arise in other cases.

I need scarcely urge upon you the necessity of re-vaccination in outbreaks of small-pox; a house to house inspection is absolutely required whenever a fresh case of small-pox appears in a new district, and all those adults who have not been efficiently re-vaccinated should be urged to protect themselves in that way. There is one fact with which you ought to be acquainted, which is that no person who has been engaged as a nurse at the Small-pox Hospital is allowed to enter upon her duties until she has been re-vaccinated, and no nurse has fallen ill of small-pox in that establishment during the last forty years.

Time warns me that I must conclude. I thank you for the patient hearing you have given me, and if my observations are of service in preventing the spread of disease, I shall be amply rewarded.

POISONOUS WALL-PAPER.—In a lecture on 'Poisonous Wall-Paper,' delivered a short time since before the Manchester Chemists and Druggists' Association, by Mr. Siebold, the lecturer stated that out of sixty or seventy papers of various colors—blue, red, brown, pink, etc.—analyzed by him, ten only were harmless, the rest containing arsenic. The result, therefore, of Mr. Siebold's investigations should have the effect of rendering the heads of families suspicious of some of the most innocent looking colors.

ON SUGAR ADULTERATION.

As this subject is being discussed somewhat at the present time, we give the following article upon it, from the pen of Prof. Henry Morton, Ph.D., in the *Plumber and Sanitary Engineer*.

My attention has recently been directed to a series of anonymous articles appearing from time to time in various daily papers, which, while differing in many respects, have certain marked characteristics in common.

While no one could feel more interest than I do in the suppression of fraud and adulteration in the refining of sugars or in any other business, I am for that very reason extremely disgusted at seeing the cause of true reform disgraced and hindered by such proceedings as these, which can by no possibility lead to any good end when so conducted, but simply throw discredit on the honest and judicious efforts which are being made by men of position and character in the same direction.

With this view of the subject I consider it my duty to expose the false statements and suggestions in reference to scientific facts which I find in these articles, and thus do what I can towards the prevention of an unfounded public opinion, which if once established may be very mischievously utilized by designing men in various ways.

In the first place, then, I find repeated statements or suggestions that glucose is a very unwholesome substance, and has no business to be found in sugar unless it has been artificially prepared from starch, corn or the like, and added to the sugar by the refiner. To make clear what are the facts in this connection, I will explain briefly what glucose is and what are its sources :

At the outset I should say that glucose can exist in two states, differing from each other in sweetness and in the power of rotating the plane of a ray of polarized light. That rotating the plane in the direction in which the clock hands move is called dextro-glucose or dextrose, that rotating the other way lævo-glucose or lævulose.

Now it is believed that all sugar in the sugar-cane is first formed as glucose, (probably as a mixture of both kinds) and changes into sugar as the cane ripens. All cane juice at all events contains some of it, and if the juice is allowed to stand untreated, the sugar rapidly reverts to the condition of glucose, and with all the care and all the appliances which modern science and art place at our disposal a considerable conversion of sugar into glucose is sure to occur during manufacture.

When this conversion of sugar into glucose, or as it is technically called "inversion of sugar" occurs naturally, as above, the products consists of dextrose and lævulose in such proportions that its influence on polarized light is nothing, or the two opposite rotations neutralize each other, but if this inversion is effected, as it may easily be in a very short time by boiling a sugar solution with a minute quantity of hydrochloric or other strong acid, then the lævulose so far predominates in its optical effect as to give a resulting left-hand

rotation equal to about one-third of the right-hand rotation due to the pure sugar originally. Of the two kinds of glucose the *lœvulose* is sweeter and does not crystalize; the *dextrose* is less sweet but may be orystalized with difficulty. Hence as this inverted sugar would render the sugar moist, if left in it must be removed from hard sugars, and it will moreover dissolve the coloring matters and thus acquire a dark color.

In older processes of sugar making or refining, a light color was chiefly obtained by crystallizing, and draining or washing away the coloring matters and glucose together; hence a light colored sugar was of necessity free from glucose. Recently however what is known as the "Scotch" method has been largely adopted. In this method by a free use of bone black the coloring matter has been largely removed from the glucose, and then the crystallization and drying so conducted as to leave this in the sugar.

By this means a product is obtained of a light color and yet containing all the glucose that in former times would have been found in a darker sugar. As this sugar is sold at a much lower price than it would cost to make the old sort, it seems to me that the thanks of the consumer are due to the manufacturer for what he has done in this direction, unless it can be shown in some way this glucose is injurious.

Let us see, then, what are the facts on which an opinion can be based in this respect.

1st. Glucose, *i. e.*, a mixture of *dextrose* and *lœvulose* constitutes the sugar of all sorts of fruits. 2nd. The first step in the digestion of sugar, is its conversion into glucose in the stomach. If, therefore, glucose will hurt us, we must never eat any sugar. 3rd. Starch is converted into glucose with great rapidity by the action of the saliva. If we chew a little bread for a minute, spit it out and test it for glucose, we will find this body present in appreciable quantity, even in this short time. In fact, the first step in the digestion of starch, as well as of sugar, is its conversion into glucose. Starch being our principal vegetable food, it is therefore evident that we must give up all vegetable diet to escape from this glucose if it is injurious.

These facts above stated will be found in every work on Physiology, but for ready reference we would refer here to Johnston's Encyclopedia, 1878, article Digestion, by Dr. C. W. Greene, and to Foster's Physiology, Macmillan and Co., 1878, page 188.

Having thus disposed of the nonsense which has been written about the injurious or non-nutritious properties of Glucose, I will next turn to the question of Muriatic Acid.

Muriatic Acid, if present in sugar, will rapidly modify it, turning it into glucose and impairing its color, so that any manufacturer who put it in would very soon find out his mistake by having his sugar returned to him, and he would either reform his methods or be driven out of business in short order.

But in the meantime, would the community be poisoned or have "holes eaten in their stomach like copper boilers?"

If there was acid enough in the sugar to set one's "teeth on edge," anyone who was foolish enough to eat such stuff, would, of course, injure his teeth and might not find the sugar agree with him any more than too much vinegar or too many pickles. But he would not be poisoned. Muriatic acid is in no proper sense a poison, any more than is vinegar or acetic acid.

Strong acetic acid if swallowed in quantity, would be fatal; but if diluted, as it is in vinegar, it is harmless. Just the same is true of muriatic acid. The best proof of this is that muriatic acid constitute an essential part of the gastric juice.

Now, be it understood, that I would not for a moment defend the use of muriatic acid in sugars. It would be bad policy on the part of the manufacturers, and would be making an article liable to deteriorate. But while this is so. I would also deprecate the ignorant and malicious attempt to frighten the public at large with the false assertion that they may be poisoned before they know it by muriatic acid in their sugar. This is at best a foolish bugbear, and if asserted by anyone who has any pretensions to scientific knowledge, is very disgraceful.

By all means expose the names of those manufacturers who put muriatic acid in their sugars, if there are any who so do; but leave out the nonsense about eating holes in the stomach like copper boilers.

In this respect it can only be dangerous to those whose brassy exterior argues a copper substructure.

As regards chloride or muriate of tin:—This also should not be tolerated in sugars in any appreciable amount, and as it might by accident, if used at all, be sometimes left in dangerous quantities, it would be best to forbid its use, as the use of lead for a like reason has been forbidden in France. But here also no needless fright should be stimulated. If a sample of sugar contains so little tin that a chemist can only find a trace, and cannot get a weighable quantity from ten pounds of sugar, no one need fear lest he should acquire "a tin lining in his stomach" by eating such sugar.

If sugars are found containing dangerous amounts of tin, let their manufacturers be exposed by all means; but let this be done in a sensible way, and not by setting a lot of ignorant newspaper reporters scribbling about what they do not understand, and making dark and mysterious suggestions which have all the characteristics of black-mail.

Many years ago an enterprising firm went into the manufacture of water pipe lined with tin, and secured the services of a chemist, not unknown to a certain sort of fame, to persuade the public that they were being poisoned by the lead pipe then in use. From what was then said and written, a credulous person would have been convinced that the entire population of New York had been poisoned long ago, and ought to have taken up its abode in Greenwood years before. Lead pipes, however, are still used, and New York still seems fairly populous.

The poisonous properties of tin were not then ventilated, but its

turn has come now, and we should not be surprised to see the tin-pan and tin-pail and tin-dipper and tin-man held up by the horrified reporters to the indignation of a deluded public, as soon as this sugar business has been exhausted of its popular interest.

DR. WM. FARR ON TRUE TEMPERANCE.

We (*Medical Times and Gazette*) lately noticed the Thirty-ninth Annual Report of the Registrar-General, and intimated that there was in it a letter by Dr. Wm. Farr on the causes of death. This treats effectively of the use and abuse of alcoholic liquors. This letter has its full share of Dr. Farr's characteristics as a writer: the flavour of classical erudition, and the apt and ready quotations which remind us of the days when physicians could truly be called learned; the subtlety and acuteness in exposing errors, only equalled by the gracefulness and neatness which leave no rankling wound, and the sterling vein of good sense fortified by long experience in the art of medicine, and in dealing with the theories which from time to time enlighten or obscure it.

To begin with: Dr. Farr demolishes a fallacy which has obtained extensive circulation of late; it is that the working classes are becoming more and more intemperate, and that high wages are squandered in drink. 'In the three years (1871-73) of high wages in the manufacturing districts, the proportion of deaths by alcoholism is low. The deaths by drink rose, on the other hand, in the three years (1874-76) of depression, probably because some sought consolation in drink, because the hours formerly spent in the workshop were spent in the public-house, or because the previous habits then began to bear fatal fruit. The fact remains, independently of any theory, that in three years of hard work and high wages—three years of prosperity—2230 people died of drink; while in the three years or idleness and reduced wages—three years of adversity—3316 died of the same causes, delirium tremens and other results of intemperance. This is contrary to a current opinion; and it may be worth while to point out that in the three years of prosperity the annual consumption of spirits in the United Kingdom was less than in the three years of adversity. It was 36,000,000 gallons a year in prosperity, 42,000,000 gallons a year in adversity.

Dr. Farr easily demolishes that sensational pessimism that seems to delight in exaggerating the total quantity of drunkenness amongst us. Drunkenness, he says, unlike gluttony is a '*public scandal*,' and therefore is a very unfair test of the general morality of a population. Worse things are done in secret, and never talked about. In 1876, in the metropolitan police district, 32,328 charges of drunkenness were made. Taking it that 32,328 persons were disorderly drunk during the year, then 4,179,379 were sober. In the month of June, 1877, the number apprehended as drunk and disorderly daily was 97, of whom 80 were convicted. 'Thus such drunkards in a given

day were to the rest of the people of the metropolis as about one to 43,419. In studying the question on both sides, it is plain that an immense majority of people are sober." Evidence derived from prisons, police courts, and lunatic asylums is often taken as proof of general intemperance; but from such sources we learn the condition of but a morbid fraction of the population.

Dr. Farr does not hesitate to express his belief that the present customary mixed diet, including wine and beer, in due proportion with vegetable and animal food, 'while it yields the maximum energy of life, is conducive to its duration.' But as there are men of weak heads, incapable of self-control, the various temperance societies offer them judiciously the pledge of total abstinence. But whilst denouncing excess of any sort, he denies the ill effects of its moderate use, and challenges the teetotalers to show the mortality of large bodies of total abstainers. Repudiating the insane dictum that alcohol is always and everywhere a poison, he claims for it a medicinal effect in many maladies. It is a capital remedy in fevers—reduces burning heat and calms delirium. May it not, he says, arrest the action and prevent the invasion of some zymotic diseases? But, above all, it is the moral effects that deserve eulogy. The true effects of wine are not learned from chemistry, but from the senses, of which the poets of all ages, and philosophers, are natural expositors. 'Material stimulants play their part in the emotions of the loftiest as well as of the lowest orders of mind. Whilst, therefore, conceding the prudence of total abstinence in some cases, the temperate use is the more excellent way—with this further recommendation: that its principles may be extended to dishes as well as to glasses, and to luxuries of every sort. Excess in food is not so noisy but quite as injurious, and is a much more degrading vice than excess in drink.'

The self-control furnished by religious training, and the mental stimulation engendered by education, are the real remedies for intemperance, while teetotalism is a mere patch.

We should like to see Dr. Farr's little gem of a paper printed separately and widely circulated among the well-meaning clergymen and women who are now spending their strength in propagating teetotalism.

DIET AND LONGEVITY.—A thoughtful person in Medina, O., has practised with increasingly beneficial results the following interesting and economical experiment in dieting: For breakfast, fine graham gems with butter; no inconvenience followed—cost, three cents. Dinner, one-fourth pound rice, one ounce each of sugar and butter; a good meal—cost, five cents. Supper, one-fourth pound of corn meal, one-half pint milk—cost, three cents. Water q. s. Total day's cost, eleven cents. For a change, he suggests one gill of beans, which, by the quart, cost less than half a cent. He claims to work hard, eats nothing between meals, is renewing his youthfulness, and only dreads the lonesomeness to be experienced by living to a very great age.

HYGIENE AND CONSUMPTION.

Dr. Holland writes the following on this subject in Scribner's Magazine: "At the tables of how many farmers and mechanics, we wonder, is the buckwheat breakfast gone into disgrace? We readily recall the time when uncounted multitudes of families broke their fast of twelve hours and faced the work of a blustering winter day with nothing but greasy buckwheat cakes and molasses! They might almost as well have eaten sawdust; and what had they for dinner? Boiled salt-pork and potatoes, and for supper boiled salt-pork and potatoes again—cold, and made palatable with vinegar! Ah, we forgot the pie—the everlasting pie, with its sugary centre and its leathery crust—the one titillation of the palate that made life tolerable. Good bread and butter or milk, abundant fruit, beef and mutton, nutritious puddings—all these things have been within the reach of the people of New England, for they have always been the thriftiest people in the world; but they have cost something, and they have not really been deemed necessary. The people have not realized that what they regarded as luxuries were necessities, and that the food upon which they have depended for protection from the climate and for the repair of the wastes of labor has been altogether inadequate, and has left them with impoverished blood and tuberculous lungs.

After taking into account all the influence of heredity, which is made much of in treating of the causes of phthisis, insufficient nourishment is responsible alike, in most instances, for the deposit of tubercle and the inflammation to which it naturally gives rise. There are many men who by a change of living render the tubercles already deposited in their lungs harmless. Vitality becomes so high in its power that it dominates these evil influences, and they live out a fairly long life with enemies in their lungs that are rendered powerless by the strength of the fluid that fights them. We have seen consumption cured again and again by the simple process of building up the forces of vitality through passive exercise in the open air, and the supply of an abundance of nutritious food; and we have no doubt that it can be prevented in most instances by the same means.

No human body can long endure the draught made upon it by a cold climate and by constant labour, unless it is well fed, well clothed, and well housed. Somewhere deterioration will show itself, and in New England—nay, all over the kingdom of Great Britain it is the same, where the people are worse fed than here—the poverty of blood shows itself in the deposit of tuberculous matter in the lungs. There should be by this time some improvement in New England, in consequence of the increased intelligence of the people; but so long as so many of them are running westward, and their places are taken by an ignorant foreign population, it is not likely that the statistics will show much improvement for a great many

years to come. If our physicians could only be paid for preventing disease, and could be permitted to prescribe for each family its way of living, there would be but little difficulty in routing from its stronghold that most fatal and persistent enemy of human life, which we call consumption.

CAUSES OF DIPHTHERIA.

Dr. Van Wagener of New-ark, N.J., has analyzed 112 cases of diphtheria, and writes as follows in the *New York Medical Journal*: There can be little doubt that diphtheria may fairly be classed among the 'filth diseases.' Whether its poison is produced *de novo*, in decomposing masses of vegetable and animal tissue, or whether our sewers and cesspools are simply the hot-beds in which the disease-bearing spores are rapidly propagated, is a very nice question, and one which cases occurring in a large city cannot help us to solve. For, though many of these cases must have been exposed to cess-pool gas, it is fair to suppose that the specific poisons of all zymotic diseases are constantly present in our air. However, that 'filth' in its various forms is an important element in the development of this disease is proved in at least four particular instances by these cases. The first occurred at the house of an architect living in a healthy and cleanly portion of the city, and who prided himself on having ventilation, sewerage, and water supply as perfect as possible. Several loads of manure were dumped in the garden, about thirty-five feet from the well, with the intention of spreading them over the grounds before snow fell; but, as the mass became frozen, it was allowed to remain. As the snow melted in the spring, it carried a rich infusion of this filth into his well. So gradually had the water become tainted that the family still used it, though they noticed a peculiar taste, and considerable deposit on standing. March 17th, the first child had a mild diphtheria. March 26th, nine days later, the second sickened. The cesspools, well, and privy were pronounced all right at this time. April 7th, twelve days later, a third was attacked. April 10th, three days later, the fourth. April 12th, two days later, a fifth—the wife—had malignant diphtheria. I examined the garden myself then, and found lines which the ooze from this manure-pile had taken in its course to the well. The water was found to be so foul that it appealed to the sense of smell, as well as that of taste. It deposited a considerable light-brown sediment on standing, which, under the microscope, proved to be manure *débris*, and great masses of confervoid vegetation. Here, undoubtedly, was the cause of all the trouble. Aqueduct water was substituted, and fortunately all recovered. One of the children also had scarlatina about this time, having been exposed to that disease. Such water undoubtedly prepares the system for a ready reception of *any* zymotic poison, and vastly increases the tendency to *any* morbid action. In the other three or the four instances referred to, filth was still more evidently the cause of the disease.

THE PRESERVATION OF THE TEETH.

Good, well preserved natural teeth are indispensable to both health and good looks, though they are liable to be sadly neglected by many.

Dr. J. W. Clowes, of New York, one of the oldest practitioners of dentistry, is accustomed, on dismissing a patient, after putting the teeth in good order, to present him with a copy of a neatly printed little tract, full of valuable hints, as follows :

When the teeth of a patient have been under professional treatment, to the extent of a thorough overhauling or placing in order, he is advised as follows, for his personal observance and benefit.

Saving a set of teeth is one of the most positive and undoubted processes in the world, providing the dentist does his work well and the patient does likewise. This statement is made in all candor, that the patient may comprehend his position ; for, if he would retain his teeth, he must "make an effort"—he must indeed be a co-worker. When both the dentist and patient are faithful, there can be no result but success. Therefore, O reader ! peruse, ponder, and practise these

DIRECTIONS.—In the morning, before breakfast, always brush your teeth—first with water only, then with powder. Powder should be used at least once a day. Without powder teeth cannot be kept clean. Using a brush with tooth soap, just before retiring at night, is a commendable practice. To brush effectually, place the upper and lower rows of teeth parallel to each other, the points of the fronts touching ; then use your brush up and down the teeth between the gums being not unmindful or fearful to brush as well the gums as the teeth—thereby toughening the one and cleansing the other. Your back teeth need more brushing than your front ones. Wisdom in this respect will be displayed, should you show a partial care for the back and outsides of the rearmost teeth, above and below. After each and every meal use a dull toothpick, waxed silk floss, and rinse the mouth with moderately cold water. The intention of these is simply to remove food from among the teeth. Decomposed acidified food, animal or vegetable, is the worst enemy your teeth have now to encounter. The enemy, the combat, and the prize are before you ! Will you win or lose ?

If I have learned how to place your teeth in their present condition of health, I have learned also, how you may keep them so—as I, in my operations, have employed appropriate implements, so must you in yours.

These implements are always on hand for those who want them. I do not obtrude them upon any one ; I merely state the fact that they are attainable. Employ other means—trust to other implements if you will—but in that case absolve me from all responsibility.

GERMS IN THE BODY.

One of the greatest advances of medical science in modern times, says the *Health Reformer*, has been the establishment of the germ theory of disease, which supposes that many diseases, like typhoid fever, diphtheria, malarial fevers, yellow fever, etc., are produced by the reception into the system of living germs, which multiply in the blood and interfere with the life processes of the body, occasioning a vigorous effort on the part of the body to expel them,—a remedial effort, which is termed the disease.

It is the belief in this theory which gives so great importance to ventilation, disinfection, and all sanitary precautions, as by these means the poisonous germs and their sources are removed. A thorough carrying out of the principles developed by this theory will accomplish more for the relief of human suffering than all other agencies combined.

Obvious as the theory seems, there are still many able physicians who oppose it very strenuously, and its advocates are called upon for evidences of its truth which cannot be refuted. To afford such evidence has required an immense amount of careful and laborious observation on the part of numerous scientific workers. One of the active of these has been Prof. J. G. Richardson, M.D., professor of hygiene and demonstrator of histology in the medical department of the University of Pennsylvania. Dr. Richardson actually demonstrated the possibility of the presence of germs in the blood by drinking four ounces of a liquid which was calculated to contain 27,000,000,000 germs. A short time after, he drew from his finger a drop of blood, and upon examination found it to contain multitudes of the same germs which he had taken into his stomach. A few hours later he again examined a drop of blood, and found that the germs had undergone the same process of development which they showed in the liquid, a portion of which he had swallowed. This seems to be as complete demonstration of the theory as could be desired.

POPULAR ERRORS.—An exchange gives the following popular errors: It is a popular error to think that the more a man eats the fatter and stronger he will become. To believe that the more hours children study the faster they learn. To conclude that, if exercise is good, the more violent the more good is done. To imagine that every hour taken from sleep is an hour gained. To act on the presumption that the smallest room in the house is large enough to sleep in. To imagine that whatever remedy causes one to feel immediately better is good for the system, without regard to the ulterior effects. To eat without an appetite; or to continue after it has been satisfied, merely to gratify the taste. To eat a hearty supper for the pleasure experienced during the brief time it is passing down the throat, at the expense of a whole night of disturbed sleep, and weary waking in the morning.

NEW, CHEAP, AND SELF-GENERATING DISINFECTANT.

We have been applied to in reference to the following formulæ for disinfecting purpose. A similar one from Dr. Day has been published in some of the papers without the exact proportion of the ingredients. It is unquestionably a good one; Dr. Day has made the subject a special study for many years.

Dr. John Day, of Geelong, Australia, recommends for use in civil and military hospitals, and also for the purpose of destroying the poison germs of small-pox, scarlet fever, and infectious diseases, a disinfectant ingeniously composed of one part of rectified oil of turpentine, and seven parts of benzine, with the addition of five drops of oil of verbena to each ounce. Its purifying and disinfecting properties are due to the power which is possessed by each of its ingredients of absorbing atmospheric oxygen and converting it into peroxide of hydrogen—a highly active oxidizing agent, and very similar in its nature to ozone. Articles of clothing, furniture, wall-paper, carpeting, books, newspapers, letters, &c., may be perfectly saturated with it without receiving the slightest injury; and when it has been once freely applied to any rough or porous surface, its action will be persistent for an almost indefinite period. This may, at any time, be readily shown by pouring a few drops of a solution of iodine of potassium over the material which has been disinfected, when the peroxide of hydrogen, which is being continually generated within it, will quickly liberate the iodine from its combination with the potassium and give rise to dark brown stains. It may be applied with a brush or a sponge, or, if more convenient, as is the case with certain articles, such as books, newspapers, and letters, it may be simply poured over them until they are well soaked; they may then be allowed to dry, either in a warm room or in the open air.

LIFE HISTORY OF A SEPTIC ORGANISM.—A paper was read upon this subject before the Royal Society by the Rev. W. H. Dallinger, F.R.M.S., (*Pacific Med. & Surg. Journal*) in which were described the experiments made to determine its thermal death-point. The conclusion as to the latter agrees with former observations in showing that germs resist heat more than adult forms. The adults of the organism observed (an infusorian found in the early stage of a bole), were destroyed at a temperature of 142° F., while the spores or germs resisted a heat of 220° F. The experiments of Messrs. Dallinger & Drysdale have shown that boiling an infusion does not destroy vital germs, so that the theory of Abiogenesis is deprived of aid from any of the elaborate experiments heretofore made with boiled infusions. The flagellate infusorian described undergoes frequent self-division or fission. But in some instances it assumes an amaboid state, conjugates with another individual, and the sarcode of each blends into one which becomes sluggish in movements, elongates and discharges minute germs, which, when carefully followed were seen to develop into the adult form and size.

BRIDAL TOURS.

The *SANITARY JOURNAL* has long ago protested against the absurd but fashionable bridal tour. The *Hospital Gazette* gives the following on the matter :

It would be an interesting thing to study the number of ills from which the present generation is suffering, imposed upon them by custom, or descended to them from their ancestors. If it is the fashion, which means the custom, to lace tightly, women will lace, even though they know that they are doing themselves temporary or even permanent injury. They repent when various uterine troubles make every day duties a task, and themselves poor, exsanguinated invalids, with 'shattered nerves.' And, by the by, 'shattered nerves' covers as great a multitude of sins as charity, only in a different way. One would think that the average female manacled by corsets, distorted by ill-dressing, with overheated head from false hair, and cramped feet and powdered face, had imposed upon herself enough misery without adding more to it; but it seems not. A young woman, brought up in the lap of luxury, or otherwise, suffering from both her own sins and the sins of her ancestors (physical sins), gains the admiration of some man who loves her devotedly, and would risk even his life to save her misery or pain, and marries him. At this time of life, when the sexual function has just burst fully into life, at this period, when a good constitution is needed to stand the excitement of love as well as fashion, when the uterus and its appendages are congested, what does she do? She starts off with the young man of her choice, and jaunis about the country in jolting railway cars, or starts for a voyage across the ocean. She throws aside the very thing that she needs, at the very time she needs it most—rest—and leaves friends and home to meet strangers and strange things, and put up with the fatigue and excitement of travelling.

This is essentially wrong, and is only done because it is the custom for the happy couple to do it. We do not doubt that the foundation for many of these shattered nerves are thus laid, and in these few words put forth our demurrer to the pernicious practice. the only argument in favour of which is that it is the fashion to do it.

A lady brought a child to old Dr. F. to consult him about its health. Among other things, she enquired if he did not think the springs would be useful. "Certainly, madam," replied the doctor, as he eyed the child, and then took a large pinch of snuff. "I haven't the least hesitation in recommending the springs—and the sooner you apply the remedy the better!" "You really think it would be good for the dear little thing, don't you?" "Upon my word, it's the best remedy I know of." "What springs would you recommend, doctor?" "Any will do madam, where you can get plenty of 'soap and water.'"

THE COFFEE TAVERN MOVEMENT.

In view of the large amount of disease caused by intemperance in the use of spirituous liquors, the Sanitary Journal cannot but rejoice at the movement which has been made by certain well-known philanthropic gentlemen in Toronto to establish coffee taverns in the city. Had but one-tenth part of the, for the most part, well-meaning but comparatively not very fruitful efforts of total abstinence workers been directed toward the providing of counter attractions for the masses who congregate in bar rooms, and too often drink to the great injury of both mind and body, we have no doubt that a larger amount of good would have been accomplished. And it is to be hoped that all temperance people will render all possible encouragement and assistance to this excellent movement.

The results of the coffee movement in England have been what may be regarded as of the most encouraging character. Besides the many houses which have been established in London, some have been opened in Liverpool, Birmingham, Bristol, Gloucester, and Southampton. It is said, that, there where most drink houses are to be found, there are the best neighborhoods for these coffee taverns. The results have shown that these taverns, attracting large numbers of all classes, can be made to pay. They are established by companies which issue shares, which may be taken up by working men. Besides the bar in the centre of the room, there are noticeable small marble tables accompanied by plain but comfortable seats, while, unlike the lower class of coffee-houses, the place is light and cheerful, and gives evidence of a certain desire to please the eye; the exterior is also made distinctive, if not attractive, by the coat of red paint, which is the characteristic of the houses. They contain good wholesome food, and they know that can be got at a price which certainly is not dear. Besides the entertainment which was provided at the bar, customers find at all hours of the day newspapers at the tables, so that anybody who likes to look in and see what they have got in the way of refreshment may stay there and read the papers as long as they like; they do not wish to turn them out, but they can have the shelter, the light, the warmth, and the literature, and then enjoy themselves in a rational way. Further than this, working men are at liberty to bring their own meals and eat them within the house. Then they have one other thing of importance to offer, viz., that those who wish to obtain refreshment to be drunk off the premises can do so. In the houses already opened they do as good a jug business as they do a bar business, and this is not the least useful part of the work which the Coffee Tavern Company undertake. They are not a merely benevolent association, but their operations are conducted on a purely commercial basis, and they appeal to the public for support on the ground of the goodness of the refreshment which is offered to them, and on no other ground whatever. They ask them to pay a price which, low as it is, will pay the Company,

and they trust that the fact that the price is low and the things good will commend itself to the public.

We heartily wish the coffee tavern movement in Toronto much success, and believe it will be the means of accomplishing much good. And we hope and expect to see such resorts soon established in many other cities and towns in Canada.

HYGIENE OF CELLARS.—Dr. R. C. Kedzie, President of the Michigan State Board of Health, Prof. of Chemistry in the State Agricultural College, has contributed to the last Annual Report of the State Board of Health on "Healthy Homes for farmers," from which the following is an extract:—'Go down into the cellar and examine the foundations of life: see whether the cellar is dry and well ventilated, and the air sweet and wholesome; that no vegetables and useless rubbish of any kind are left to rot in your cellar. Or do you find all kinds of things going to decay, the cellar wet, the walls slimy, mold spreading over everything, and a close and stifling odor pervading the air of your cellar? If these inanimate things could give voice to their warning, what a sound would startle our ears in hundreds of cellars in our State. Here lie in ambush diphtheria and membranous croup, the destroyers of childhood, and typhoid fever that strikes at all ages: here lurk the seeds of consumption to bring forth the slow but sure harvest of lamentation and woe!' 'For the stone shall cry out of the wall, and the beam out of the timber shall answer it.'

But though these voiceless things speak no word of warning, they hang out the flag of danger; the spotted mold and fungus attacking the timbers of your cellar show that destructive agencies are at work. Why, man! death is gnawing the very sills of your house, and shall he spare those tender morsels, your children? These damp, musty, moldy cellars are seed-beds of disease. Do not hope to preserve health over such a charnal house. Do not leave vegetables to rot in your cellar to spread rottenness through all your house.

The wet cellar foretells wet eyes up-stairs! Drain it, and under drain the surrounding soil so that your cellar shall always be dry. Drive out all mustiness and mold by ventilation and by abundant use of white-wash. Make the air of your cellars at all times sweet and wholesome, because much of this air will find its way into the rooms above. But if you neglect all these things, and the angel of death spreads his dark wings over your household, do not charge the effects of your nastiness and laziness to a very mysterious Providence! 'A prudent man foreseeth the evil and hideth himself; but the simple pass on and are punished.'

It is argued by a French physician that persons suffering pain should freely indulge in crying and moaning, as these expressions are intended by nature as a means of lessening physical anguish. The attempt to suppress crying in children is deprecated, as the consequence may be St. Vitus' dance, epileptic fits, &c.

AMUSEMENTS OF GREAT MEN.—An exchange gives the following amusements of eminent men: nearly all learned men and hard students have resorted to some amusement, however trifling, to unbend the mind after the strain put upon it by severe study. It was a standing rule among the Jesuits that not more than two hours should be spent in study without relaxing the mind by some simple recreation. Spinoza is said to have amused himself by setting spiders to fight each other, and sometimes he became so interested in their queer performances that he would burst into immoderate fits of laughter. Descartes would lay aside his profound speculations to work in the flower garden. Samuel Clarke, the great logician, was fond of violent exercise, and was several times found leaping over tables and the backs of chairs, by visitors to his study. DeGrammont, entering suddenly the private room of the Cardinal de Richelieu, found the minister jumping up against the wall. To catch the prime minister in so undignified an occupation was oftentimes dangerous; but De Grammont, with true courtier's tact, instantly cried out, "Two to one I can jump the highest," and joined in the sport with great zeal, taking care however to let the Cardinal jump the highest. To this stroke of policy he is said to have owed his advancement. Contemplative and quiet men seem to have been fond of amusements which accorded better with their habits. To such the game of chess, and angling, "the contemplative man's recreation," have afforded delight and amusement. Others have turned from works requiring the most profound study, to writing on the most odd, and often ridiculous subjects which would occur to them, and in this way have rested their wearied brains.

TO KEEP THE SKIN OF THE HANDS SOFT.—B. P. Marsh, A.M., M.D., in the *Herald of Health*, recommends the following, which we have no doubt will prove satisfactory to those who try it. "The simplest and perhaps most satisfactory is to always keep side by side with one's toilet soap, a bottle of mixture of, one part tinct. benzoin and four parts chemically pure glycerine. Thoroughly wash the hands with warm soapsuds and rinse with water free from soap; do not wipe, but let them drain a moment, and then while still wet, apply a few drops of the above preparation, and dry with gentle pressure of a soft towel. Another is to always thoroughly rub the hands with linseed oil before washing with soap. Either of the above measures will keep even a naturally harsh skin soft and pliable. While at work, exposed to wind, damp or dust, or engaged at any kind of housework, such as scrubbing, ironing, or dish-washing, there is no better protection for the hands than smearing them often with mutton tallow.

SCIENCE MADE EASY.—Friend to Scientific Authority: "Doctor, how is a man to tell a mushroom from a toadstool?" Scientific Authority: "By eating it: if you live, it is a mushroom; if you die it is a toadstool."

VENTILATING EXHAUST COWL.—The following is the report of the sub-committee (consisting of Captain Douglas Galton, C.B., F.R.S.; Rogers Field, B.A., M. Inst. C.E.; William Eassie, C.E.) appointed by the Sanitary Institute of Great Britain to practically test the ventilating exhaust cowls exhibited at Leamington in October, 1877. The sub-committee appointed at Leamington to test the ventilating exhaust cowls beg to report that they have given the matter their most careful attention, and carried out at the Royal Observatory, Kew, an elaborate series of about 100 experiments on seven different days, at different times of the day, and under different conditions of wind and temperature. After comparing the cowls very carefully with each other, and all of them with a plain open pipe as the simplest, and in fact only available standard, the sub-committee find that none of the exhaust cowls cause a more rapid current of air than prevails in an open pipe under similar conditions, but without any cowls fitted on it. The only use of the cowls, therefore, appears to be to exclude rain from the ventilating pipes; and as this can be done equally, if not more efficiently, in other and simpler ways, without diminishing the rapidity of the current in the open pipe, the sub-committee are unable to recommend the grant of the Medal of the Sanitary Institute of Great Britain to any of the exhaust cowls submitted to them for trial.

W. EASSIE,
ROGERS FIELD,
DOUGLAS GALTON.

May 30, 1878.

THE REQUISITES OF GOOD SEWERAGE.—In a lecture recently given before the American Social Science Association, Colonel George E. Waring, jun., of Newport, R.I., laid down the principles of effective sewerage. The sewer should be so tight as to prevent all leakage. Its fall or inclination need not be great, but must be regular, giving an equal cleansing velocity of 120 feet per minute in every part, with no dead water. Ample ventilation should be secured by man-holes and open gratings 100 yards apart, and by tubes in each house connected with the soil-pipes, and opening above the roofs. Free discharge at the outlet of the sewer, and the means for flushing it periodically, must also be provided. With these precautions there need be no sewer-gas. The size of the sewer should be carefully adjusted to the volume it will have to carry, so that heavy rains will flush and cleanse it, carrying out any substances or other things that would cause accumulation and obstruction if the sewer were disproportioned to its work.

ACTUALLY BURST.—Exchanges are noticing the case of a man who literally burst, split his diaphragm in two and died, from four plates of potato soup, "numerous" cups of tea and milk, followed by a large dose of bicarbonate of soda to aid digestion! His stomach swelled enormously, and tore the diaphragm on the right side causing immediate death.

INFLUENCE OF EXERCISE ON THE LUNGS.—One of the conditions of perfect health is physical exercise. In its absence the whole system suffers deterioration and falls short of that development which is necessary to the vigorous action of the different organs. More than any organ, however, do the lungs suffer; and it is not difficult to explain why. In order that an organ be well nourished, it is necessary that it should be abundantly supplied with blood, and one of the many agencies which plays an important part in propelling the blood through arteries and veins is muscular contraction. The alternate contraction and dilation of the muscles forces the blood along the vessels. When a person is exercising vigorously, the respiratory movements become greatly increased, the air vessels become dilated, the blood is propelled through the minute capillaries which constitute a large portion of their structure, and the lung tissue receives the nourishment which it requires, and which is necessary to its integrity and efficient action. From insufficient bodily exercise, then, the lungs suffer in two ways—viz., for want of sufficient blood to nourish them and for want of necessary expansion. The result is that the lungs, more frequently than any other organ, become affected in those who lead inactive lives. This fact makes it incumbent on all, and especially on those who have weak lungs, to spend a portion of each day in vigorous physical exercise. We mean by this exercise which calls into vigorous action all the muscles of the body, exercise which causes the skin to glow, perspiration to start. Two hours of this kind of exercise each day is not too much; and it should be performed, when possible, in the open air. A celebrated French physician says that a person, to be healthy and strong, should exercise to the point of perspiring every day.

CARE OF CHILDREN.—An exchange gives the following sensible remarks on this subject.—The foundation must be well laid to insure healthy and happy children. The child must be well slept, well aired, well fed, and well bathed. By a thorough understanding and practice of these four simple rules, much of the physical, mental, and moral suffering in life would be avoided by parent as well as child. If a healthy child (and a delicate one proportionately) is regularly put to bed about dark in a quiet, well-ventilated, or even cold room, after a supper of plain food, it will naturally awake at daybreak, good-natured, with a keen appetite for a wholesome breakfast. Nutritious, plain food at regular hours, with no candy or stimulants, and free bathing, help the system to ward off many prevalent children's ailments, and to bear with much less danger the few that must necessarily come to the majority of little ones. The child that is just given a little confectionary or any unsuitable food, and then rocked to sleep, should cause no surprise at waking peevish and feverish. It is simply the result of imaginary affection and want of knowledge on the part of the one in charge. It will certainly pay in the end to search diligently the cause when a little child is proverbially cross.

THE PRIME OF LIFE.—Between the ages of forty-five and sixty, says the *Sanitarian*, a man who has properly regulated himself may be considered in the prime of life. His matured strength of constitution renders him almost impervious to an attack of disease, and experience has given soundness to his judgment. His mind is resolute, firm, and equal; all his functions are in the highest order; he assumes mastery over his business; builds up a competence on the foundation he has laid in early manhood, and passes through a period of life attended by many gratifications. Having gone over a year or two over sixty he arrives at a stand-still. But athwart this is the viaduct called the turn in life, which, if crossed in safety, leads to the valley of 'old age,' round which the river winds, and then beyond, without boat or causeway, to effect his passage. The bridge is, however, constructed of fragile material, and it depends how it is trodden whether it bend or break. Gout and apoplexy are also in the vicinity to waylay the traveller, and thrust him from the pass; but let him grid up his loins and provide himself with a fitter staff, and he may trudge on in safety and with perfect composure. To quit metaphor, 'the turn of life' is to turn either into a prolonged walk or into the grave. The system and powers having reached the utmost expansion, now begin either to close like a flower at sunset or break down at once. One injudicious stimulant, a single fatal excitement, may force it beyond its strength, whilst a careful supply of props and the withdrawal of all that tends to force a plant will sustain in it beauty and vigor until night has entirely set in.

CONVALESCENCE.—The appetite of the convalescent (*Saturday Review*) is fitful and capricious; yet his friends insist upon stuffing him at all sorts of odd hours, as if he were destined to fill a tureen *de foie gras*. Between breakfast and luncheon he must swallow some raw meat-juice and a glass of wine; at three p.m., he must take some strong jelly; between dinner and bed-time he has to face beef tea, and during the night-watches he is dosed with Leibig's Extractum Carnis. An attack of biliousness soon follows, which has to be relieved by cooling but unpleasant medicines. The doctor tells him that he never intended him to be overfed in such a manner, and reads him a long lecture on the incapability of the stomach to respond to too frequent calls upon its energies. In place of being over-gorged he is now over-tonicked, until a buzzing in the head and sudden deafness demand rest for the system from medical pick-me-ups.

THE SANITARY authorities of the Tyrol compel midwives, under a penalty, to provide themselves with a five per cent. solution of carbolic acid. Before attending a case of labor, they are obliged to wash their hands with a mixture of one part of this with four of water. All instruments, sponges, etc., which may have been used, must be similarly disinfected. It is hoped in this way to prevent puerperal fever.

THE STATISTICAL BUREAU.

We hope the movement toward the establishment of a Central Bureau of vital statistics in connection with the Dominion Government will not be permitted to cease. Our esteemed friend doctor (now Senator) Browne, who has manifested a deeper interest in the public health and statistical matters than any other Legislator in the Dominion, will in his new and higher position be still able to press the matter, and we trust he will not fail to do so. Indeed we feel assured he will not let the subject drop through. The fact that a medical man (the Hon. Dr. Tupper) is so to speak, so near the head of the present Government may perhaps be favorable to the success of the movement. The necessity for a Central Bureau of this kind at Washington is being strongly urged by Sanitarians in the United States. With provincial departments of health in each of the provinces, a Central Federal Bureau will be essential to a complete system of health and statistics for this Dominion.

IMPORTANCE OF DIET.—How much the success or failure of our lives depends upon the food we eat, we little comprehend. No science is so neglected and so little understood. Man would not dare to treat a valuable horse with the same recklessness with which he treats himself. For with care he selects food for his horse, few if any changes being allowed, and he procures a competent groom to look after and care for the animal, that he may be capable of fleetness and endurance; while with himself he sits down to his table groaning under its burden of variety and richness, and without regard to the requirements of his system or the affinity the food may possess, fills himself to the utmost capacity of his stomach, regardless of consequences. But had he first passed this partaken dinner over to his chemist and allowed him to analyze it and hand it back to him labeled, he would have turned pale and wondered if such was truth. Again, were he to step into a drug store and attempt to promiscuously mix chemicals as he does his food, without regard to chemical laws, he would soon have his head blown from his body. Why not then study and investigate the laws of our own natures, and be as wise as is the ox or the ass that knoweth his master and his master's crib, and accuse not a kind and loving Providence of cursing us with ill health when the curse lies at our own door?

WHAT is really wanted is one recognized and sufficiently powerful Minister, not to centralise administration, but on the contrary to set local life in motion—a real motive power, as well as an authority to be referred to for guidance and assistance by all the sanitary authorities for local government throughout the country. The department should keep all local authorities and their officers in the active exercise of their own legally imposed and responsible functions, and should make itself acquainted with any default and remedy it.

EFFECT OF GAS ON FABRICS.—Dr. William Wallace, of Glasgow, by a series of experiments has determined that the sulphuric acid left in the air by the combustion of coal gas is a great cause of the destruction of the color of cotton goods. Even the fabric itself is often rendered so tender by the destructive action of the acid as to be utterly useless. It is on this account that it is deemed by our best authorities very injurious to people with very sensitive lungs to inhale air which has been poisoned and rendered irritating by the combustion of coal gas. If the use of the gas is unavoidable, the most thorough ventilation should be secured.

VACCINATION will not prove successful in a patient who, at the time, is under the influence of arsenic, says an English health-officer, Dr. E. J. Syson, quoted by Dr. E. M. Hunt, *Medical Record*, March 9th. (*The Proceedings*.) “The Antecedent Treatment of those Exposed to Zymotic Diseases.” He suggests that other remedial agents, especially those classified as azymotics, will also cause the failure of a properly formed vaccination. This hint opens the door to a wide field of investigation.

The human lungs reverberate sometimes with great velocity.
When windy individuals indulge in much verbosity.
They have to twirl the glottis sixty thousand times a minute,
And push and punch the diaphragm as though the deuce were
in it.

Chorus :—The pharynx now goes up, the larynx with a slam
Ejects a note from out the throat, pushed by the
diaphragm.

CAUSE OF DIPHTHERIA.—It was found (*Health Reformer*,) upon examination of two hundred houses in Boston where there had been cases of diphtheria, that the disease was in every case preceded by derangement of the waste pipes, so that there was an escape of sewer gas, laden with disease germs.

AMBIGUOUS—The recently-published report of an Irish benevolent society contains the following ambiguous paragraph : Notwithstanding the large amount paid for medicine and medical attendance, very few deaths occurred during the year.

BILLS WILL BE sent with this number to those in arrears, and we hope friends of the **JOURNAL** will not forget that it is near Christmas times, when all accounts should be “squared up” and that they will kindly, by promptly remitting the amount, save the necessity and trouble of sending the accounts again ; for it involves considerable trouble and expense.

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