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HEALTH JOURNAL

A Monthly Review and Record of
SANITARY PROGRESS

—EDITED BY—
EDWARD PLAYTER, M.D.

Public Health and National Strength and Wealth.

For Contents see next page.

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VOL. XII.

NOVEMBER, 1890.

No. 11.

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CANADA HEALTH JOURNAL.

A Monthly Record of Sanitary Progress.

VOL. XII.

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CITY VENTILATION—SQUARES AND PARKS.

PHYSICIANS are in the constant habit of recommending to their patients an "outing," in the fresh, pure air, to rich and poor alike; and every body almost now knows that to get out in the fresh pure air is very beneficial, indeed essential, to health. But in a city, even the smaller cities, where are the thousands of working men with their wives and children to find pure, fresh air? Not often in the streets, near overcrowded blocks and squares of houses. If there is to be any reasonable degree of comfort or health in a city, open spaces, such as squares and parks, must be provided in abundance. And as busy mothers or sisters or others cannot often go far away from their home to get their little ones or themselves an outing, an open space should be provided near at hand, for the use of every family. London the great has been long making successful efforts to provide open spaces in central parts of the city chiefly for the use of the great masses of the poorer classes of people who cannot get to the larger, usually more distant parks, or away from home for a holiday.

One comes upon a shady square in a city during the warm season as upon an oasis in a desert, and besides the shade it provides, and besides the moral and æsthetic influence of such open, cooling places with their verdant trees and grass and flowers, they act as powerful ventilators of a city, promoting mild currents of air and so diluting and dissipating impurities; the growing vegetation aids in this purifying process; while the trees help to regulate and equalize the humidity of the atmosphere. It is urged by eminent authorities, and with good reason, that to the large number of open spaces now in London is very largely if not chiefly due

the great reduction in the death-rate there in quite recent years, and the saving of hundreds of thousands of lives. The undoubted effect of such breathing spaces is to promote the health and invigorate all who visit them and to render their bodies less prone to specific disease, epidemic or other. Children or grown up people who frequent such open spaces are less susceptible to any infectious disease—typhoid, diphtheria, &c., and should they contract such, are less likely to succumb to its influence and die from its effects,—they are the more vigorous for the combat with disease.

For Canadian cities and towns, now is the time to secure parks and squares. The value of land is doubtless steadily on the increase and broad acres should be secured with liberal hands; for which, by means of a sinking fund, the coming generation, which will probably reap the greater benefit, will help to pay. Dwellers in cities and towns, as you value health, life and happiness, provide, amidst your walls and streets, for bits of open "country."

Paris is probably better provided with park acreage than any other of the world's large cities. It has 58,000 acres; or one acre for every 37 of its inhabitants. London has 22,000 acres, scattered pretty well throughout the city; one acre for every 174 inhabitants. Dublin and Vienna have a somewhat larger park area per capita. Of cities in the United States, Minneapolis and St. Louis are best provided with open spaces, but not so well as Dublin. Washington, Boston and Detroit come next, and have one acre of park for about every 200 of the inhabitants. Montreal has about one acre for every 220 of its people. Toronto is not well provided with parks, and the capital of the Dominion has hardly any park accommodation at all.

ON BAKING POWDERS AGAIN.

TIME and again we have drawn public attention to the highly objectionable nature of most baking powders in the market. Once more now we would urge upon those who have any regard for their digestion and general health to give attention to the character of that used in the preparation of their food. And we trust that in the interests of their readers, the general press will aid us in awakening an interest in this really very important subject.

The general consensus of both good housekeepers and scientists has settled upon a mixture of baking soda and cream of tartar, with about 20 per cent. of what is called "filling," as starch or flour, to keep the particles of the salts in a measure apart so that the mixture will keep better, as the best possible baking powder that can be prepared, in accordance with present chemical and physiological knowledge. This is the formula recommended by the able chief of the Canadian Analytical Department, which has been largely quoted and endorsed by scientists in the United States.

The only other ingredients used in the manufacture of baking powders, it appears, are alum and ammonia; used chiefly on account of their inexpensiveness as compared with the tartar and soda salts. We have repeatedly drawn attention to the injurious effects of alum upon the human constitution. Its use in baking powder has been prohibited in England, France and Germany, and a law has recently been passed in Minnesota requiring manufacturers using alum to publish on the label,— "This baking powder contains alum." The Canadian government report, quoted in the last issue of the *Scientific American*, says: "The residues left in the bread after use of an alum powder, are sulphate of ammonia, sulphate of soda, and alumina. The last named is an earthy substance quite insoluble and therefore indigestible." "Alum is entirely objectionable as a substitute for cream of tartar, and ought not to be allowed a place in any well appointed

bakery. That the use of ammonia is at least quite as objectionable, there is abundance of evidence. It is an excretion, and is not found, as ammonia, in the human body. The *Scientific American* (Nov. 8th, inst.) gives a list of ninety-five different sorts of baking powders now in the market, including the "Roya" and many other well advertised and used brands, which contain alum and ammonia; the list being compiled from five official reports, viz.: "United States Department of Agriculture, Bulletin No. 13; Inland Revenue Department, Canada, Bulletin No. 10; Ohio Dairy and Food Commission; New Jersey Dairy Commission; and the Massachusetts State Board of Health." But two of the many baking powders which are in the market, it appears, are free from one or the other or both of these objectionable, indeed actually poisonous, ingredients—alum and ammonia. How long will millions of people continue to use these poisonous compounds?

The best baking powder, therefore, consists of only cream of tartar and baking (or bicarbonate of) soda,—in proportion, near enough for all practical purposes, of one and one-eighth pound of the former to half a pound of the soda salt, well mixed and rubbed up with three-eighths of a pound of rice flour (some use $\frac{1}{2}$ lb. of the flour). Cream of tartar is very liable to adulteration, and should be obtained from a reliable dealer; druggists, probably, usually keep the purest. Families or others could prepare their own powders in this way, *purver* and at *half the cost* of those commonly sold by grocers, and which usually contain alum and ammonia.

PUBLIC INTEREST being always higher than that of the individual, must be first served, and no man has a right to follow any trade or calling that in any way menaces public interests. No man has any right to follow any legitimate pursuits in such a manner that the prosecution of his labors may become dangerous to public welfare.

THE PROPOSED DOMINION HEALTH DEPARTMENT. ;

IT will be remembered by most intelligent Canadians that during the last session of Parliament, in the discussion of Dr. Roome's resolution in favor of a Dominion department or sub-department of Health, that the Prime Minister made the excellent suggestion that a conference be held "To which the Federal Government would ask the various Provincial Governments to send representatives, for the purpose of endeavoring to frame some united plan for exercising the various powers conferred upon them by the Constitution in such a manner that they could unite in one system and carry it out as efficiently and inexpensively as possible. It has occurred to me that the general feeling of the House is that that suggestion could well be carried out, and we might combine the Provincial and the Federal Governments in the adoption of some united system."

We believe Dr. Roome is endeavoring to have arrangements made to carry out this suggestion. The time for the next session of Parliament is near at hand, or but a few weeks hence, and it is to be hoped no time will be lost in completing such arrangement, so that the result of the honorable gentleman's suggestion may "come up" at this next session.

As we have before said, putting it practically, man, at least physically, is but a product of the soil,—Canadians, of Canadian soil—and as much attention and care should be given to mankind as to any other products of our land—cattle, grains, &c.; and a sub-department connected with the Department of Agriculture, or with another of the State Departments if more desirable, would be in a position to give to the people of our beloved Canada such attention and care as is now very wisely devoted to these other products of our Dominion's soil.

To briefly outline, for the better comprehension of our readers, what we think most desirable and necessary, if our Dominion is not to be behind other countries and is to make the best possible progress, we would suggest, similar to what we have

long urged, that: (1) The mortuary statistics should be greatly extended and efforts made to have them more perfect and returns of marriages and births included. (2) Provision should be made for obtaining reports, monthly, fortnightly or weekly, from at least 150 points in the Dominion, of the then existing condition of the public health at or near these points, more especially as relating to any epidemic or prevalency of infectious disease. These reports might include any disease of domestic animals also. (3) A first-class hygienic laboratory should be provided, with facilities for biological examinations, and for investigating causes and sources of disease. This might well we think be connected with the present analytical department, which would be best connected too with the department of Health. (4) Some provision should be made for obtaining, internationally, information relative to the sanitary condition of vessels leaving foreign ports; and this could be most naturally connected with the present quarantine management, and all associated likewise with the Health Department. (5) A bulletin, issued monthly, or better fortnightly or weekly, should be freely distributed throughout the Dominion—to all the local papers, health officers, &c., containing official information relative to the condition of the public health in all parts of the Dominion, with advice and suggestions for the promotion of the same.

GoFIO: Dr. C. F. Taylor in the Popular Science Monthly, Food, Home and Garden says, speaks of the superior development of the inhabitants of the Canary Islands which he attributes to the superior nutritive qualities of the farinaceous food used by them. This is called "*gofio*," and is simply flour made from grain of different kinds, which is parched or roasted before grinding. When it is to be eaten, it may be mixed with milk soup, or any suitable fluid. While on a visit to the Canariense Dr. Taylor adopted it as an article of food, and found it digestible and nutritious.

INSANITY AND THE PUBLIC HEALTH.

INSANITY (as well as crime, to which subject we recently drew attention) we contend is intimately related to the public health. Whatever measures tend to promote the public health, tend to prevent insanity and the increase of it which is complained of almost everywhere. Hence, to prevent disease is to prevent insanity. In this special connection, in writing of measures for preventing disease and promoting the public health, we do not allude so much to that municipal control which bears upon sewerage, scavenging, water and milk supply, &c., as to measures employed for instructing the public in the value and importance of healthy living—healthy habits of life; instructing them not only through the schools (a good and certain process but affecting only or chiefly future generations and not the present one), but also by means of abundance of correct health literature scattered abroad, and when possible, health lectures, together with regular and frequent reports of sickness and death rates in the various municipalities, showing that where most causes of disease prevailed, either individual or municipal, there would be found the highest mortality and the most sickness.

We do not know how far our contention in this regard is recognized in the management and treatment of the insane by the Asylum physicians, but it is not generally recognized by the public, although it is clear that disease of different organs, caused by erroneous habits of life—by improper living, gives rise to different

forms of insanity; and therefore, as we have said, to prevent disease is to prevent insanity.

The eminent authorities, Bucknill and Tuke, say that, "No physician of much experience in this department of medical science will be likely to deny that disordered states of the stomach, the intestines and the liver, do frequently constitute the remote causes of cerebral disease."

Jacobi and other physicians of eminence are of opinion that disordered bodily states account altogether for the causation of mental disease. Maudsley says: "I doubt not that an acute nose might be trained to recognize insanity by its odor in some instances. The excretions from the body are sometimes particularly offensive." The offensive excretions are undoubtedly caused by erroneous habits of living. At a recent meeting of the Medical Hospital Society in Paris, notes of a number of cases of insanity caused by Bright disease (of the kidney) were submitted. Treatment of the kidney disease caused improvement in the mental condition, while on the other hand, if the treatment was discontinued, the mental disturbance reappeared. Prevention of the kidney disease by proper living, we need hardly write, would have prevented the insanity.

All measures then for promoting the public health, whether of a coercive or of an educational character, not only prevent disease and premature death but also prevent both crime and insanity.

ON THE VALUE OF SULPHUROUS ACID DISINFECTION.

MUCH has recently been said and written as to the value of sulphur fumes as a disinfectant, and doubt has been thrown on the efficacy of this very old agent. In the Toronto Globe recently a medical practitioner questions the usefulness of this method of disinfection. All this leaves the public mind very unsettled,

and indeed dissatisfied with the whole process of disinfection, while it creates a doubt in the mind of inspectors and other health officers.

In the September JOURNAL we gave a communication from the able Secretary of the Michigan State Board of Health (which was however not properly credited to him

as it was from an exchange—the Am. Jr. of Med. Sci.) on this subject, which was strongly favorable to the proper employment of sulphur fumes; and in former issues much more like evidence has been given.

Experiments recently made in Paris should set this question at rest. A correspondent of the Therapeutic Gazette (of Phila., Pa.) sends to that Journal for October the report detailed below :

Drs. Thoinot and Masselin had just completed a thorough investigation of the efficacy of sulphurous acid gas as an antiseptic. It should be explained that the experimenters, both skilful and well-trained gentlemen, had at their disposal the resources of the Pasteur Institute microbiological laboratory and the use of some vacant wards at the Charite Hospital. Owing to these facilities, they were enabled to procure or prepare the various septic agents; to test their virulence before and after exposure to sulphurous gas; to conduct the disinfecting operations under conditions closely similar to those of current practice; and, in fine, to bring into play all the nice exactness now indispensable in scientific researches that are to stand the fire of modern criticism.

The conclusions from these experiments are that, sulphur fumes may be considered useless with septic vibriones and charbon; but in 60-gramme doses to the cubic metre (28 grains per cubic foot) and after twenty-four hours' contact, they may be relied upon to destroy tuberculosis, glanders, farcy, typhoid fever, diphtheria and probably cholera germs. The germ of scarlet fever remaining as yet unknown, as the report states, no experiments could be instituted.

The following were the viruses tested : (a) Pasteur's septic vibrio; (b) bacterial or symptomatic charbon; (c) bacterial charbon; (d) tuberculosis; (e) glanders; (f) typhoid fever; (g) diphtheria; (h) Asiatic cholera; and (i) Guadeloupe farcy. Each virus was simply exposed to the sulphurous acid in a room of fifty cubic metres (seventeen hundred and sixty-five cubic feet) capacity, tightly closed with putty. The gas was evolved in various proportions,

but the quantity of sulphur consumed noted in all cases. Now as to the results : (a) Septic vibrio, or Pasteur's septicæmia, was tried under four forms, and proved, even in large proportions, utterly powerless in all cases. (b) Symptomatic and (c) bacterial charbon remained unaffected, as a rule, though large proportions of sulphur fumes continued for forty-eight hours will occasionally have some effect. (d) Tuberculosis in cultures supplied by Professor Nocard, and in the form of sputa, fresh and dried : in all cases Koch's bacillus was found to have been destroyed by a twenty-four hours' exposure to the fumes, in the proportion of 60 grammes of sulphur to the cubic metre (28 grains to the cubic foot). Even in the most refractory form, the sputa, the bacillus will be killed, but the full dose of sulphur is necessary. (e) Glanders; cultures of full virulence will be destroyed after twenty-four hours' exposure to the fumes of 60, and even 50 or 40 grammes (28, 23, and 19 grains) of sulphur to the cubic foot. (f) Typhoid fever; cultures of Eberth's bacillus from the morbid spleen : complete destruction after twenty-four hours with 60 grammes of sulphur. (g) Diphtheria; cultures supplied by Dr. Roux : after twenty-four hours and 60 grammes of sulphur all Kleb's bacilli were entirely destroyed. (h) Asiatic cholera; the only cultures procurable being rather old, the proof cannot be said to be quite satisfactory, yet the bacilli were easily affected by even small doses of sulphur. (i) Guadeloupe farcy; virulent cultures of this peculiar affection of the ox, obtained from Professor Nocard, were invariably rendered inert after twenty-four hours' exposure to 60 grammes of sulphur, but smaller proportions were unreliable.

Evidently therefore as our knowledge of antiseptics widens, the fact becomes more evident that each disinfecting agent has its special province, and each micro-organism its peculiar antagonists.

This instructive series of discriminating experiments explains why some good authorities speak so highly of sulphur fumes as an antiseptic, while others have pronounced them nearly worthless.

VALUABLE AUTHORITY ON SEWAGE DISPOSAL—SEWAGE FARMS—THE BERLIN FARM.

A recent Scientific Society Meeting in London, E., Dr. C. R. Drysdale, F. R. C. S., &c., read a paper on the sewage of London, Paris, and Berlin. (Sanitary Rec.) In his discourse he demonstrated that the only rational and satisfactory method of treating the sewage of large cities was that now employed at Berlin, Paris, Croydon, and at a few other places on a less extensive scale; and its agricultural application on suitable soils. In his opinion London presented a very bad example to other cities in the manner in which it dealt with the sewage of the metropolis by turning at least 150 million gallons daily into the Thames, at the outfalls of Barking and Crossness, and by unwisely and inadequately dealing with the solid matters. Glasgow and Dublin were even more lamentable in this respect than the metropolis. At the present time Paris had 1,500 acres of land cultivated by small proprietors, who made use of about 20,000,000 tons per annum to irrigate their farms. Some 3,000 acres had also been acquired at Acheres, which it was proposed to cultivate in the same manner; and still another sewage farm was contemplated. The effluents were perfectly pure, and were even drinkable. At Berlin the area of the sewage farms amounted to 19,000 acres. To these the sewage was pumped from twelve pumping stations, through pipes 40 inches in diameter, and most of the farms had been under cultivation during the past fifteen years. About 2,000 hands were constantly employed, and not a single case of typhoid occurred during the whole of last year. The general salubrity was vouched for by the fact of two convalescent hospitals having been established on the farms themselves. The crops grown were grass, roots, cereals, potatoes, cabbages, and fruit. Money to the amount of £3,211,000 had been borrowed for successfully dealing with the sewage of 1,500,000 inhabitants, while Sir R. Rawlinson estimated that the present sewage experi-

ments in London with over 5,000,000 inhabitants would cost 10 millions sterling for no purpose whatever. The Paris Commission recently sent to Berlin had reported a perfect success, and if the London County Council would send a Commission, their report must be equally satisfactory.

Berlin (from condensed report in sanitary News) is divided into twelve districts, which have each of them its own pumping station, which sends out the sewage of its part of the one and a half million of inhabitants composing the population of Berlin to the different farms purchased by the municipality. These pumping stations sent in the year 1888-89 44,919,000 cubic metres of water to the farms to be purified there. This means daily, and per head of the population, 103 litres; and as only 64 litres per head are furnished by the water companies daily, 38 litres per head are added from the rain-fall in the city and the various wells of salt and fresh water therein. The total extent of the farms used for the purification of the sewage is 7,614 hectares, which, at the rate of 2½ acres to the hectare, gives nearly 19,000 acres devoted to this purpose in Berlin. London has not a single acre utilized for the purification of its sewage. The farms situated partly on the north and partly on the south of Berlin. The southern ones, Osdorf, Heinersdorf and others, are most beautiful and successful farms, and about 71 per cent. of the ground of these farms is irrigated by the sewage; 96 per cent. of this irrigated part is drained. The length of the pipes which convey the sewage to the farms varies from 964 metres (about five-eighths of a mile) to 18,626 metres, or about 11½ miles, and the diameter of the main tubes varies from one metre to three-quarters of a metre. Once arrived at the farms the diameter of the pipes is lessened, and finally those used to convey the sewage to the fields do not exceed one-fifth of a metre. The conduits end at the highest point of the ground to be irrigated, and the most inclined fields are employed as

meadows, whilst the flatter fields are used for the cultivation of roots; and some fields are covered in winter time by sewage for some months, and then used for the production of cereals in spring. The water is conveyed from the highest point of the fields by ditches, half a metre in depth, and where root crops are concerned the sewage is allowed only to touch the roots of the plants; but in the case of meadows it flows over the whole surface of the meadow. The idea that such farms become unfit for use in some years by clogging up, and then unable to purify sewage any longer, is known to be erroneous, and after many years of use the sewage water is still only a slightly muddy fluid, and the effluent is pure, clear and inodorous.

With respect to the expense of the farm, the older portion cost about 8,000*l.*, which at 3½ per cent. would require 28,000*l.* as interest on capital. In 1889 these farms yielded less than this to the extent of 16,000*l.* which was all that the city of Berlin had to pay in aid of them, whereas, London has to pay an endless amount for the construction of useless tanks at Barking, sludge vessels, &c., and all without raising a blade of grass or a single root by the aid of her sewage.

In Frankfort the cost per head for classifying the sewage was found to be 1.22 mark; in Wiesbaden, 0.68 mark, and in Berlin only 0.48 mark, or about 5½*d.* per head of the population per annum. But the machinery used for the purification of sewage where there is no sewage farm goes on continually diminishing in value; whereas the sewage farms become always more and more valuable as property. So that both with respect to the condition of the effluent and the expense, the Berlin system is vastly superior to the London system. With respect to the effluent the thirteen years' experience of some of the Berlin farms shows how pure it is, and that it will always remain as pure is now ascertained. The effluent has almost no suspended solids in it, all being removed by filtration through the ground. Sometimes the effluent from the basins contains iron, and in such a case the water may be opaque and like lime-water. There were very few microbes in the effluent. In 100,000 parts of Berlin sewage arriving at Osdorf, there are about 16 parts of am-

monia, and in the effluent only a trace of this product. The amount of chloride is not changed by irrigation; 100,000 parts of sewage require 28 parts of permanganate of potash to oxidize it, and the same quantity of effluent required only two parts of the salt to do so. Of course all sewage contains far more salt than can be utilized by the plants; but this does not effect the excellent quality of the effluent. Grass lands purify rather better than root crops. Only 1-26th of the phosphoric acid contained in the sewage appears in the effluent.

The city of Berlin has taken advantage of the existence of the farms to employ a number of persons in agriculture. Some of the workmen receive in wages and kind of value of about 60*l.* yearly. The day laborers receive about 20*l.* and women about 10*l.*, with lodging and farm produce, which makes the yearly income of each family about 60*l.* also. There are also about 900 paupers who are employed on the farms according to their powers. The produce of their labor is estimated as about worth one-fourth of that of the ordinary laborers. The health of the population employed on the farms has been examined by Professor Virchow and found to be excellent. Thus, in 1889, there was not a single case of typhoid fever among them, although that disease prevailed in Berlin for a time in that year. That population consisted of 1,960 persons. There were only thirteen deaths in the year and of these only three were grown up persons, the rest were children. There was very little contagious disease among the employees; a few cases of measles, diphtheria and croup were mentioned. There was no evidence of any disease caused by the irrigations. Altogether, the experiment made in Berlin, and which might equally be made in London, is a splendid success. It is true that the situation of Berlin, in the midst of a plain, is favorable; but as Dr. Carpenter, of Croydon, has often taught, all soils can be used for irrigation if only too much is not put upon a soil that is unsuited for heavy doses of sewage. Eventually, said Dr. Drysdale, I feel sure that all cities will imitate Berlin. Only it is humiliating to think that London should lie so much in the rear of scientific practice, and require so much wakening up to make it attend to its own best interests in this matter.

SIR WILLIAM ROBERTS, M.D., F.R.S., &c., ON DIET IN MIDDLE LIFE.

EXTRACTS FROM AN ADDRESS DELIVERED AT A LATE MEETING OF THE MANCHESTER MEDICAL SOCIETY ;—IN THE BRITISH MEDICAL JOURNAL OF 18TH OCT.

THE last point I shall advert to is the necessity for a revision of the diet to meet those changes in the type of nutrition which naturally take place as the individual travels on from youth to age. Senescence invades the several organs and tissues in a varying order of time; and this want of synchronism is sometimes a source of trouble. When the hair falls off or turns grey before its time, our vanity but not our health is touched. When the teeth decay prematurely, we find succour in the invaluable art of the dentist. But if the prime organs and functions of the body age with unequal steps, the matter is more serious and less easily remedied. As years roll on the balance of nutrition alters; the exchange of material shrinks, and the organs concerned therein become correspondingly less active and less capable. In the normal course the palate and appetite adjust themselves automatically to these altered conditions, and there is a lessened intake of food. But sometimes this adjustment lags behind. The power of taking food continues unaltered, while the assimilative powers are on the wane; you have the palate and appetite of 30 with the liver and kidneys of 60. Some form of nutritive disorder necessarily follows. In most of these cases, but not in all, there is a tendency to stoutness. There are indications of digestive difficulties and of engorgement of the abdominal organs, and signs of that vague condition which is termed latent or undeveloped gout. The early recognition of this condition is very important, for thereupon depends the prevention or postponement of degenerative processes which hereafter prove formidable. In this conjuncture the observant medical adviser may render invaluable service in detecting the maladjustment, and in taking timely steps for its correction. The most obvious indication is to lessen the quantity of food, and this

is a task of varying difficulty. In many cases of this class—perhaps the majority—the maintenance of an undiminished ingestion of food rests on the force of habit. The accustomed quantity of food and drink is taken, though with a somewhat flagging appetite and lessening gusto. The still small voice of the dietetic conscience is unheeded; or even there may be a little forcing in of the supplies, from a mistaken notion that a falling off might prove disadvantageous, or of evil augury. In these cases an authoritative hint from the medical adviser is sufficient, and is readily accepted and acted on.

Full feeders are rarely aware that they eat too much. People constantly delude themselves on this point. I do not know how it is; men often are aware and acknowledge that they drink too much, but they hardly ever allow that they eat too much. They will tell you that they eat much less than most other men they meet with, and insist that they consider themselves to be moderate, or even small, eaters; and it is difficult or impossible to persuade them to the contrary. Possibly they are apt unconsciously to compare themselves with younger men. The medical adviser must in this matter rely mainly on his own judgment and on collateral evidence. In some cases however, there is much more difficulty in controlling the intake of food. The appetite is really strong, and the powers of digestion—at least of gastric digestion—are abnormally active. Unsatisfied hunger is a painful and an urgent guest, and, with plenty in hand, is hard to resist. The less concentrated forms of food are here a useful resource—green vegetables, salads, and thin soups—which help to fill the aching void without adding materially to the albuminoid and fatty ingredients of the meal. Tea and coffee are also serviceable in allaying an unseasonable craving for food. A stiff cup of tea or coffee shortly before

dinner certainly takes the edge off a troublesome appetite. It is, however, well to proceed cautiously and tentatively in this direction, for the promptings of Nature, however apparently to us misdirected, are not to be lightly set aside. The effects of a contracted diet should be carefully and patiently watched, with an open mind for every sign or suggestion, whether of warning to retreat or of encouragement to advance. I need hardly

add that in regard to this middle-life revision of the dietary, as it may be termed, particular attention should be given to the quantity of alcoholic beverages. As a very general rule the tolerance for these articles diminishes with advancing years, and it is necessary nearly always with persons who have used them freely to reduce their quantity when middle age is reached.

REPORT ON THE PREVENTION OF INFECTION IN SCHOOL-HOUSES.

THE following good suggestions are by Daniel F. Wright, M. D., Chairman of Committee on School Hygiene of State Board of Health, of Tennessee. An application had been received from the Bureau of Public Education, by the State Board of Health, asking counsel and instruction in regard to the means of preventing the spread of infectious diseases in and from public school buildings. The importance of the subject cannot be exaggerated, as there is no doubt but that such diseases, once being introduced into a community, the public schools are constantly found to establish points of infection from which the germs of disease promptly radiate throughout the community, distributing such maladies in every direction.

The provisions for preventing or abating as far as possible this evil, Dr. Wright says, must depend mainly upon the diseases to be provided against and their respective modes of propagation. Three of these modes require separate consideration, according as the typical mode of distribution depends upon (1) expectoration from the air passages; (2) bodily contact; (3) alvine discharges.

1. The expulsion of mucus, pus and other fluids from the air passages is not only the most efficient mode of distributing infectious material when it occurs, but prevails in a greater variety of diseases than any other. Diphtheria, whooping-cough, scarlet fever, when attended, as is almost always the case, with ulcerated

sore throat, and phthisis or consumption in its pulmonary form, are some of the diseases to be discussed under this head. The preventive measures in these cases vary according as the sputa are deposited on the ground or in spittoons or are distributed in minute spray through the atmosphere, which takes place more or less not only with every cough, but even from the ordinary respiration of persons so affected. This latter is by far the most fruitful source of diffusion, but we will give our first attention to the former. In the first place, school children should never, whether in health or sickness, be allowed to spit upon the floor, but should be furnished with spittoons—those of earthenware being preferable, as they can be more readily and more completely cleaned; and the cleansing should be done as soon as school is over every evening. Moreover, a large jug should be kept full of a solution of corrosive sublimate (about sixteen grains to the gallon), and a small quantity of this solution be poured into each spittoon immediately after cleansing. This would probably be omitted under ordinary circumstances, but during the prevalence of infectious diseases ought to be considered imperative. If it be found that spitting on the floor cannot be prevented (at least during the prevalence of the diseases under consideration), the floor should be washed every evening as well as the spittoons.

For the depuration of the air, which is much more important, different measures

must be adopted, according to the structure and furnishing of the school building. It can be much the most efficiently done where apparatus for rapidly changing the air in the school rooms is supplied—such apparatus as constructed by the Ruttan establishment, or that of the Hesse manufacture, both doing business in Chicago, are very efficient. Where either of these exists, the method of fumigation is very easy. Under ordinary circumstances it will be sufficient to keep the aerating apparatus in action for half an hour after school is dismissed, but during the prevalence of any infectious disease, fumigation by burning sulphur in every room should be first applied and then the aerating apparatus.

But it will be a long time before such apparatus can be adopted in all public schools, especially those in the country, and in these the best treatment will be to first burn the sulphur with closed windows, fire-places and other apertures, and then open them all, augmenting the draft in summer time by kindling a fire of shavings, waste paper or straw, and letting it burn for a few minutes.

2. BODILY CONTACT. Common sense

ought to suggest the precautions against infection by this means. I have seen of late school desks each made to accommodate a single pupil, and yet not very expensive nor occupying much additional room. Such furniture I would earnestly recommend where practicable, though I am aware that over-crowding is very difficult to avoid in communities where the school population is rapidly increasing beyond the possibility of school accommodation keeping up with it. The other measure is practicable anywhere, namely, a constant vigilance to prevent the admission of pupils affected by diseases communicable in this way; these are measles, scarlet fever, small-pox, chicken-pox—in short, all those diseases characterized by cutaneous eruptions. Not only should such cases be excluded from the schools, but children should not be admitted who live in houses where such diseases prevail.

3. Some diseases are chiefly communicated by means of discharges from the bowels of persons affected by them. The only possible precaution that can be adopted against this consists in the proper sanitation of the privies, closets, sinks, etc., attached to the schools.

VEGETARIANISM—THE OTHER SIDE.

HAVING recently written a good deal favorable to vegetarianism, much of which has been widely circulated by other journals, both in Canada and the United States,—The Popular Science Monthly quoting our view, and apparently with approval, “that as man in the savage state has, for the most part, been largely if not wholly carnivorous, he will, with the progress of civilization, probably become entirely vegetarian, or use only the products of animals” &c.—we now desire to note some points on the other side of the question. The most noticeable of these are from Dr. C. R. Drysdale, in the Sanitary Record (Lond. E.) of last month. After drawing attention to the arguments of the vegetarians in favor of their views, and especially to Sir Henry Thompson's pamphlet

on “Diet in relation to Age and Activity,” and “A Vindication of Natural Diet,” by Percy B. Shelley, “both being sold by the Vegetarian Society as containing opinions in unison with the doctrines of its leaders,” and to “the eminent hygienist, Dr. Benjamin Ward Richardson, who although himself not an abstainer from meat, has on several occasions spoken in public approvingly of the ideal of these latter-day food reformers, and apparently favoured the hope that a good time will come when mankind will no longer kill any animal for food, but live more economically, healthfully and pleasantly by the use of albumens furnished by the vegetable kingdom, which, he anticipates, will be in future probably chemically prepared so as to be as full of nutriment and as easily digested

as the flesh of sheep, cattle, fish, or fowl," Dr. Drysdale says: "As a matter of experience—and experience is now recognized to be the test of all truth—the human race, from the most remote ages, have made use of fish, flesh, and fowl, and, indeed, of all kinds of animal food." In this age of upward progress,—of constant betterment and improvement of the human race, this is very weak argument, especially for one so eminent in his profession as Dr. Drysdale, which we think we may drop here. Nor is it stronger argument that the Maories of New Zealand, who live chiefly on fish, are "most powerful, courageous and warlike." Mankind is not now aspiring to become warlike or possessed of this sort of animal courage.

True, as Dr. Riant reminds his hearers, that when the Rouen line was being made both French and English workmen were employed. "The smaller working powers of the French labourers were striking and humiliating. The English workmen did more work, and, in spite of this, were less fatigued. The reason was looked for, and it was a very simple one. "The English workmen," says Dr. Riant, "eat a great deal of roast beef. Whilst the Englishman was devouring his roast beef, the Frenchman was eating a *tasty salad*, destitute of nourishing principles. Thus the poor Frenchman was overwhelmed with fatigue, and unable to continue the work, which the well-fed Englishman performed without suffering. The French workmen were then put on the English diet, and soon accomplished as much, and sometimes *even more*, than the latter; for, besides that their strength became equalized, the Frenchmen exhibited greater energy, arising from their temperament." No one would contend that mankind could live and progress on "tasty salads;" nor even on "vegetables," as now commonly understood, and such as some of the African tribes, referred to by Dr. Livingston, subsist on. Nor is the boiled rice of the Hindoo and Japanese sufficient for the fullest nourishment and sustenance of the more perfect man. (Yet the Japanese are regarded as a very clever, able people,

even although they have not great muscular vigor.) Anatomically speaking, it is true also that if we examine the intestinal canal of man, and of the herbivora and carnivora, we find that the canal. "Is of enormous extent in most herbivorous animals, being in the sheep about twenty-eight times the length of the body. In the purely carnivorous animals, on the other hand, it is comparatively short, being in the lion only about three times the length of the body. In man it is only about six times the length of the body." This however but indicates that man is not intended to subsist on grass and such coarse fodder, but requires more concentrated foods, such as cereal grains and their chemically prepared albuminous products, and probably the products of animals, as milk and eggs.

We should like to write further on this interesting subject, and note more of Dr. Drysdale's points in his able and exhaustive paper, but space forbids it.

We agree with him in this, that: "The dislike to animal food at the present day is greatly based on the idea that it is cruel to kill animals. But it is clear that if domestic animals were not eaten, flocks and herds would not exist. The landscapes of Western Europe would be as destitute of cattle and sheep as the rice districts of China. It must be remembered, too, that the life of a well-fed animal is a remarkably tranquil and agreeable one. And as these animals have no apprehension of death, if their slaughter be painless, as it ought to be, there is a far greater amount of happiness for sentient beings afforded by using them as food, so that, on the score of humanity, vegetarians have not the strong position to which they lay claim." Yet, the very act of slaughtering and bleeding animals is rather opposed to the finer human feelings, and is not elevating.

A LAW is in force in England giving to the health authorities power to tear down any building which may be deemed injurious to public health, and also to regulate the number of inmates of any house.

NOTES ON CASES OF DIPHTHERIA IN ANIMALS AND IN MAN.

THE following is a summary of an investigation carried out during an epidemic of diphtheria in Buenos Ayres, by James T. R. Davidson, M. D. Edin., late house physician to the Edinburgh Royal Infirmary;—from the *British Medical Journal* of October 25th, ult.

During the last few years diphtheria has taken a firm hold on the population of Buenos Ayres. It is the custom in this city to publish in the daily papers mortality tables showing the diseases which have proved fatal, and the houses where the deaths have taken place. With the object of finding out, if possible, the causes of this epidemic, I undertook an investigation, taking as a basis the deaths occurring during the first half year of 1889. I examined the mortality tables, and by their means I was enabled to find 260 houses where patients had died from diphtheria during those six months. I visited each of these houses, and obtained personal information as to the special conditions in which each house was placed.

The facts gathered enabled me to affirm that the great cause of the present epidemic of diphtheria in Buenos Ayres is the presence of animals, especially hens and horses, in yards, without any pavement, or hardly paved. Most of the houses in Buenos Ayres have what are known as "patios." There are open spaces within the houses. Some houses have three or four "patios," and frequently, especially amongst the poorer classes, the back "patio" is not paved, it is damp and hens are kept on it. Hens which live on these damp soils become a prey to diphtheria, and children who play in these back yards contract the disease from these hens.

Of the 260 houses which I examined I found that hens were kept in 145, and of the remaining houses hens were kept in houses immediately adjoining in 35 instances, the separation of the yard in some cases being so insignificant as to make the two houses a single one.

I found that 35 per cent. of those who died from diphtheria lived in houses

where horses were kept, or in houses immediately adjoining stables. Mention may here be made of the statistics of some of the European armies with relation to diphtheria mortality. In the French army there are three times as many deaths from this disease amongst cavalry as amongst infantry troops. The same holds good for Germany. Diphtheria is three times as fatal in the cavalry as in the infantry regiments, while in Hungary the disease prevails very little in the army, but where it does prevail it selects its victims chiefly from the cavalry regiments. I found that of the houses where diphtherial patients died, and where some of the following animals existed—horses, hens, pigeons—85 per cent. had back yards without any pavement, or with very imperfect ones.

Of the 260 houses examined, I found that in 205, horses, hens, or pigeons were kept either in the house itself, or in the house immediately adjoining.

I found out the following practical cases pointing to the direct infection of children from hens affected with diphtheria. 1. In Corrientes Street, a child, 2 years of age, died in the month of January. The house had a single storey, and had a back yard without pavement. A few days before the child took ill two of the hens which were kept in the house had ulcers in the throat. 2. In California Street, two children, one 2 years old the other 4, died in the month of March. The house was a lodging-house, and had a back yard without pavement. A few days before the children died two of the hens which were kept in the house died, having "made a strange noise with their throats" during their illness. 3. In Europe Street, a child, 3 years of age, died in the month of April. Lodging-house, with back yard without pavement. A month before the child died the hens sickened with an "affection of the mouth." 4. In Salta Street, a child, 9 years old, died in the month of April. House had a back yard, without pavement. There

weeks before the child, several of the hens died with "ulcers in the throat." 5. In Talcahuano Street, a child died from diphtheria (all these cases that I am relating died from this disease). This child was in the habit of playing all day in the back yard, where the hens were kept. In those days when the child sickened, several hens died from an affection, where the "throat was swollen, and membranes were extracted from the nostrils." 6. In Jehallos Street, two children died of diphtheria in the month of May. Back yard without pavement. A month previous to the death of these children the hens suffered from ulcers in the throat. 7. In Belgrano Street, a girl, 16 years of age, died of diphtheria. The yard was paved, but imperfectly so. A hen house was kept in the yard. A few days before the girl died two of the hens had suffered from ulcers in the throat. 8. In San Antonio Street there is a large lodging-house, where several children had died of diphtheria at different times. There is a yard without pavement. The man in charge of this house informed me that it is a common thing for the hens kept there to suffer from ulcers in the throat. 9. A physician in Buenos Ayres lives in a two-storey house. On the ground floor a hen house

is kept on one of the "patios." One day he saw one of his children playing amongst the hens, and reminding that he had once assisted at a fatal case contracted from a diphtherial hen, he called out to his child to come upstairs. Next day the child sickened with diphtheria, and subsequently died. It was found that the hens at the time were suffering from ulcers in the throat.

These cases which I have selected would of themselves point strongly to the direct infection of children from hens and other animals; but, taken in conjunction with recent observations made in England and on the Continent, they are a strong testimony to the truth of the theory which ascribes diphtheria in animals to the presence of a damp soil, and diphtheria in the human subject to contagion from animals so infected. I do not for a moment wish to state that diphtheria in the human subject has no other origin than that just mentioned. It is, however, ascertained that diphtheria in the human subject may be due to dampness, to the removal of mixed deposits of vegetable and animal matter after they have been in intimate union for some time, to infected milk, and lastly, but very rarely, to infected water.

MISCELLANEOUS NOTES AND EXTRACTS.

PROFESSOR VAUGHAN ON INFECTIONS.

Bacteria alone, even those of the most virulent type, are not capable of causing disease, unless the conditions be favorable. . . . The spread of infectious diseases is combated and limited by the physiological resistance of the living body. This has been demonstrated to be true in the case of the lower animals. The domestic fowl, in its ordinary condition of health, is not susceptible to inoculations with the bacillus of anthrax; but, as Pasteur has shown, if the temperature of the fowl be lowered by the continuous application of cold water to the surface, it falls a victim to the germ. On the other hand high

temperatures weaken and enervate the frog. At his normal temperature this animal possesses complete immunity against anthrax, but when weakened by being kept in warm water, it also becomes susceptible. There is, then, inherent in all animals, and manifest to a greater or less extent, physiological resistance to the infectious diseases. Were this not true the world would have long since been depopulated. If water laden with the germs of cholera or typhoid fever be taken into the stomach, they will survive or not according to the predominance of one or the other of the following conditions. 1. The number of germs introduced is one factor.

The greater this is, the more probability is there that some of the micro-organisms may pass on into the intestines. 2. The amount and quality of the gastric juice is the second factor in the prevention of the intestinal infectious diseases. But much water is taken between meals, and at a time when there is no gastric juice in the stomach. The germicidal action of the pyloric juice which is present in the stomach during the intervals of digestion has not been tested experimentally, so far as I know. However, the water taken into the stomach when empty is absorbed directly from its walls, and if these walls secrete a germicidal fluid, it is highly probable that they are able to destroy germs at any time. There are probably other preventive factors resident in the alimentary canal, which future investigations will discover. 3. The agent which is most potent in the prevention of infectious disease through the tissues is the blood. The germicidal properties of this fluid have been abundantly demonstrated. A healthy condition of the blood and lymph is therefore an important factor.

NATURAL SELECTION THE HOPE OF WOMANHOOD.

Grant Allen: in the Forum Happily women have still a vast body of friends left—friends who will succeed in saving womanhood from the “advanced” women who would fain abolish it—and these friends are, as might naturally have been expected, the men. In spite of all that lady lecturers and anti-feminine old maids can do to unsex their sisters, men will for the most part continue to choose their wives—the mothers of future women—from the most womanly of their kind: and so will aid and abet in handing down to coming generations those fine and beautiful feminine qualities which the recalcitrant manish women of our age are so anxious to disown in favor of male peculiarities. Sexual selection will here, as elsewhere, play its beneficent part, and secure the survival of all that is best and noblest in the gains of our race. Men will protect against the enemies of womanliness in their own sex. The celibate lady lecturer will die unrepresented: the woman with grace, tact, high emotional endowments, pure womanly gifts, will hand down her exquisite and charming qualities to other women, her likes, after her.

WHAT CONSTITUTES A NUISANCE.

The Concord, N.H. Board of Health gives the following on this: The Board or its members are oftentimes asked, what constitutes a nuisance, and therefore it may not be amiss to define the term. This would hardly be necessary were it not for the fact that many people seem to regard it as one of their inherent rights to do as they please, so long as they do not trespass upon the domain of others. Very often such people seem to forget that there is any difference between the sanitary condition of the town and the city. It does not occur to them that there must be vast differences in the social compact between the farmhouse with its wide-spread acres, and the house-lot in the city that is measured in square feet, and that conditions that might constitute a nuisance in the one place might be of importance as a necessary adjunct to the other. Strictly speaking, any use of property annoying to another's rights is a nuisance. Still, two things are necessary—a right and an injury. To illustrate: No matter how much your refined taste may be violated by the architectural structure of your neighbor's house, it is not a nuisance because no right is violated. So one may not like the looks of his neighbor's pig-pen, still one can look the other way; but so soon as that pig-pen gives off offensive odors, as it will in hot weather, it is a nuisance, because every person has a right to pure air. The nuisance need not be injurious to health: it is enough that it is annoying and offensive to the senses. Most nuisances may be classified as violations of our right to pure air and pure water, the practical inferences being that in the management of our own affairs we should not be unmindful of the rights of our neighbors; and we would add that in no place can the golden rule be better applied than in matters relating to the sanitary conditions of local districts in a small city.

IMMUNITY FROM BACTERIA IN SOILS.

At the late annual meeting of the Sanitary Association of Scotland, Dr. Nasmyth said: In the laboratory, by providing a specially prepared food suitable for the needs of each individual case, and by careful regulation of the temperature and moisture of the air, many disease-producing organisms can be cultivated; but when

an individual organism, say, for example, the cholera bacillus, gains entrance to the soil, it by no means follows that it will meet with the necessary conditions of food, moisture and temperature. If the ground were polluted with faecal matter, then this is a suitable medium, but the temperature must be between 60° and 70° F., or if the temperature be so high that drying of the bacillus takes place, this is fatal; if the soil is acid, this is fatal, nor can it grow in a water-logged soil. Another powerful antagonistic action is the growth of the various organisms of decomposition (Saprophytes). It is one of the many wise dispensations of providence that our enemies can only attack us after we have, with the most perverse ingenuity, broken all the laws which regulate health, and a visitation of cholera is a sanitary reformer needed now and again to put matters right. Although microbes may not develop and multiply in the soil for want of the necessary favouring conditions, it must not be forgotten that they may be latent for long periods, especially in the spore forms. Thus the anthrax bacilli, which form spores, may remain latent for a very long period, probably years, and finally develop when the necessary conditions are provided.

DR. RICHARDSON ON VEGETABLE AND ANIMAL FOODS.

I do not hesitate to say, observes Dr. B. W. Richardson, that this consideration brings us face to face with that system of feeding which is called "vegetarianism." We have not to consider how to avoid living on such a purely animal and natural food as milk, for example; we are not to consider how to learn to live on vegetables which contain more water than the 75 per cent. of water which is present in legs of mutton and in other similar animal foods. But we really ought to consider the question of utilizing, on a large scale, all vegetables which, in nutrient value, stand above animal products. We have also to learn, as a first truth, that the oftener we go to the vegetable world for our food the oftener we also go to the first, and, therefore, the cheapest source of supply. The commonly accepted notion that when we eat animal flesh we are eating food at its prime source can not be too speedily dissipated or too

speedily replaced by the knowledge that there is no primitive form of food—albuminous, starchy, osseous—in the animal world itself, and that all the processes of catching an inferior animal, of breeding it, rearing it, keeping it, killing it, dressing it, and selling it, mean no more and no less than entirely additional expenditure throughout for bringing it into what we have been taught to consider an acceptable form of food, the veritable food which the animal itself found without any such preparation, in the vegetable world. With the light of these natural facts filling the national mind, the tendency of all advanced scholars in thrift should unquestionably be to find out plans for feeding all the community, as far as possible, direct from the lap of earth: to endeavor to discover how the fruits of the earth may be immediately utilised as food; and to impress science into our service, so that she, in her laboratories, may prepare the choicest viands, minus the necessity of making a lower animal the living laboratory for the sake of what is just a little higher than cannibal propensities.

VENTILATION OF SEWERS.

At the congress of the Sanitary Association of Scotland, Mr. J. D. Watson, of Arbroath, read a paper on the subject of Sewer Ventilation. He said he had been instructed to prepare a report for the local authority of Arbroath upon the best mode of ventilating the drains, and for that purpose he had communicated with fifty-five towns as to the methods adopted by them. Six of these towns had no system of ventilation; in ten the sewers were only partially ventilated. In the towns where ventilation had been appreciated, the favorite method was to bring up a square shaft or manhole from the sewer, and protect it at the street surface by a cast-iron box, fitted with a lid partly open and partly closed. In eleven towns, shafts were carried up the sides of houses; in six, there were communications with chimney-stacks; in five, rain-water conductors were used for ventilating purposes; in two, the foul air was passed through charcoal placed in trays over the man holes; and in Blackburn, the sewers were connected with special shafts for the purpose of conveying the gas above the houses. Having discussed these various methods he recommended the adoption of the system of open manhole shafts pointing out, at the same time, the imprudence of allowing exhaust steam to be blown off into the sewers, for the liberation of foul gases was likely to aggravate existing dangers.

THE LIME KILN CLUB AND HYGIENE.

“ ‘My frens, de aiverage man comes mighty nigh being an idiot in takin’ car’ of hisself. You hev seen him wearin’ a fur cap on his head, while his shoes let in de snow and water. He wears an obercoat on his back, an’ nuffin’ but a thin shirt over his chist. . . . An’ he’s ailin’—ailin’—or thinks he is. It’s herb teas, root tonics, pills, plasters, an’ cures, until de balance wheel in his machinery comes to a dead stop. [Applause.] Natur’ wants to keep goin’, but she can’t. He drinks whisky and dat clogs de valves. He drinks beer an’ dat clogs de wheels. He pours down lemonade, giner-ale, buttermilk, ice-water, tea, coffee, an’ what not, an’ den wonders why de fires under his biler won’t burn. [Shouts of applause.] Take an ox an’ put him through a like performance, an’ he’d be dead in a y’ar. De simplest an’ plainest laws of health ar’ outraged ebery hour in the de day by de aiverage man. Did Adam smoke? Did Eve wear corsets? Did Solmon chaw terbacker? Did Ruth chaw gum? Did de children of Israel make for a beer saloon after crossing de Red Sea? Did Rebecca eat gum-drops an’ ice cream, an’ call for soda water? Adam was the fust man, an’ made perfect from head to heel. How long would he hev remained so arter eatin’ half a mince pie before goin’ to bed? Suppose he had slept in a bedroom 6x8, wid de window down, de doar shet, an’ two dogs under de bed? [Yells of applause.] Supposin’ Eve had laced herself up in a corset, put on tight shoes, sot up all night, eaten her fill of trash, and sizzled her ha’r? When you cum to look into de way man misbehaves hisself, you can only wonder how he eber libed to get dar.

IDENTITY OF CROUP AND DIPHTHERIA.

The American Lancet says: In spite of the fact that so many Boards of Health assert the practical indentity of croup and diphtheria, many physicians refuse to accept the evidence and persist in the belief that membranous croup is non-contagious. For the benefit of such we quote the following from the Monthly Sanitary Board: At Mansfield, Ohio, a serious outbreak of diphtheria has been traced to a case of so-called membranous croup. At the onset a child was attacked with what the attend-

ing physician pronounced membranous croup. The case was not reported to the Health Officer. The child died on Monday but was not buried till Wednesday. Scholars sat up with the corpse and a public funeral was held. Two children in the same family and one in the neighboring family were attacked about this time with genuine diphtheria. The Mansfield Board of Health will now require physicians to report cases of membranous croup, which will be dealt with in the same manner as cases of diphtheria. This is only another illustration added to the long list showing that genuine diphtheria may develop from exposure to cases diagnosed as membranous croup.

BAKING POWDERS.

When will people learn to buy pure cream of tartar and bi-carbonate of soda from a reliable house, and with a little rice flour, as we have repeatedly pointed out, make or mix their own baking powder, at one-third the cost of the best in the market and far better? The following agrees with the conclusions of Mr. MacFarlane, Dominion analyst: T. T. Wheeler in Science sums up numerous experiments thus: 1. The residues of all baking powders, no matter how pure may be their constituents, have a harmful effect upon digestion, due, probably, primarily to the fact that the salts are acted upon by the hydrochloric acid of the gastric juice with the formation of more soluble compounds, and that these salts may form organic compounds with albuminous bodies in the same manner as many of the metals do. 2. Calcium phosphate, on account of its great inhibitory action on digestion, must be regarded as a poor agent for the manufacture of a baking powder, while ammonium tartrate may be looked upon with more favor. 3. The presence of alum in a baking powder made with calcium phosphate greatly increases its retarding action. 4. The least harmful baking powder is one containing only the bicarbonate of soda and cream of tartar. The presence of any other chemical substance, however harmless in itself, tends to increase the complexity of the residue and impair the activity of the gastric juice.

EDITORIAL NOTES.

A WINTER CONSTITUTION and how to cultivate it is the heading of a suggestive article in Good Health for November. "Nature. . . helps us put on a winter constitution, which, if properly developed, will protect us from the cold. If, when the cold change comes, instead of stimulating the action of the skin and kindling the furnace fires of our body with a great amount of pure oxygen from out-of-door exercise, we shut ourselves up in close warm rooms, we will doubtless have colds all winter. Some people keep their houses warmer in the winter than in the summer—from 80° to 85° most of the time. Then when they go out, not being fortified by a winter constitution, but with the skin relaxed from a close, hot atmosphere, they cannot help taking cold."

WANT OF WINTER VENTILATION, we contended in our October issue, is responsible for a very large proportion of the high March mortality which is recorded every year in this country. It too, prevents the development of the desirable winter constitution. Living in rooms which are kept too warm, is probably a cause of the high March death-rate but little less fruitful than is the want of ventilation. Keep on being out of doors as much as possible as the weather gets colder. "Don't house up." Keep heavy overcoats and mufflers for the severest cold or stormy weather only, and never live in a room with the temperature of the atmosphere in it above 68°, or at most 70° F. ; better at 65°.

APPROPOS to our October strictures on the foul air of railroad cars, we find the following in a Massachusetts railroad journal: "Death from burning is the most horrible death a man can suffer, and it is on account of the torture connected with it rather than its frequency that we urge so strongly the adoption of locomotive steam-heating systems. It is certain that in railway travel much more of life has been destroyed by poor ventilation of cars than by fire. The destruction is not immediate or obvious, but no person can breathe the air which is sometimes found in cars without having his life shortened thereby. On many roads the ventilation of cars is unwarrantably neglected, to the injury of their business as well as to the injury of the health of the passengers. That road which takes the lead in having conspicuously well-ventilated cars will deserve and will receive public commendation and an increase of patronage."

AGAIN, in the Epitome, a medical journal, is the following: It would be difficult to conceive of a conjunction of circumstances more

directly aiding in the dissemination of consumption than is offered in the palace car. . . always badly ventilated, the vestibule car especially is close and hot, sixteen to thirty persons being crowded into a space which might make a small hall in a house, but never a bedroom for a pair of human beings. Somebody is always hurt by a draught, and windows are kept closed to prevent ventilation as well as ejection of sputa, which is mostly deposited on the floors, and the temperature is raised to a degree sufficient to rapidly disseminate infectious matter. Consider now that it is or has been recently occupied by a consumptive patient, if only en route for a change of climate, and that through ignorance, carelessness or weakness, there comes to be deposited upon curtains, etc., tuberculous matter. What becomes of it if it be not dried and disseminated through the car, or gradually into the lungs of the tired traveller?

THE CONNECTION between poverty and disease, and the desirability of some measures being adopted by which may be in some marked measure lessened the tremendous difference now found between the very rich and the very poor have been recently well illustrated by Dr. C. R. Drysdale, of London, Eng., who says that at present the average age at death among the nobility, gentry and professional classes in England and Wales is fifty years; but among the artisan classes of Lambeth it only amounts to twenty-nine; and while the infantile death-rate among well-to-do classes is such that only eight children died in the first year of life out of one hundred born, as many as thirty per cent. succumbed at that age among the children of the poor in some districts of our large cities.

SOME MEMBERS of the Ontario Board of Health, it appears, had stated that there was no antidote for poisoning by carbolic acid, or something to this import, some medical practitioners have been correcting the statement in the daily press and naming several antidotes. In Notes on New Remedies for October we find bearing upon this the following, which is confirmatory of the antidote suggested by Dr. Burrows of Lindsay: Chemically, lime, or Saccharated lime, is the most valuable antidote for carbolic acid, and should be freely used rather than oils and glycerin, which combine with it and favor absorption. Alkalies or sulphates, as epsom or Glauber's salts, lessen the activity of the poison, and may be used in combination with vegetable demulcents for correct-

ing the destructive action upon mucous membranes and preventing rapid absorption. Common soap has lately been strongly recommended and may often be used in the absence of other preparations.

THE NEW YORK MEDICAL JOURNAL draws attention to a danger which is very liable to be overlooked: While the typhoid bacillus can at times be detected in the manure obtained from scavengers, no competent observer has, we think, detected it in the juices of vegetables that have been manured with that substance. The use of such manure is however not wholly free from danger, and vegetables that do not pass through the process of boiling in their preparation for the table should be cleansed from all foreign matter with unusual care. A certain portion of this fertilizer can not fail to lodge on the leaves and stems of such edible plants, as celery for example, peculiarly apt to hold bits of cess-pit manure, which filth will not be all disengaged and washed away by the ordinary process of cleansing for table.

OUR NATIONAL FOOD GUIDE, for October, is the title of a bright little sheet issued by the Ireland National Food Company of Toronto, with the good motto, "It is not what we eat, but what we digest, that nourishes us." It gives a good deal of information relative to foods, and those of their own manufacture in particular; and these we have often highly recommended, as being we believe the best prepared foods in the market. It appears that the Countess of Aberdeen was very highly pleased with them.

THE Sanitary Inspector, the organ of the Maine Board of Health, says that, "In this State the law makes it compulsory upon every city and town to keep a local board of health organized and ready at short notice to act for the protection of the public in case of emergency." This is what is boasted of in Ontario. But why wait for "emergencies"? There is always work for a board of health, in which respect it differs from a fire brigade. Causes of disease are every where and require an almost incessant combat.

THE ISLAND of Heligoland, whose name has lately figured so prominently, is another illustration of the microbe purity of ocean air. In 1888 only twenty persons died out of its population of 2,000. Of these twenty deaths, fourteen occurred in persons past seventy years of age, and none occurred among children. The average age of the twenty decedents was sixty-six and one-half years.

THERE is a law in Spain which has been in existence fifteen years requiring compulsory registration of architects.

DR. RICHARDSON says: If by some magic spell, England could wake up to-morrow clean, she would wake up pure also in spirit and godly in the recompensiveness of goodness. Cleanliness covers the whole field of sanitary labor. It is the beginning and the end: practiced in its entirety it would banish all disease from the world.

ON THE "Athletic craze" Dr. O. W. Holmes says: Whether the excessive development of the muscular system is compatible with the best condition of general health is, I think, more than doubtful. The muscles are great sponges that suck up and make use of large quantities of blood, and the other organs must be liable to suffer for want of their share.

DR. GABUZZI, (in Gaz. med. d'Orient) cites experiments going to show that the microphyte of cholera is sterile within the patient's organism, and that, in order to be rendered capable of conveying the disease, it must find a nutritive soil after being cast off from the system. The urine, he thinks, often constitutes a medium in which it may attain pathogenic powers, and personal uncleanliness may therefore be regarded as a predisposing cause of cholera.

PUT in a ton of coal or so extra to be used during the winter for ventilation,—for warming plenty of the outer pure air. It will be money well spent.

THE cheap tinware in such extensive use all over the country is said to be absolutely dangerous, the coating of the iron being adulterated with poisonous metals, principally antimony.

TWO ladies in Washington, says the New York Times, have opened a nurse for the instruction of mothers. Lectures are given, nursery improvements are exhibited, food cooked, and last, but not least, a baby is washed, dressed, fed and put to sleep by expert hands in the presence of the audience.

IN NEW YORK, directly in the midst of an immense baby population, a German and his wife recently started a bathing-house for babies, and during the past summer have done a rushing business. The charge of the bath is ten cents, which includes the dressing and undressing of the child and a thorough wash.

KOCH, in speaking recently of bacillides in tuberculosis said: Light is as potent as chemicals, sunlight killing a layer of tubercle bacilli in a few minutes or hours, according to the thickness of the layer. Ordinary daylight will exercise the same effect in from five to seven days.

SIR SPENCER WELLS, surgeon to the Queen's household, in an address on "National Health," to medical students on the first inst., concluded in the following words: Learn and try to do it well. "Not failure, but low aim is crime" (Lowell). Act in George Herbert's Spirit: "Acquit thee bravely, play the man,"—should we not say the gentleman? for "he is gentle who does gentle deeds" (Chaucer)—and so acting be sure that—

If thou do ill, the joy fades, not the pains ;
If well, the pain doth fade, the joy remains.

IN COMMENTING on the Benwell murder, the British Medical Journal says: "The theory of the prosecution was that the deceased had been murdered on the spot where the body was found, and that rigor mortis had probably set in within four hours—a theory quite in accord with the circumstances in which the death took place, and one which the prisoner's counsel was quite unable seriously to impugn."

SANITATION in the church. At a meeting of the Church Congress, held in Hull, Eng., the first week of the present month, the social aspects of sanitation was one of the subjects discussed, and the following was the programme: Acquaintance with and Obedience to Sanitary Laws a Christian Duty; Present Condition of Labourers' and Artisans' Dwellings, in view of Recent and Proposed Legislation.

DR. CHARLES R. DRYDALE, an eminent London physician, writing to the British Medical Journal relative to the discussion on the origin of diphtheria, says, he thinks that it never arises de nova. And that "It is probable that the bacillus of diphtheria lives longer in a damp place than in a dry one, and hence the danger of dark and moist habitations in the spread of this disease. It appears too that this bacillus grows well on milk; hence it is probably often, like typhoid fever, conveyed by means of this fluid."

A WARNING against undue physical exertion by those not accustomed to it is contained in this remark of the chief surgeon of the National Soldiers' Home at Dayton, Ohio. He said that of the 5,000 soldiers in the home, fully 80 per

cent. are suffering from heart disease in some form or another, due to the forced physical exertions of their campaigns.

THE Police Prefecture of the Seine has ordered that all cars used for the transportation of cattle to the abattoirs of Paris shall be thoroughly disinfected after each trip by thorough washing of all parts of the cars with a two per cent. solution of sulphate of zinc; the process to be carried out under the supervision of four veterinary inspectors.

PREMIER CRISPI, of Italy, according to the Sanitary News has just caused to be distributed to the representatives of Italy in foreign countries, a circular in which he proposes the convening of an International Commission with a view to institute a sanitary service for the Red Sea. This JOURNAL has suggested on several occasions that the organization of an International Commission or board to take into consideration, and later a certain amount of supervision of, the sanitary service of all countries would be a useful proceeding.

HIPPOCRATES, over 2,000 years ago, warned his disciples against the use of moist dressings on account of the danger of suppuration, and forbade the employment of drugs before the wound was dry. Above all says Galen, avoid dirt, as it prevents healing. The ancient Greeks boiled their water before applying it to the wounds.

CORSETS, notwithstanding all that has been said and written against them are still almost universally worn and will be for a long time to come. The least objectionable corsets, as admitted very generally by those who know and who have tried them, and so far as we can learn are "Balls Elastic Health Preserving Corsets," manufactured by Messrs. Brush & Co., Bay Street, Toronto. We know ladies who have worn these for many years, and who would not now wear any others.

BOVININE, Bush's Fluid Food, is a valuable nutrient and tonic and is becoming known to the medical profession most favorably. The great rapidity of its absorption and assimilation give it precedence over all artificial foods where prompt response is desired, as in case of collapse or exhaustion from hemorrhages or in acute diseases like typhoid fever or diphtheria. It is disposed of readily by the most enfeebled digestive powers. It is now being extensively introduced to the profession in Canada. Messrs. Lyman, Sons & Co., Montreal, are the wholesale agents for the Dominion.

NOTES ON CURRENT LITERATURE.

EQUINE ANATOMY AND PHYSIOLOGY, number 12 of "Blakiston's Quiz Compend," by Wm. R. Balon, M.D. (Prof. in N. Y. Col. of Vet. Surg.) has recently been issued. It is a neat volume of 200 pages, from which any one may obtain a very good knowledge of the structure and functions of the different parts of the horse. It contains twenty-nine graphic illustrations selected from Chauveau's Comparative Anatomy, and the facts and descriptions are given concisely, and are arranged under heads and sub-heads, making it easy for the reader to comprehend and remember.

IN THE ILLUSTRATED NEWS OF THE WORLD (Judge Building, 5 ave. New York) "The wonderful Adventures of Phra the Phoenician," retold by Edwin Lester Arnold, with its graphic illustrations, is becoming weekly more and more interesting; as also are the sketches of "Our own Garth Grafton," "An American Girl in London." The last issue, Nov. 8th, gives a full page portrait of Count Von Moltke; some funny sketches of "Cricket in India," by the natives; and others, pretty too, from "Carmen up to Date," as just played at the Gaiety Theatre, London. The number contains a dozen full page illustrations and sketches besides many smaller ones.

THE POPULAR SCIENCE MONTHLY will make a new departure in 1891 by publishing a series of comprehensive and fully illustrated articles on The Development of American Industries since Columbus. What shall we do with the "Dago"?—A puzzling question that seems likely to take rank with the Chinese problem—will be discussed in the December number by Mr. Appleton Morgan.

THE GRAPHIC, Chicago, for November 1st is an admirable number, containing some very fine and very pretty illustrations. The other three numbers of the past month have been rather above previous ones. This handsome weekly is printed on excellent paper, with clear type, and is only \$3 a year.

"ART IN HOUSE BUILDING" contains 20 large engravings of cottages, a school house and a church, which have been designed with a view to style, comfort and economy and are very pretty, with a full and complete description of all the designs and reliable estimates. The book is 7x9½ inches and printed on excellent paper, price 75 cents, post paid; Smith & Robinson, Architects, Altoona, Pa.

A GREAT AMERICAN MAGAZINE.

THE SUCCESS OF "THE CENTURY" AND ITS PLAN FOR 1891.

THE CENTURY MAGAZINE is now so well known that to tell of its past success seems almost an old story. The N. Y. Tribune has said that it and its companion, St. Nicholas for Young Folks issued by the same house, "are read by every one person in thirty of the country's population," and large editions of both are sent beyond the seas. A few years ago it was found that seven thousand copies of The Century went to Scotland. The Century about doubled its circulation with the famous War Papers, adding many more readers later with the Lincoln History and Kennan's thrilling articles on the Siberian Exile System. One great feature of '91 is to be

"THE GOLD HUSTERS OF CALIFORNIA," describing that remarkable movement to the gold fields in '49, in a series of richly illustrated articles written by *sartrios*, including the narratives of men who went to California by the dilapidated routes, accounts of the gold discoveries, life in the mines, the work of the vigilance committees etc., etc. General Fremont's last writing was done for this series. In November appears the opening article, "The First Emigrant Train to California," crossing the Rockies in 1841,—by General Bidwell, a pioneer of pioneers.

MANY OTHER GOOD THINGS ARE COMING,—the narrative of an American's travels through that unknown land Tibet (for 700 miles over ground never before trod by a white man); the experiences of escaping War-Prisoners; American Newspapers described by well-known journalists; accounts of the great Indian Fighters, Custer and others; personal anecdotes of Lincoln, by his private secretaries; "The Faith Doctor," a novel by Edward Eggleston, with a wonderfully rich programme of novelettes and stories by most of the leading writers, etc., etc.

It is also announced that The Century has purchased the right to print, before its appearance in France or any other country, extracts from advance sheets of the famous Talleyrand Memoirs, which have been secretly preserved for half a century—to be first given to the world through the pages of an American magazine. All Europe is eagerly awaiting the publication of this personal history of Talleyrand.

The November Century begins the volume, and new subscribers should commence with this issue. The subscription price (\$4 00) may be remitted directly to the publishers, The Century Co., 33 East 17th St, New York, or single copies may be purchased of any newsdealer. The publishers offer to send a free sample copy—a recent back number—to any one desiring it.

CHILDREN'S LITERATURE.

WHAT "ST. NICHOLAS" HAS DONE FOR BOYS AND GIRLS. Up to the time of the issue of the St. Nicholas Magazine seventeen years ago literature and children's magazines were almost contradictory terms, but the new periodical started out with the idea that nothing was too good for children; the result has been a juvenile magazine genuine with conscientious purpose.

It has been the special aim of St. Nicholas to supplant unhealthy literature with stories of a living and healthful interest. It will not do to take fascinating bad literature out of boys' hands, and give them in its place Mrs. Barbauld and Peter Parley, or the work of writers who think that any "gooey" talk will do for children, but they must have strong, interesting reading, with the blood and sinew of real life in it,—reading that will waken them to a closer observation of the best things about them.

In the seventeen years of its life St. Nicholas has not only elevated the children, but it has also elevated the tone of contemporary children's literature as well. Many of its stories, like Mrs. Burnett's "Little Lord Fauntleroy," have become classic.

The year 1891 will prove once more that "no household where there are children is complete without St. Nicholas." J. T. Trowbridge, Noah Brooks, Charles Dudley Warner, and many well-known writers are to the spirit of St. Nicholas into a prospectus, but the contributors during this coming year. Full features for 1891 and a sample copy sent to the address of any person mentioning this notice. Price \$3.00 a year. The Century Co., 33 East 17th St., New York.