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CANADA
HEALTH JOURNAL

A Monthly Review and Record of
SANITARY PROGRESS

—EDITED BY—
EDWARD PLAYTER, M.D.

Public Health and National Strength and Wealth.

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VOL. XII.

MAY, 1890.

No. 5.

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CANADA HEALTH JOURNAL.

A Monthly Record of Sanitary Progress.

VOL. XII.

MAY, 1890.

No. 5.

THE WORK OF LOCAL HEALTH BOARDS AGAIN.

SOMEWHAT like the work of the house-wife, the work of the local boards of health is "never done;"—there seems always something more to be done. The early spring is, however, usually the scavenger's "harvest time"—his services are then brought most into use. Waste matters will yet accumulate greatly during the severe weather of this climate. Cremation in the kitchen stove and elsewhere is not yet practised on the refuse of the kitchen as it should be, and altogether now in the month of May is the time of most active and vigorous war with dirt. If the boards were more active during the winter there would be less of this great spring work and war, and it would be much better for all concerned; and we desire now, by a "timely word," to impress the more upon the boards the desirability of so educating the people in their jurisdiction or municipality that there shall not be such a great hubbub at this most lovely spring time, when all should be most happy and serene. With the renewing of life everywhere in this beautiful season, the imperative work of the Sanitary Inspector usually breaks in, and during the whole season it is topsy turvy with most human beings, while birds and flowers are in the enjoyment of most happy and peaceful life. It was not enough for the provincial authorities to make provision for or demand a local board of health in every municipality, parish or district, and to be able to give large figures as to the number of local boards in their respective province,—not enough to be able to relate that two hundred or five hundred local boards of health had been already organized in the province. This is but the beginning—but the first step in the stair-

way to that dirt exterminated elevation to which all practical sanitarians are surely, if but slowly, wending their weary course. The next and more important and essential steps may be regarded as those by which all these boards are directed what to do and how and when to do it. Have any Provincial Boards, have any of the many neighboring State Boards, yet adopted any systematic means of directing the local boards in their work? The issuing of pamphlets of instructions on disinfection and on "What to do" in certain diseases is a great help to the boards, but it is far from being enough. The boards are but badly paid, if paid at all, in any manner or degree, for their valuable time and labor, and hence they cannot be expected to spend a season under tuition. By instinct almost, they have long ago come to know that the spring is a good and a safe cleaning up time. But preventive medicine has made progress, it has found out even that accumulations of dirt should be prevented; that vigilant, but easy, constant work by boards and by individuals is vastly better and safer than spasmodic effort, perhaps after a fatal stain has been made and to be forever left; and that the time for cleaning like the time for Godliness is ALWAYS. We would then at this impressive season urge upon all boards, urban and rural, the desirability of so educating their people in the future that they will use efficient means for preventing the accumulations which necessitate every year this terrible spring warfare.

FROM "Friend Olivia" in the Century: "If people speak ill of me, I ask what kind of people they admire, and then it often happens that I am quite consoled."

ELSEWHERE we have alluded to the desirability of endeavoring, by a little easy, peaceful work during all the year, especially the winter, to prevent this terrible annual spring warfare with dirt which devolves regularly upon every local board of health. It can be done, and if done would be a vast improvement on the present course: upon which, we venture to predict, no one would willingly "go back." But this preventive work has not yet been done, and in many hundreds of municipalities in Canada at this season there is a vast, a positively incalculable amount of cleaning up to be done, if human health and human life are not to be wantonly sacrificed. With some boards we have found a tendency not to be early at this cleaning up work. Some appear to think, for some unaccountable reason, that it is better to wait till a little later in the season. This is unquestionably a mistake—in some cases it may be a fatal mistake. The sooner the work is done, entirely and completely, the better, and it should by all means be completed before the hot season commences. It must be remembered too that often this hot season commences early. We think we cannot too strongly impress upon boards and inspectors and upon householders, the desirability of early and most thorough work. And it is not enough to get the great bulk of the dirt removed from the most conspicuous places. The inspector

must become for the time and occasion a veritable "Paul Pry," and look into every out of the way corner and see that it is effectually cleaned. Disinfectants, including plenty of strong fresh-lime wash, should be freely recommended and indeed insisted upon in all places whence filth has just been removed and about out-buildings generally. And rural inspectors have just as nice and important work, if not so much of it, to attend to as those of the cities and towns.

Besides this actual work, which has been long left for the spring cleaning, inspectors, if properly instructed, could now do much to make far less work for next spring. By timely suggestions and advice they could convince householders of the great advantage and economy of burning much of their refuse during the winter or of having much of that which cannot well be daily burned with present facilities at once or weekly carted away to more suitable, safer places than to be dumped in the everywhere existing "back yards" or laneways, to be left till spring; where the earliest rains falling upon the filth, wash much of the worst of it into the soil beneath, whence it often can not be removed, but must only be disinfected, when the preventive measure of earlier removal would have been vastly better. Now, then, is a good time to begin to prevent so extensive a warfare next spring as is necessary this spring.

THE PREVENTION OF INSANITY.

THIS is a part of the public health question which has not yet received much attention. The Superintendent of the Eastern Michigan Asylum for the Insane, Dr. Burr, recently read a valuable paper at a Sanitary Convention bearing upon this important subject. That the terrible affliction, insanity, in any form, may be caused by our own indiscretions, as it certainly may be, should more than any other sequence cause us to become specially interested in the preservation of physical health; and this affliction appears to be everywhere on the increase.

Insanity being merely an expression more or less profound of perturbation of the brain, has, like disease in general, ultimate causes, and the careful study of these and the dispelling of the mystery surrounding insanity have shown the latter to be largely preventable. An exaggerated idea exists as to the part which emotional causes play in the production of mental diseases. Mental disease is frequently the result, directly or indirectly, of the conditions which impair the general nutrition. Unsanitary surroundings, exposure to the contagion of communicable diseases, labour in ill ventilat-

ed rooms, intemperance and other causes which engender bodily illness are directly responsible for an incredibly large percentage of insanity. Ill health, especially tuberculosis, causes ten per cent. and contagious diseases cause three per cent. Much nonsense has been talked and printed by professional reformers about the effects of intemperance, some asserting that nearly nine-tenths of the cases of insanity are caused by intemperance. Statistics show that from eight to ten per cent. doubtless owe their development to the habitual and intemperate use of alcohol, opium and other narcotics. On the other hand the so-called emotional causes of insanity, as business perplexities, disappointed affections, domestic trouble, grief and anxiety, homesickness, popular errors and delusions and religious excitement, together comprise a total of but twelve per cent. of admissions; while of

these about one-third of all patients have their mental troubles ascribed to causes which lead to mental disorder through deprivation of sleep, disorders of appetite and digestion, and other conditions purely physical, and preventable.

There can be no doubt whatever that the judicious administration of public health regulations would prevent a large amount of the insanity which everywhere prevails. In estimating the costs of an abnormal death-rate with its excess of sickness and loss of time, the enormous expense of maintaining large and numerous asylums for the insane has never yet been, we believe, taken into consideration. This—the expense—is of course but of secondary importance, and the prevention of the mental aberration is the first, and is deserving of more attention from saitarians and statesmen.

ON THE MANAGEMENT OF CHILDREN.

IN a paper read before the New York Clinical Society a short time ago, by Dr. Walter Mendelson, the author gave some most valuable practical suggestions relative to the management of children. Assuming that a gouty constitution may be and frequently is produced by the improper management of children, Dr. Mendelson said: Given a family of young persons, what are the circumstances which may lead us to think that they may be victims to gout in later years? Here is a type of family that we often see. The grandparents are healthy people. Originally poor they have risen by steady industry to the accumulation of a comfortable income. The son, not contented with the slower means of making a living, engages in some business where speculation for wealth has in a great measure supplanted the slower principle of producing it. He necessarily leads a life of great nervous strain, makes a good deal of money quickly, perhaps often only after several trying reverses of fortune, and spends a good deal, too; lives high, drinks

champagne daily for dinner, and is perhaps a not infrequent imbibor of cocktails during business hours.

His wife leads a similar life of excitement in her way—in the sociable, charitable, or church line of activity. By the time the husband is forty he has well-marked gout in some of its many forms; perhaps deposits in the joints, perhaps cirrhotic kidneys. The wife, by this time is quite likely a confirmed dyspeptic, and has gone through several attacks of "nervous depression," or maybe she is a chronic neurasthenic.

When we come to the children, we find the elder ones the healthier, having been begotten when the parents were in better physical condition. They will all be more or less unhygienically brought up, according to the various grades of intelligence of the parents; allowed food of unsuitable kinds and quantities, and partaking at least in a partial degree of the life of excitement led by the parents. Fed on highly stimulating food, allowed to drink tea and coffee, and not infrequently wines,

these children grow up to be nervous and excitable creatures. They may be subject to "night terrors," to chorea, to sick headaches, and manifestations of a disturbed nervous economy even more grave. Or the chronic malnutrition to which they are subject may show itself in dyspeptic troubles or in skin diseases—notably eczema; or in a tendency to be croupy; to have bronchitis, and to be subject to attacks of acute amygdalitis. These children are very liable to "bilious attacks," characterized by feverishness toward bed time, followed, after a few hours of restless sleep, by vomiting and purging.

Placed in charge of such a family, the physician can, I am convinced by experience, do much to insure its members a greater share of physical well-being than might otherwise fall to their lot. For this, co-operation on the part of the parents, or of an intelligent nurse, is, of course, indispensable. But usually we can count on this, parental love making even the foolish wise. The first thing necessary is to attend to the general hygiene, drugs playing but a subordinate part. And here regard to diet is of prime importance, and usually we will find that our efforts will have to be directed chiefly to securing a simpler and more rational diet.

Most children, up to the age of three or four, especially if in charge of a nurse are systematically overfed. There is apparently a tendency to regard children of that age more as prize cattle in training for exhibition at a county fair than as a material out of which rational beings are to be shaped. If a child is fat and dyspeptic, is inclined to bronchial and intestinal catarrhs, to amygdalitis, to eczema, and to bilious attacks, you will find as a rule, I think, that it is being overfed and its diet is too uniform. It is a common error to give a child one kind of food too exclusively, and this either farinaceous or animal. Some get too much of one, some too much of the other, and many too much of both. Children often get too much animal food, especially eggs, with the idea that it is "strengthening," and not enough green vegetables and fruit, because these are supposed to "upset the bowels."

A judicious combination is what we

must insist on. And, as a rule it will not be necessary to either proscribe or prescribe certain foods, except on the lines just indicated. The diet of small children should be largely farinaceous, I think, except where there is a tendency to flatulent dyspepsia, whether of the stomach or bowels. Many little patients in whom eczemas are imputed to too starchy a regimen, will be found on inquiry to be really suffering from a want of those alkaline salts which normally are introduced into the system through the medium of green vegetables and fruit. Hence I insist on children being brought up to eat such vegetables as are in season (with certain exceptions—such as corn, cabbage and egg-plant), and to have plenty of fruit—raw in summer, stewed or baked in winter.

The change of a peevish, sickly little glutton to a bright and amiable child, which a judicious alteration in the amount and kind of diet will often produce, is one of the most gratifying results in medical practice. In older children the dangers of constant indulgence in rich and highly seasoned food, in pies, pastry, cake and desserts generally, can not be too strongly insisted on. But, above all, we must condemn in unmeasured terms the use by children of nerve stimulants, whether alcoholic or in the shape of tea and coffee.

In children, next to attention to diet are the subjects of clothing, bathing and exercise. Just as most children are overfed, so too are they overdressed, in the sense of having too much on, and that not properly made. The habit of putting a great number of woolen clothes upon a child, which I find to be common, is the cause of much illness, especially as most houses are overheated by a furnace . . . The clothes of children should be few in number, and should be so made as to hang free from the shoulders, leaving the body entirely untrammelled. Bathing—sponging in cold water in a warm room—should be insisted on, followed by a good rubbing to stimulate the circulation in the skin. As for exercise and fresh air, I believe that, unless children are absolutely sickly, they should be sent out in all sorts of weather, no matter how inclement it may seem. If

it rains give them rubber boots and water-proofs, and let them have a good time wading in the puddles, of which our New York streets always afford an abundance of variety during a storm.

In recommending such a course of hardening I am well aware that there will always be found a certain number of children who can not stand it, and a vastly greater number of parents who are opposed to trying it. But where there are twenty children of whom it has been thought that they were of too delicate a

nature to bear such treatment, there will perhaps be found but one of whom this is really true. In fact, it is often the so-called delicate ones—those who have been shielded from every draught that blows—who need it most and thrive under it best.

These remarks upon prophylactic treatment in children will then be seen to resolve themselves simply into regulations for keeping the child in the best health possible, paying particular care to the digestion.

MICROBES—BACTERIA—DISEASE GERMS.

IT is very popular to talk of microbes, said Dr. J. G. Johnston, at the Kings County, N. Y., Medical Society meeting, recently. We hear the term in almost every one's mouth, and yet of the many thousands who use the word so glibly, how few know its meaning or derivation. You will seek for it in vain in any dictionary or its definition in any medical book. For a long time there was a dispute as to whether these disease germs were animal or vegetable, and the word microbe was adopted as a common term which every one could use. It comes from mikros, small, and bios, life. These "little lives," as microbes mean, was a term that every one could use, whether he believed these "little lives" were animal or vegetable. Webster's definition of an animal as having sensation and motion had to be abandoned, because it was shown that there were vegetables that had both sensation and motion. Finally, Pasteur compounded a fluid entirely of minerals, furnishing only carbon, hydrogen, oxygen and nitrogen, in form easily obtainable, and it was found that these microbes could subsist on this. A new distinction was made between animal and vegetable life—that is, that an animal must have some other animal or vegetable life to subsist on; while a vegetable can live on the mineral world. As it was found that these disease germs would subsist on either animal, vegetable, or min-

eral world, wherever they could easily obtain carbon, hydrogen, oxygen, and nitrogen, all bacteriologists now class them as vegetable organisms. Chemistry cannot detect these disease germs. In water standing the severest tests of chemical purity, typhoid bacilli have been found, enough to infect a whole village. No chemist with the finest reagents in his laboratory can show any difference in the pestilential air in the rice swamps around Tybee Light or the pure air from the top of Chimboraza Mountain. Chemistry can show no difference between an air laden with the yellow fever poison and the air we breathe. The microscope alone cannot tell disease germs, because in every mouth, on every tongue, and on every portion of the skin, are multitudes of germs. But which of these germs are hurtful and which harmless the microscope cannot determine. Culture alone can do this.

From an instructive lecture delivered by staff-surgeon Schjerning before the Military Medical Associations at Coblenz, Prussia, on the subject of "Microorganisms in their influence on hygienic questions," the following will be of interest:

(A.) Endogenous Bacteria:—These are necessarily parasites; they only thrive in the human (or animal) body, and their propagation, consequently, takes place, almost exclusively, through immediate contact with sick persons, etc., and re-

ception of germs emanating from them. Soil and water have no connection with them, air alone may possibly favor their propagation. 1. The *Bacillus tuberculosis* (of R. Koch, 1882). Little bars with production of sporules, and in sputa. On account of the form in which it is persistent, efficient for months and endowed with a great power of resistance; without spontaneous motion. The mode of introduction is produced by inheritance or through the lungs, the intestines (milk and sputa). Through wounds, as inoculative tuberculosis. 2. *Scarlatina* and *Morbilli*. Measles: a *Diplococci*? *Scarlatina*: Klein's *Bacillus*? Mode of introduction, epidermis and mucus membrane. 3. *Bacilli diphtheria* (Loeffer, Kleb.). Mode of introduction, through oral and laryngeal cavity. *Bacillus syphilis* and others are mentioned.

(B.) *Ectogenous Bacteria*.—These are facultative parasites, their growth takes place in the human body and also on lifeless substratum, their transmission is consequently of a more manifold type, from man to man, through soil, water, air, aliments and inanimate objects. 4. *Anthrax Bacillus*. Pollender, Rayer, Davaine 1863, Koch. With resistant sporules which are developed outside of the human body. Introduced through injured skin, through the lungs, through the intestinal tract (by means of sporules). 5. *Bacillus typhoid*: Eberth, Koch, Gaffky (1884). Facultative parasite, probably with sporulation; retaining its vitality for more than three months. Mode of introduction, through the mouth. 6. *Traumatic infectious diseases*, *Bacillus pyocyaneus* and others, including *erysipelas*. Mode of introduction through wounds and natural apertures of the outer skin. 7. *Bacillus tetanus*: Mode of introduction through wounds of the skin. 8. *Cholera*.—*Comma bacillus* of Koch. Not very resistant, decaying at 50° and by desiccation. Introduced through mouth and intestinal tract.

In Koch's bacteriological course in Berlin for medical men, it appears they start with non-pathogenic organisms, such as the mould and yeast—white, black and

rose. The cultivations are all chiefly on gelatine and sliced potato. They pass from these ordinary forms of micro-organisms to the parasitic organisms, the greater number of which accompany specific diseases. The first of these was examined, says Dr. Sibley, writing to the *British Medical Journal*, was the bacillus of anthrax: we proved how this bacillus grows at the ordinary room temperature, but never in acid mediums. It does not spore in the animal body, nor under a temperature of 16° C. or over 37° C.; it does not spore in gelatine, but on potato, or when grown in broth. Growing artificially, it forms long interlacing filaments. When inoculated, it causes splenic fever and rapid death in guinea-pigs, mice, and man. It was demonstrated that animals fed on the bacilli without spores received no harm.

The bacillus tuberculosis is difficult to cultivate, as it grows only on agar-agar when glycerine is added and on serum, and only between the temperatures of 30° and 42° C., and then very slowly. The characteristic point about the method of tubercle is that it grows and extends over the fluid at the bottom of the test tube and then up the glass on the opposite side, thus differing from any other known bacillus culture; spore formation of this bacillus has never been actually demonstrated.

The bacillus of glanders, pathogenic in horses, asses, man, guinea-pigs and field mice (not in other mice), producing generally catarrh of the mucous membranes and nodules in the lungs very like tubercle; the bacilli also closely resembles tubercle bacilli. It does not grow at room temperature, but on agar-agar or potato in the incubator.

The cholera or comma bacilli are readily destroyed by drying; thus if a drop of broth containing them on a cover glass be dried in the air, they are found all dead in about three hours. Hence Cholera should be easily prevented.

The bacilli of typhoid fever, found abundantly in the spleen, lymphatic glands and intestines of patients dying from the disease, are very active, and no

spore formation has been demonstrated. They have a very characteristic appearance when grown on potato, the surface of the latter appearing covered with a moist pale-brown down. If injected into the veins of animals, in some cases the same appearances are found in the intestine and spleen.

The Small-pox Microbe, it is said, has at last been discovered by Dr. Sicard, of Beziers, in a memoir recently handed in to the French Academie de Medecin. He reports it to be a bacterium belonging to the class of cocci; round, with a transparent centre, umbilicated in the middle, while its edges are raised. It can be readily cultivated on gelatin that has been sterilized by bichloride of mercury. It may be found at all stages of small-pox, not only in the pustules of the skin, but in the mucus of the bronchial tubes and in

the blood. It is likewise found suspended in the air of rooms containing small-pox patients, and if water be allowed to stand in such rooms in open vessels, it soon contains the small-pox bacterium.

PROFESSOR KLEBS, of Zurich, it is said, (Brit. Med. Jr.) who has made a thorough examination of the blood of many patients suffering from influenza, as recently so prevalent, has found in it enormous masses of flagellate monads. These were of two forms: a smaller, with very active movements of the flagella (whip-like appendages), and a larger, with much slower movements. In specimens stained with methyl blue Prof. Klebs observed that the monads were sometimes on the edge of the red blood corpuscles and sometimes inside them. They are said to resemble the plasmodia found by Laveran in the blood of patients suffering from malaria.

ON PREVENTING THE SPREAD OF DIPHTHERIA.

AT a recent meeting of the New York Academy of Medicine, Dr. W. P. Northrup, (N. Y. Med. Jr.) in opening a general discussion on this subject, assumed, as a basis of argument, that diphtheria was contagious by transportation as well as contact. He then went on to consider the best means of avoiding spread of the disease by the physician himself. He thought that the first precaution which the physician should take was to keep his person and garments from becoming infected with secretions from the patient. How was he to effect this? how take the pulse, examine the fauces, listen to the lungs; or make topical applications to the pharynx or insert a tube into the larynx, and then leave the house of the patient, feeling certain that in twenty minutes he might safely visit another child and examine an ordinary catarrhal pharyngitis without danger of implanting upon that susceptible mucous membrane a fresh vigorous colony from his last diphtheria case? It was clear that the physician must protect his person and

garments from infection, and must also do his best to destroy infection upon the necessarily exposed parts. He must *protect* and *disinfect*. How often a physician would sit on the side of the diphtheritic patient's bed, play with toys, tease the child, and make himself agreeable for a time and then go away saying he must hurry because he had fifty more visits to make before eleven o'clock that night! The details of precaution against contamination from flying spittle and *débris* of necrotic bacteria-laden tissue from a struggling child's pharynx should be carefully studied out and conscientiously observed. After such ablutions as would thoroughly cleanse the hands, disinfectants should be used of a strength known to be efficient. There was no excuse for a physician's coat being infected; but suppose his waistcoat got the charge, it should be sterilized. It was for such garments as these, and for many of the articles about the patient, that he recommended sterilization by steam. He then exhibited the practical working of the Arnold steam

sterilizer. Dr. A. Caillé said that when he wished to examine a patient with diphtheria he never sat down in the sick-room. He had the child held in the lap of the nurse while he took up a position to one side. He used a spoon as a tongue depressor, and never carried a spatula. After cleansing his hands thoroughly he used some Labarraque's solution upon them, which he always carried with him. For intubations he wore an apron. The physician was not called upon to make himself pleasant. The cases were for the most part serious or desperate. There was no need of wasting time in dallying with the child, and so forth. After leaving the house, a walk of ten blocks would do a great deal towards disinfecting the clothing. The nurses should have long gowns with hoods, and the sleeves should be secure at the wrists by elastic bands. They should be provided with and directed to use the solution referred to and also Javelle water. The disinfection of the patient's naso-pharynx was of the utmost importance, and attention should be directed to insure constant cleanliness of the teeth. The nurses should also use gargles and insufflations.

Dr. Johnson said : Of all germ diseases probably none have been fraught with more terror and less been known about them than diphtheria and scarlet fever. Diphtheria is as old as civilization. Homer mentions it as attacking the armies of Ulysses. Hippocrates, the father of medicine, Celsus, Sydenham and others, from the dawn of medical history, have described it under many different names. In the Middle Ages it was known as the *Malum Egypticum*. The earliest medicinal records of this country describe it as the putrid sore throat of New England. Yet during all these ages that it has prevailed, no one has known its cause. Like the pestilence that walks in darkness, no one knows how it came or how to stop its ravages.

A mother attending her diphtheritic child, puts a blister on her chest, thinking she is going to have pneumonia. The raw surface becomes covered with the diph-

theritic exudation, and she dies from it—no false membrane having formed in the mouth or throat. A mother with cracked nipples nurses her diphtheritic baby, and has diphtheria of the breast. A patient, in the wards of a hospital where there is diphtheria, has leeches applied, and the diphtheritic membrane forms on the leech-bites.

The enormous number of cases like the above, which have been authenticated, produced the conviction that diphtheria was at first a local disease. Since the germ of diphtheria has been discovered, inoculation-experiments have been so frequently shown that it is first local and afterwards constitutional. It may be laid down as thoroughly established, that on whatever part of the body diphtheria starts, that is the focus of infection. From that part of the body the poison radiates through the body until, by a general blood-poisoning, it renders the organism incapable of life.

Why diphtheria should attack the tonsils and mucous membrane of the pharynx is easily understood. The germs of diphtheria dry up and float around in the air. As they are breathed in they lodge on the tongue. This furnishes the moisture necessary to revive them and the heat at which they most readily propagate. If physicians would only spend a few minutes every day in examining their own saliva, they would be amazed at the bacteriological laboratories they carry around with them. I shall never forget my own feelings the first time I made such an examination of my own saliva stained with aniline dyes.

Prof. Sternberg had demonstrated that pneumonia was caused by a disease-germ. A valued friend of mine had an attack of pneumonia that looked as though it would be inevitably fatal. I had been up all night with him, and toward morning he began to expectorate. When I left the patient I took the expectoration to see if I could find the germ of pneumonia myself. After making slide after slide of the sputa, I made a slide with the same care of

my own saliva. Imagine my astonishment. There, on my own tongue, I found the germs of pneumonia. There I was carrying around with me the means for my own destruction, and not knowing it. A little more exhaustion and a little more chilling of the body, and they would have done their deadly work. I could well understand then Prof. Sternberg's remark that the human tongue was the best incubator of these disease-germs, and Prof. Loomis' statement that pneumonia causes the death of nine-tenths of all people over sixty-five years of age.

The tongue is thus seen to be the incubator of these disease-germs; but they require an alkaline medium in which to

propagate. The saliva is alkaline, and supplies that want.

Diphtheritic germs have the power to live wherever filth is found. Winter's cold does not destroy them. They float around in the air, are breathed in and lodge on the tongue, with its heat and moisture to revive them. The saliva furnishes the alkaline medium they require to propagate in, and washes them into the little orifices and crypts or pockets in the tonsils, where they receive warmth, moisture, and food at our expense, and the absorbents in the tonsils are royal highways, through which they send their poison to the citadel of life.

JAPAN—THE SANITARIUM OF THE EAST.

JAPAN has already earned for itself says the British Medical Journal, the title of the "Sanitarium of the East," just as it is fast becoming the Mecca of Europeans in search of the last existing national shrine of the highest and oldest form of the characteristic art and culture of the far East. The Japanese are very well aware, however, of the weakness of their sanitary organization. The mortality of the towns and cities is not high, but the sewerage of the towns is primitive—in most towns by open channels or ditches, sometimes uncovered, sometimes covered with loose planking. A good deal of the sewage is carried off to the fields; what remains, however, suffices to contaminate the soil and pollute the surface wells and streams which are the sources of drinking water. Mr. W. K. Burton, the able professor of sanitary engineering at Tokio, gives an interesting account in the current number of the *Sanitary Record* of the sewage disposal, water supply, dwellings, and diet of Japan of to-day.

The houses are all built above the soil, and raised on platforms, simple, airy and free from poisoning by ground soil or water. They are kept in a state of absolute cleanliness, matted from end to end, and it is an act of unknown rudeness—

except for heedless Europeans—to walk with outdoor shoes across the mats.

From the very day of his birth every Japanese has a hot bath at least every two or three days, in most cases every day, and in many cases several times a day, usually at a temperature of a 110° to 115° F., often as high 120°, and sometimes 130°. Young girls may be seen stepping and sitting down into a bath that will scald one's fingers, and even babies that are too young to walk are dipped in the same. The old-fashioned and English notion that it is dangerous to go into a bath at a temperature over blood heat (say 98° F.) is declared, for instance, by Mr. Burton, to be like a good many other old ideas—an entirely mistaken one. He says: "The ability to go into a bath at a temperature that would at first seem simply sufficient to parboil any human creature is easily acquired. It is only necessary to have a little perseverance, increasing the temperature of the bath by a degree or so a day. I have thus myself acquired the ability to go into a bath at a temperature of 120° F., although I much prefer one ten degrees less hot. One who has not tried it can have no idea how refreshing a very hot bath is, and especially in hot weather. One can remain

in it for only three or four minutes at the outside ; there is none of the enervating effects that there is from the tepid or so-called 'hot' bath of England, but, on the contrary, a feeling of increased vigour.

"A thing I cannot understand is that, whereas in very cold weather the effect of a very hot bath is to so warm the body that one can sit in comfort for some two or three hours after coming from it, even in a Japanese room, without feeling the cold, in summer the effect is (from reaction, I presume) distinctly cooling."

Foreign medical advisers had, in virtue of their superior knowledge, induced the issue of an edict keeping down the temperature of public baths to 100° F., but this proved very distasteful to the natives, and, moreover, the foreign medical advisers have come to see the error of their ways, and now themselves take baths at the higher temperature, and find them agreeable, and it is said, beneficial.

One reason why the public health is less affected than it might otherwise be by the pollute drinking water is that the habit universally prevails of drinking at all times and very frequently, weak, hot tea, as the main beverage. It is imbibed very weak without milk or sugar. Hot saké, a light wine made from fermenting boiled rice, is the chief national form of alcoholic drink ; it contains from five to ten per cent. of alcohol ; women never drink it ; men only sparingly ; drunkenness is exceedingly rare. The death-rate of the population of the whole empire, as gathered from the well edited reports of Mr. N. Seusa, the able chief of the statistical health bureau, is 19.33 per 1,000, due to the low infant mortality. The Japanese have the most tender affection for their children ; and all travellers are agreed that next to the beauty of the scenery and the gentle and graceful courtesy of all classes of the population, ranks as among the most pleasurable incidents of sojourn in Japan, the universal love of children and the ami-

able gaiety with which their pleasures are studied.

According to Mr. Burton, the lowness of the infant mortality is probably due chiefly to the very great attention paid to the children by their mothers, to the fact that no substitute for mother's milk is ever used and that they are nursed an unusually long period. The habit that Japanese women have of carrying their children in a sort of bag on the back enables them to have the little creatures with them wherever they go, without apparent inconvenience. They appear to be able to go about their regular work, whatever it may be, with a child on their backs. The child is almost always with its mother, and has a great deal of open air.

The long nursing probably accounts for another fact, once more in exact contradiction of popular belief : namely that although the Japanese, especially the women, marry very early, the families are on the average very much smaller than those of Europeans.

The main diet of the people is rice ; flesh meat is scarcely eaten at all, but fish is largely used ; milk is given like medicine in the hospitals, but is not relished by the population. Large kinds of cucumbers, radishes and beans are extensively used. The "jinriksha" man will draw travellers at a pace of from four to eight miles an hour on a rice diet, doing thirty miles a day at a good pace for long successions of time.

Great sanitary improvements are in progress, and more in contemplation. Working under the instructions of the Home Department, Mr. Burton has got out plans for the sewerage of some six or eight great towns, and the importance of improving the water supply is fully recognised, and is being acted on.

A GERMAN proverb says that "a physician is an angel when employed, but the devil when one must pay him."

THE report of this Exhibition, held under the auspices of the American Public Health Association, which held its seventeenth annual session in Brooklyn in October last, has just been issued by the special committee. It was the first exhibition of sanitary goods and appliances ever held on this continent. Eighty exhibits were made, some including a large number of articles. On the committee of award were men of such world-wide reputation as Drs. Stephen Smith, and A. L. Gihon.

The following notes of a few of the articles exhibited will doubtless be of interest to our readers :

INDURATED FIBRE BATH-TUB.—The material from which this tub is made is the same as that which has been used for several years for making pails and other household utensils. For this most recent adaptation the fibre is said to be hardened by subjecting it to a high temperature and thereby made more durable. The outside of the tub in baking is given a rosewood or any other desirable color, or finished in white enamel corresponding with porcelain ; the common inside finish tinted or otherwise. It is represented to be better and cheaper than any other "first-class" tub when finished and set in position, because no expense is incurred for casing or other outside finish. Huber & Co., 81 Beekman street, N. Y.

JOSEPH GUY'S CORONET WATER CLOSET—“A water-closet suitable for schools, yards and public buildings and free from such objectionable features as clogging, freezing and disagreeable odors.” It comprises a system of supply and waste-pipes and a series of closets connected therewith with the usual appurtenances, traps and trap-vent connections. Joseph Guy, 304 Mott street, New York.

MINNESOTA AUTOMATIC SEWER FLUSHER—An apparatus designed and adapted to produce a forcible and sudden dash of a large quantity of water through the sewer, thus to remove any accumulation of heavy matter therein contained. It has been ef-

fectually used at Minneapolis, and is endorsed by the health authorities of that city.

“FIRE ON THE HEARTH.”—a design of an open stove which has been on the market for several years, and is highly approved of by many who have used it. The Editor of this JOURNAL has had one of these stoves in pretty constant use in his house for several years, and is very much pleased with it. It is an economical and very pleasant heater. Also by the same exhibitors.

RICHARDSON'S DUPLEX RANGE.—The only double-oven range ever manufactured and successfully used to *roast and broil* in a perfectly ventilated oven before an open grate fire.” Richardson & Morgan Co., 92 Beekman St., New York.

THE “BACKUS” PATENT PORTABLE, OPEN REFLECTING AND STEAM RADIATING HEATER BY OIL OR GAS COJOINED WITH STEAM. The special peculiarity in the construction of this heater is the utilization of water to absorb the mephitic emanations from burning gas or oil, and to supply moisture to the otherwise excessively dry air of rooms so heated. The opening or fire place is occupied by an iron log, partially covered with flakes of asbestos, giving it the appearance of burning wood. The arrangement of the gas jets, which are exceedingly small, together with a current of air and evaporation of the water contained in a receptacle at the base is such as to greatly intensify the heat of the log, promote the complete combustion of the gas, and supply moisture to the apartment. The upper and larger hall, nearly sixty feet square, and fourteen feet height of ceiling occupied by the exhibition, was effectually heated by three of these heaters during the month of November without any noticeable odor or other deleterious effect of the atmosphere. 22 Park Place, New York.

THE “ENGLE FIRE-CLOSET.”—For the destruction of filth and obnoxious substances connected with dwellings, schools, hotels, hospitals, jails, court-houses, public build-

ings and factories. Constructed in various sizes, suited to different requirements. This cremator has been thoroughly tested under competent observation, and has been found to be an excellent substitute for privy vaults as well as a perfect means of destroying garbage of all sorts. 30 State Street, New York.

The local board of health of New York submitted plans showing a typical tenement-house of the past and one of the present time, with improvements in light-ventilation, and drainage.

THE RED CROSS SECTION exhibited a cot and stretcher, a number of cuts illustrating the proper method of handling and removing patients, a life-size manikin showing important land-marks as guides in arresting hæmorrhage, etc., an assortment of bandages and compresses of every conceivable form, with other appliances, all going to show the efficiency attained by this philanthropic society in rendering first aid to the injured.

"INFANTS' PORTABLE BATH-TUB."—Miss S. C. Neal, of 19 Clinton Place, New York, exhibited an invention of her own under this name, made of strong rubber cloth folded over a frame of bamboo, cherry, or ebonized wood of camp-chair design. It has a hard rubber faucet at the bottom for water outlet, and at the ends has pockets for soap and sponges and a bracket for towels. When not in use it may be folded like a camp-stool and packed in an ordinary travelling trunk, or by placing a cover over the frame it may be used as a table for the nursery.

THE DEPARTMENT OF PHYSICAL CULTURE was very fully represented by the exhibit of Messrs. A. G. Spalding Brothers, 241 Broadway, New York. Of their extensive display, the following articles are mentioned as among the most striking: The mechanical apparatus for the strengthening, development, or co-ordination of almost every muscle in the trunk and extremities was complete, and seemed to be all that could be desired.

THE ARNOLD STEAM STERILIZER AND COOKER: Wilnot, Castle & Company, Rochester, N. Y. Both are made on the same principle. Steam is evolved within three or four minutes. The appliances are durable, practical, and reasonable in price, and seem to be an advance over anything yet contrived.

ICE MACHINE: L. Dermigny & Company, 126 West 25 St. New York. An apparatus to make ice and to freeze ice-creams and other ices in a few minutes; machines are ingenious, of various sizes. The ingredients used in the freezing compound are not stated.

ALADDIN OVEN AND ALADDIN COOKER: Edward Atkinson, LL. D., Boston, Mass. These are noteworthy contrivances to save labor, fuel, and waste of food. The cooking with both is accomplished by the heat from a Rochester or other good lamp. In the oven the heat comes in contact with the inner sheet-iron box (or oven) in which the food is placed. An outer box of wood fibre keeps the heat from escaping, and keeps it in contact with the sheet-iron box. The "cooker" is a double box, the inner portion lined with metal. The object is to simmer or stew food economically. Both oven and cooker encourage prolonged cooking at a comparatively low temperature.

A NON-CONDUCTING MAT for bath-rooms made of cork was exhibited among many other things by McKesson and Robbins, New York.

Of the testimonials awarded, the following among others received them:

American Washable Wall Paper Company, Deckertown, N. J., For Wall Papers that wash and contain no arsenic.

Edward Atkinson, LL. D., Boston, Mass.: For Aladdin Cooker and Aladdin Oven.

Backus Portable Steam Heater Company, New York: For the Backus Patent Portable, Open, Reflecting and Steam Radiating Heater.

Connolly Manufacturing Company, Brooklyn, N. Y.: For Connolly Patent Globe Trap and Hopper Clamps.

Durham House Drainage Company New York: For the Durham System of House Drainage.

Joseph Guy, New York: For Guy's Coronet Water-Closet System—for outdoor use.

Henry Huber & Company, New York: For Indurated Fibre Bath-Tub.

Miss C. N. Neal, New York: For the Neal Improved Infants' Portable Bath-Tub.

J. J. Powers, Sanitary Engineer, Brooklyn, N. Y.: For Plan of Sewage Disposal Works.

C. B. Tefft, M.D., Utica, N. Y.: For Family Garbage Burner.

George H. Warner, New York: For the Engle Fire-Closet, for the cremation of garbage and other obnoxious substances.

Wells Rustless Iron Company New York: For Rustless Wrought-Iron Steam, Gas, and Water Pipe.

The following were among other things recommended as worthy of honorable mention :

Bush Manufacturing Company, New York: For "Bovine."

Thomas Leeming & Company, New York: For Nestle's Swiss Milk and Milk Food for Infants and Invalids.

Richardson & Morgan Company, New York: For Improved Combination Heaters—Steam and Hot Water.

HEALTH STATISTICS—THEIR VALUE AND NATURE.

THE health of a people of a country and the average duration of human life in it should be to the Government of the country a matter of the first importance. The eminent D'Israeli was one of the first men of modern times to emphasize this. He said : To look after the health of the people is the first duty of the statesman ; and in a large measure he carried into practice his strongly expressed views on this subject. It has been said that to be indifferent to, or ignorant of the laws which affect human existence, would be to make our legislators responsible for the ravages of every preventable epidemic invasion of disease. But how shall the legislators or government of a State be able to act intelligently or effectually in relation to public health? In no other way is it possible, than by an adequate knowledge of the births, marriages, deaths and the prevalence of disease, especially of epidemics, to be derived alone through uniform and careful registration.

It is just as desirable and necessary, as any one will admit, that a government should know through a record of such events, the *quality* of the people as that the quantity or numbers should be known, as by the census.

As Dr. Plunket, President of the Tennessee State Board of Health, has well said, the class of science to which the science of public hygiene belongs, is obviously the same class as medicine itself ; both make disease their study, but in different ways ; with the physician the question is, what will cure an ague, or mitigate a fever? With the health officer, what will prevent

them? If the physician take cognizance of prevention, it is only to advise the patient and his household what precautions they should adopt ; but the care of the officer of health extends to the whole district or community threatened by the disease. The physician may advise a consumptive patient to abandon some unhealthy occupation, damp-dwelling or undrained district ; the officer of health would render the occupation healthy, or drain the district dry. In a word, while cure or palliation is the aim of medicine, prevention is the object of hygiene ; while the one studies the good of the unit, the other looks to the welfare of the mass. Therefore, since public hygiene deals with mankind, not one by one but in communities, it follows that its scientific method can be no other than the numerical method, which in its application we call vital statistics.

The basis of all public health work is therefore a system of health statistics, usually called vital statistics—statistics relating to life. In these are commonly included a report or record of the causes of the deaths which occur, including the age, occupation, &c., of the decedent—mortality statistics—as well as a report or record of births and marriages, and of prevailing diseases, especially of those which are epidemic or communicable. It has been stated that these last—the prevailing diseases—ought not to be regarded as statistics. But this is clearly erroneous. They cannot well be made so exact as a record of all the individual events of births, marriages and deaths, but they are none the less statistics, and may be made really

of a more immediately useful, practical character than any other health statistics.

Disease statistics, as records and reports of the most prevalent diseases in the various localities may be called, until a more suitable term shall have been thought out by some one specially given to nomenclature, are of the most immediate, practical value, as they may be acted upon even before the deaths take place. They are but recently attracting attention, but are obviously of the utmost importance.

The provinces, therefore, whatever may be their powers in relation to preventive or public health measures, can do but im-

perfect work without a system of vital or health statistics. Certainly it would not be the best, most practical and economical way by any means for each separate province to have a complete organized system for collecting statistics of this kind and to tabulate and publish the results monthly or weekly. It could be better and much more economically done by the Federal Government; thus performing as Dr. Platt recently said in Parliament here, at one centre what otherwise will have to be done by each province—by many centres.

MISCELLANEOUS NOTES AND EXTRACTS.

THE ELECTRIC RAILWAY AS A SANITARY MEASURE.

Joseph Wetzler, in Scribner's magazine for April says: The rapid extension of the electric street car system which has taken place (especially in this country), naturally leads to the question of the cause thereof. To have gained such pre-eminence it must be able to do not only what other systems can do, but, still more, it must be able to do it at a decreased cost. Again, removal of thousands of horses from the streets of a city, involving, as it does, the doing away with the noise and dirt, is another distinct gain to its residents. But if one goes still further, and contemplates the difference between a stable housing thousands of horses, and an electric-car station of sufficient size to operate a road with the same efficiency, one is at once struck with the advantages on the side of the electric system, which, indeed, are incontrovertible. Instead of a large, ill-smelling building whose odors are wafted for many blocks (making the tenancy of houses within half a mile almost unbearable, and involving a large depreciation of property in the neighborhood), there is a neat substantial building equipped with a steam plant and dynamos, and occupying hardly one-tenth the space required for an equivalent number of horses. Therefore, not only is their effected a removal of the nuisances attached to a stable, but a large saving in the cost of real estate, and the far greater

amount involved in the known depreciation of the surrounding property. Besides this, the stables are of necessity required to be close proximity to the track, whereas the electric power station, which furnishes current to the car, may be situated a mile from the track in some suitable place, as for instance, beside a river, where, with condensing engines, power may be generated at a minimum of cost.

SANITARY INSPECTORS.

At a general meeting of the Association of public Sanitary Inspectors held recently in London, a report was presented by the Council embodying its recommendations upon the question of the status of the Sanitary Inspector, which it had been instructed to consider. The Council came to the conclusion that in the various Acts of Parliament referring to the position and work of the Sanitary Inspector, there were five defects which it was desirable to remove in future legislation, and the report therefore recommended the Association to endeavor to secure the following amendments in sanitary law: 1. That every candidate for the position of Sanitary Inspector shall have a general knowledge of the building trades, and in addition, shall possess a certificate in Sanitary Science. 2. That Sanitary Inspectors shall have a permanent tenure of office, and shall only be dismissable for misconduct, or proved incompetence, with right of appeal to the Local Government Board. 3. That it shall be the duty of Sanitary Inspectors to periodically inspect

the dwellings in the district to which they are appointed: and to receive complaints of nuisances and serve notices forthwith, requiring all necessary works to be done for the abatement of the nuisances. Such notices to be as valid, if confirmed by the Local Authority, as if served by the Authority's order. 4. That in all appointments requiring the officer's whole time to be given to the duties of his office, an adequate minimum salary shall be prescribed.

SENIBLE REMARKS ON PLUMBING.

The Sanitary News gives the following :

In the progress of sanitary science it has been discovered that one of the greatest dangers to health lies in the water supply, wastes, drainage and sewerage. The habitations of our cities have the water supply on the one hand and sewers filled with poison refuse on the other. It happens to be the plumbers' part to connect these two, and they may be said to meet in the centre of the house. To conduct this water to the consumers in a pure state, and to drain off the waste so that poisons and obnoxious gases rising from decomposition and pollution may not afflict the household, is a service filled with the greatest responsibility. It is this part of the plumbers' work in which the public are most directly interested and it is this part they should seek to become familiar with. People will remain in a condition to be imposed upon so long as they remain ignorant of the importance of this work. He who has work of this character to be performed can have his home made secure, or can leave open avenues for the entrance of countless ills. There is no great obstacle in the way of having this work properly done. All he has to do is to see for himself that none but a reputable plumber is employed to do it. This is a matter he cannot afford to leave to the pleasure of men less interested than himself. There is no part of his building for which he can afford to pay more and upon which he should devote more care than on this. The plumber should be as much under the building owner's selection as his physician is, and he should satisfy himself fully that both the material and workmanship are perfect. If he is not able to judge to whom should he go but to a plumber of known ability and integrity? For he should understand that all expenditure for defective plumbing is money worse than thrown away, for it is an investment in that which will entail

not only greater expense, but the dangers of disease that will leave the home robbed of that which money cannot purchase.

A REGENERATED CITY.

The last number of the Bulletin of the State Board of Health of Tennessee gives an interesting description of the present sanitary condition of Memphis, formerly bearing such an unenviable reputation as a pest spot. The original water supply was from wells and cisterns. A change from these to Wolf River water was hailed as an improvement, but this source furnished too much mud along with the water to be acceptable. In 1887 a driven pipe was sent down 354 feet on a tour of investigation and discovered the surprising fact that, at this depth and beneath a thick bed of impervious clay, there lay an unfathomed stratum of water-laden sand,—a vast surcharged reservoir. Through this pipe water flowed clear and sparkling, and, quoting from a Memphis newspaper of that date, the account goes on to say : " People drank it. Crowds soon collected about the flowing fountain. Policemen were in requisition. The news spread like wildfire. The elixir of life had been found. Memphians of all degrees, high and low, old and young, with buckets and jugs, coffee pots and tin cans, waited in long files to be served, each in turn, from the gushing, hygienic well. And so for days. In good weather there could be seen lines of baby carriages, each with its little occupant, reaching from the well a square or so away. Physicians gave prescriptions; ' Let the baby drink artesian water.' Ailing mammas and dyspeptic papas drank it too, and continued to drink, and do now even to this day." The result was, a company was formed and put in a water supply that has been abundant and that is shown to be, chemically, one of the purest water supplies in the world. With the flow of this pure and wholesome supply of water together with one of the best systems of sewerage in the world, there has been a marvelous change in the health conditions of the place, and, since the inhabitants themselves and outsiders are no longer afraid of the city, northern capital has flowed in, and Memphis has entered upon a new and prosperous era. So much to the credit of public health proceedings.

NOTES ON HEALTH REPORTS.

FROM OTTAWA the medical officer, Dr. Robillard reports: In the discharge of the duties devolving upon this office, even though it be a repetition of what has been urged in past reports, I cannot close this without stating that so long as the necessary facilities are not given private individuals to put dwelling houses and their surroundings in that sanitary condition which can only be secured by the construction of public drains wherever wanted and the organization of a proper system of scavenging throughout the city, just so long will our death roll be longer than it should be. That these sanitary defects, causing as they do yearly loss to the state as well as severe loss and sore affliction to many families, are grievances the municipal authorities are in duty bound to remedy at the earliest possible period of time. At least one-half of all the unsanitary conditions complained of are either directly or indirectly the outcome of defective plumbing or drainage, or both, or the result of the want of public drains. A strong plea, it must be admitted, not only urging the completion of subsidiary drains, but a strong plea also for the most vigilant supervision of such works, either private or public, by a competent person in connection with this department. Medical inspector McNeill reports that nine summonses were issued during the year for violations of the Public Health Act. Convictions were obtained in every case, and the matter complained of remedied by order of the court. In two cases only were fines imposed, viz: For cutting and storing impure ice, \$10; for keeping pigs too near dwellings, \$5 and costs.

FROM BRISTOL, N. B., Dr. Atkinson, Medical Officer, in his report for last year says: Evidently our people have much to learn regarding the absolute necessity of proper drainage and thorough cleanliness about their homes. I have no doubt whatever, but that the prevalence of typhoid fever in this county during the latter part of the summer was caused by the water becoming poisoned through lack of proper sanitation, the rains following the long drought washing accumulations of decaying vegetable matter and thus befouling the water supply. I am very strongly of opinion that it would be in the interest of the public health for every county

to have a competent man whose sole business would be to thoroughly inspect the premises of the people of the county and enforce the regulations of the Board of Health.

ST. STEPHENS, N. B.: Dr. Blair, Medical Officer says: By a careful, prompt and regular inspection by the Inspector appointed by this Local Board, of the several houses, yards and other localities in the Town, the people have become more thoughtful of the benefit of clean and pure surroundings, and consequently the work of the Inspector has grown less arduous and more pleasant.

GRAND MANAN, N. B.: Dr. Noyes, Medical Officer, says: Frequent violations of the Health Act occurred here, mostly through ignorance and indifference as regarding the Act, but the offenders being duly warned, kindly reproved and then severely threatened as to the consequences thereof, eventually desisted and complied with our demands. Diphtheria has been prevalent here for a long time; several cases, to my knowledge, were caused by foul privies, others mostly from bad water from surface drainage.

ANDOVER, N. B.: Dr. Welling, Medical Officer, says: Diphtheria prevailed along the Tobique River quite extensively during the months of January and February, the origin of which seemed to be in a wretched family as the result of uncleanly habits. The disease should have been confined to the house in which it started but the physician in attendance gave out that it was not contagious, or at least, that it was not diphtheria, and in a short time there were as many as a dozen cases of the dread disease.

MARYSVILLE, N. B.: Dr. Sharp, Medical Officer, reports that: During the summer months, cholera infantum was very prevalent, due, he thought, almost entirely to improper feeding. "Parents allow and indeed encourage their children to eat food they are unable to digest. This improper feeding of young children, especially during the hot months of the year, is a "crying" evil, and much might be done to prevent it, would the parents heed the instructions given them,

EDITORIAL NOTES.

CLEANLINESS and sanitary science may be regarded as almost synonymous terms. Also, lute cleanliness, everywhere, within the body as well as without, covers almost the whole ground of the science and art of health. Want of cleanliness means dirt, and dirt means waste, used up, excremental matter in the wrong place:—within the body when it should have been cast out by active excretory organs; in and around about our places of abode or resort when it should have been at once destroyed, burned, disinfected or in some way transformed into inert, harmless matter. All infections are directly associated with uncleanness; local organs become diseased from excess of waste matters in the blood; a "cold" would hardly ever be "taken" were the body absolutely clean within and without.

CONSUMPTION, the most destructive of all diseases, is doubtless directly caused, in susceptible bodies of course, by breathing the infection from or with particles of dried sputa, or spit, cast out upon the floor or sidewalk from the lungs of consumptives, more frequently than in any other way. The habit of so spitting is a dirty, vile and thus often even a fatal habit. It has been proved in many ways by many scientists that the disease may be, and it unquestionably is, frequently caused by inhaling the infection from this source. When Tappeiner was causing dogs to breathe the pulverized sputa of consumptives, a robust servant of forty laughed at the idea, that consumption could be caught in this way. In spite of warnings he went into the inhaling room, breathed the sputum dust, contracted the consumption just the same as the dogs, and in fourteen weeks he died of the disease.

TEN THOUSAND human beings at the lowest calculation die in Canada every year from consumption alone. If no consumptive were allowed to expectorate on floors, streets or anywhere except in a spittoon or a special flask (now obtainable) or on bits of cotton rag, and all the sputa were then daily or oftener carefully burned or thoroughly disinfected with corrosive sublimate, this great mortality would doubtless soon be reduced to five thousand or less. The education of the public alone in this important subject would go a very long way, without any

coersive measures. Thousands of consumptives would at once thus dispose of the expectoration from their lungs, if they but knew the consequences of not doing so. Moreover, the consumptive reinfects himself, other points in his own lungs become the seat of the disease, and his chances of recovery are lessened if he continues to breathe germs from his own sputa. Or the germs may settle on food and this when eaten may infect the digestive canal—the stomach and bowels.

DAIRY BULLETINS are now being issued from the Experimental Farm here, which will undoubtedly be of great service to the dairy interests, as well as promotive of the public health by improving the quality and purity of dairy products in the Dominion. The suggestions relating to the food of cows and the cooling and cleanliness of the milk, etc., are excellent, and it is to be greatly hoped that all dairymen will practice them. In an introductory the editor of the Bulletin, Mr. Robertson, the Dairy Commissioner, says: "The first purpose of the bulletins will be to spread useful information bearing upon Dairying in the Dominion, for the benefit of its farmers. Their aim will be the education of the average farmer and those whose occupations are associated with his, rather than the furnishing of data of only scientific interest."

THE NEXT form of official bulletin to be issued by the Government we trust will be a Health Bulletin, "for the education of" ALL classes, on all subjects pertaining to HEALTH. What possibly could be more productive of good than to thus "spread useful information bearing" upon the health of the people—health, the most important capital or staple of the whole communities—Bulletins scattered by thousands with information based largely on health reports and statistics from all parts of the Dominion. Let every body who has influence aid in the effort to induce the Federal Government to establish a Health Department, also in connection with this prosperous and progressive Agricultural Department, which shall have for its prime object the education of the people of Canada in the ways of preventing disease and premature deaths.

A STARTLING REPORT on the Inquiry into the connection of disease with habits of intemperance, prepared by Dr. Isambard Owen,

Secretary to the Investigation Committee of the British Medical Association, gives some statistics which should cause "temperance" people to take a broader view of the causes of intemperance, and turn them to be active sanitarians instead of only "temperance" workers. Particulars have been obtained by the committee of 4,234 deceased lives, aged 25 and upward, in which the habits of the person in regard to alcohol were reported in five classes—total abstainers, habitually temperate, careless drinkers, free drinkers and decidedly intemperate. The ages of death in each class show an average as follows: Total abstainers, 51.22 years; habitually temperate, 62.13; careless drinkers, 59.67; free drinkers, 57.59; decidedly intemperate, 52.03. This makes the lowest average duration of life that of the teetotaler and the highest that of the moderate drinker, his average being nearly eleven years longer.

ANOTHER TABLE prepared by the committee from which all deaths under thirty were excluded, showed the following durations of life: Total abstainers, 57.31; habitually temperate, 66.48; careless drinkers, 61.52; free drinkers, 58.87; decidedly intemperate, 53.42. Omitting lives under forty years, the average of death was: Total abstainers, 62.74 years; habitually temperate, 67.71; careless drinkers, 66.45; free drinkers, 61.98; decidedly intemperate, 57.47.

THE Rev. W. W. Carson, late of Ottawa and now of Kingston, is taking the lead in Canada in making the pulpit, as it should be, a place for the dissemination of knowledge on the care of the body as well as of the soul. He recently preached a sanitary sermon from a bible text to an immense congregation in Kingston, according to the Daily News of that city. He is a firm believer in sanitary science and designated it by the title of "the new gospel." "The natural inference to be drawn from the text, is that if life is worth living, it is surely worth living at its best, and it is not at its best if all the dimensions of man are not taken in. Religion is a broader word than men have been wont to make it. The phrase has been narrowed down till it means the church to which one belongs, while it enhances the whole plane of human existence. It directs the right use of the body as a temple, defines man's duties to himself, his neighbor, God, his church and the state. Sanitary science or what is called the observance of health, was observed by the Jews. Personal cleanliness was inculcated under a penalty. Thus is the unparalleled longevity of the race accounted for. The doctrines of health are laid down in the Bible. Man was never doomed to suffering on this earth, and I do not believe said he: that it

is the will of God that we should be tortured with pain and that the bosom of this beautiful earth should be opened to receive the bodies of our beautiful children cut off by the inexorable hand of death.

IN FRANCE, in view of the large number of consumptive patients using the *wagon-lits* on the railways on their way to the South, it is proposed to adopt measures for the thorough disinfection of the bedclothes, etc. The velvet cushions and silk hangings are to be done away with, and the seats covered with smooth leather, so that they can be easily washed. Carpets are to be replaced by rugs, to be shaken in the open air after each journey. The bedclothes are to be subjected to the action of heat in vapour stoves, and the mattresses are to be covered with impermeable silk or gutta percha tissue, so that they can be readily cleaned. The invalids will travel in separate compartments, and each will be provided with a spittoon, the contents of which will be destroyed.

THE UNITED STATES Senate recently passed a bill providing for the inspection of meats for exportation, and forbidding the exportation of adulterated food or drink. The bill also forbids the importation of adulterated or unwholesome food or adulterated wines or liquors, and provides suitable penalties. It authorizes the President to suspend the importation of animals by proclamation when such a step is necessary to prevent infectious or contagious diseases.

IN PITTSBURGH it is proposed to appoint veterinary inspectors who shall be empowered to condemn all tuberculous meat, a reasonable compensation being paid to the owners of animals found in that condition; and who shall visit all milk dairies and condemn every cow found suffering from tuberculosis, particularly those with mammitis. It is proposed to make it illegal to breed from tuberculous animals.

THE CHICAGO Tribune has published nearly a whole page of replies to the question "How do you get yourself to sleep?" The replies came from all classes, but from the doctors interviewed on the subject came the important announcement that insomnia was very extensive and on the increase. Sleeplessness is not natural. It is induced by the violation of some hygienic law. There is a cause for insomnia and it can be prevented. It is assuming serious proportions. The Sanitary News says, The Tribune can now render its readers a greater service by asking them: what have you done that causes sleeplessness?

SOME STARTLING FIGURES, says the Canadian Gazette (which is said to be the organ of Sir Charles Tupper), "were given in the House

of Commons the other day, when a resolution in favour of a Health Department was under discussion." as brought forward by Dr. Roome. "Sir John Macdonald, in stating the case for the Government, admitted the importance of the subject, and made the valuable suggestion that as this is largely a provincial matter, a convention should be summoned, to which the Federal Government would ask the various Provincial Governments to send representatives, for the purpose of framing some united plan for exercising the various powers as efficiently and inexpensively as possible." In conclusion the Gazette says: "No doubt the suggestion will be carried out."

THE VEGETARIAN SOCIETY of Chicago, under the able presidency of Mrs. Le Favre, the leader and chief organizer of the society, now consists of about 60 members. It was only organized last November; and it is said many persons were a little slow about joining at first, as they did not wish to flaunt their diet theories before the public, but that this backwardness is disappearing, and the society is securing many accessions and much encouragement.

MR. EDMUND RUSSELL has been giving a series of lectures on color, &c., in dress, in Chicago, under the patronage of the Society for the Promotion of Physical Culture and Correct Dress, of which Mrs. Le Favre is a leading member. He has returned to England. Among many other good things he said: "Color occupies the same relation in the language of art as gesture does in the language of expression. Words describe thoughts, gesture the relation of myself to you. The bow of a graceful person goes all over you - like a caress - no good manners without good motion. Many fall into low orders of manners through nervousness."

A COLLEGE of State Medicine has been established in London and His Royal Highness the Prince of Wales, has accepted the office of President

A CIGARETTE prohibition bill has recently been passed by the State legislature of Kentucky.

THE Chinese are shown by statistics, an exchange states, to be longer lived than any other nation; attributable to their abstemious habits, and their remarkable freedom from consumption.

FOR SEA-SICKNESSES, Medical Journals recommend about twenty breaths to be taken each minute, and as deep as possible. After thirty or forty inspirations have been taken, the symptoms will be found to abate, and in a few minutes will be found to disappear altogether. If the symptoms reappear, the deep breathing should at once be resorted to.

PARLIAMENT FIELD, a portion of Liverpool, England, is said to contain 168 streets, 10,300 houses, 50,000 population, and not a grog shop. Pauperism is almost unknown, and the death rate is only from ten to fourteen, against twenty-five in the thousand in the adjoining parishes.

PROF. SCHELLER, of Harvard, asserts as the result of his observations, that young men do not attain to the full measure of their mental faculties before twenty-five years of age.

STATISTICS gathered by the United States Sanitarian Commission, based upon the examination of a quarter of a million soldiers, show that young men do not, on the average attain full physical maturity until they arrive at the age of twenty-eight years.

THOSE who do not find time for exercise will have to find time for sickness, says the late Lord Derby.

FOUR CASES of tin poisoning caused by eating cherries and their juice which had been preserved by being sealed in a tin can in the ordinary way are reported.

NUMEROUS cases of lead poisoning and even death have occurred in Sheffield, Eng., as the result it appears of the water distributed through lead pipes.

THE FRENCH Minister of Public Instruction has, at the request of the anti-tobacco Society, added the following subject of discussion for the Congress of Scientific Societies which is to meet at Paris on May 27th:—The Influence on Hygiene and Morality of the Narcotics which are in common use throughout the populations of the Globe."

THE GERMAN Government has forbidden contractors to supply the navy with preserved articles of food containing boric acid. It was found that persons partaking of meat preserved with this agent experienced gastric derangements.

THE GERMAN Reichstag will before long have before it what may be called a coercion bill dealing with the drink question. Habitual drunkards will be subjected to pains and penalties ranging from simple fine to suspension of civil and political rights.

THE PARIS Municipal Council is making inquiries concerning the sanitation of kitchens in cafes and restaurants. The facts collected show that in these kitchens there is generally neither air nor light, and the sanitary conditions are as bad as they can be.

NOTES ON CURRENT LITERATURE.

THE TEXT BOOK of animal physiology, more especially for students of human and veterinary medicine, by Prof. Wesley Mills, of McGill Medical School, Montreal, is gaining a world-wide reputation, and is very highly spoken of by the leading medical journals. The N. Y. Medical Journal regards it as "One of the remarkable books of the year."

THE BRITISH MEDICAL JOURNAL, which now issues 15,500 copies weekly, gives seven heavily black bordered pages on the life of the late Sir Wm. Gull.

EDUCATION AND CULTURE, AS RELATED TO THE HEALTH AND DISEASES OF WOMEN, by A. J. C. Skene, M. D., &c., published by Geo. S. Davis, Detroit, Mich., is a very excellent, thoughtful and judicious treatise upon a subject of growing importance. It bears upon the whole "woman question" of the day and of the future, and discusses it with care, and in guarded and refined language, and can be read by the non-professional reader, young or old, male or female, and should be so read. Paper cover 25 cents; cloth 50 cents.

ESSENTIALS OF GYNECOLOGY, arranged in the form of questions and answers, especially for Students of Medicine, by Edwin B. Cragin, M. D., with 50 illustrations (W. B. Saunders, 913 Walnut Street, Philadelphia), is another of the Quiz Compend series, which consists of questions asked by a professor of his students and answered by himself. It affords aid to the educated physician, reviving his earlier knowledge, and including comparison between this and the present condition of this branch of medicine.

IN THE POPULAR SCIENCE MONTHLY, for June, the concluding chapters on Justice, which are to form a part of Herbert Spencer's system of philosophy, will be given. And David A. Wells will contribute an article describing certain Evidences of Glacial Action in Southeastern Connecticut, illustrated with pictures of some of the great boulders which are thickly strewn over this region.

THE LADIES' BAZAR (Ladies' Bazar Pub. Co., 4 Adelaide St. E., Toronto) is regarded by the ladies as being a very nice and useful periodical. It is "A journal of fashion, instruction and domestic economy." Price only 60 cents a year, with a premium of 25 cents in patterns to each subscriber.

THE ILLUSTRATED NEWS OF THE WORLD (the reprint of the Illustrated London News) for the four weeks ending May 10th, among many other good things, contains: A full page portrait of Admiral Sir Prevo Wallis, G. C. B., now 100 years old; a double page illustration of the "Tonhon Column crossing the Swale River, in Upper Burmah"; a full page illustration of the "House of Commons Steeplechase at Rugby, March 29th"; "The River Torc near Killarney"; "sketches in Formosa"; "The old home revisited"; "Fiammetta"; "Dethroned"; "A Bible lesson"; "Snaugglers surprised"; "Quoth the raven: 'Never More';" all very good, and keeping up well the high standing of this excellent weekly.

IN THE MAY CENTURY the first installment of Mrs. Amelia Gere Mason's valuable series on "The Women of the French Salons" opens in a delightful way, and is finely illustrated. Mr. Stillman, in his Italian Old Masters, writes of Andrea del Verrochio, to which Mr. Cole has added a magnificent engraving of a detail from Verrochio's "The Baptism of Christ." Mr. Jefferson's autobiography continues its course, and George Kennan gives a striking paper on the methods of the Russian censors, entitled "Blacked Out," with which is given a facsimile of two pages of one of Mr. Kennan's Century articles on Siberia.

THE "ANNALS OF SURGERY" has now entered upon its sixth year of publication. Much praise is due both to the home and foreign editors for the high literary standard sustained. It is the only journal published in the English language devoted exclusively to science surgery and which does not seek popularity by giving minor surgery, but rather bringing the reader up to the highest literary and practical attainments, nor does it in the least degree cater to advertisers. The numbers are well illustrated with fine engravings and diagrams, elucidating the text. (\$5 00 per year. Sample copies 50 cents. J. H. Chambers & Co., St. Louis, Mo.)

FRESH EGGS form a valuable article of diet, not easily procured, because they soon become stale. Almost every body could keep a few hens. If well bred, they more than pay for their keep, if they get any chance at all; and the one keeping them can make it a pleasure to look after them, instead of a trouble. There are no better breeds than the Plymouth Rocks and Wyandots for either laying or for the table; indeed but very few are so good. They will lay very well in the winter if kept warm, and their flesh is abundant, tender and juicy. Any of our readers desiring fowls—eggs or birds would do well to communicate with Mr. T. W. Tapscott, of Brampton, Ont.