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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.

For Contents see next page.

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VOL. XIII. APRIL, 1891. No. 4.

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CANADA HEALTH JOURNAL.

A Monthly Record of Sanitary Progress.

VOL. XIII. APRIL, 1891. No. 4

ON WATER SUPPLY, WITH SPECIAL REFERENCE TO THAT OF TORONTO.

IN his last report on the Toronto water supply, dated April 2nd, inst., Dr. Ellis concludes in these words: "Fortunately the volume of leakage is so small that, as is seen from the above analysis, the purity of the supply is practically not affected." Now this is a point upon which we are sorry to differ with the able analyst. While it is true that the small amount of leakage of the foul bay water into the main supply from the lake does not render the great bulk of the latter *chemically* too impure to pass as barely coming within the limits of a first class water, we contend that *biologically* such water is highly dangerous. Numerous experiments by eminent, well known scientists in Europe, with which Dr. Ellis is doubtless familiar, clearly show that specific, zymotic diseases may be communicated to the human organism by water which appears to be, chemically, of the best quality. We have no doubt whatever that by the leakage of the bay water into the main supply the latter is "practically" and most dangerously affected. No one familiar with the nature of pathogenic micro organisms—the infections of specific diseases—will doubt that the water of the bay frequently if not constantly contains such organisms, from infected sewage. And while the chemical or soluble impurities in this water would be quickly diluted by and almost lost in the large quantity of lake water into which it had leaked, the living organisms, whether of animal or vegetable growth, while they would be dispersed or scattered, would not be diluted, nor would their vitality and infective powers be destroyed. The spores of the anthrax bacilli for example have been known to live in distilled water for more than three months. As was said by an eminent practical Sanitarian, Dr. Vivian Poore, F.R.C.P. (Phys. to University Col. Hospital, and Prof. in Univ. Col. London), in an address at the last Anniversary meeting of the Sanitary Institute of Great Britain: No amount of dilution is capable of destroying a zymotic poison. In fact it is not impossible that the mere dilution of organic matter which contains the poison with water may be the means of keeping it alive and causing it to multiply.

Toronto has afforded abundant and very costly corroborative or confirmatory evidence that the water supply there is highly dangerous. From the first outbreak of the typhoid epidemic in Toronto we have contended that it was due to infected water. Ottawa had a similar experience a few years ago. Such experiences will doubtless multiply. So long as the people will continue to befoul the streams and lakes with sewage, on the one hand, and on the other, to take their water supply from the same streams and lakes, so long will typhoid and kindred infectious diseases continue to increase and destroy the lives of men and women who are much needed to help to increase the population of the Dominion. The public much need educating in all such sanitary questions. And one of the first lessons which it would be well for all to bear in mind is that, although water may appear pure and taste "sweet," and prove on chemical analysis to be what chemists call a first-class water, it may possibly contain germs of malignant disease. The source of the water and its *biological* condition should always be taken into consideration.

ON SOME PRACTICAL POINTS CONNECTED WITH MILK SUPPLY.

IN a recent paper read before the Epidemiological Society of London, Eng., Mr. Shirley F. Murphy, Medical Officer of Health to the London County Council, and Sanitary Director of the Dairy Supply Association, London, dealt with many important points of practical sanitary interest in connection with the subject of healthy milk production and milk distribution. The milk supply needs care and supervision hardly less, if not more, than the water supply, and the public cannot be too often reminded and warned of the dangers connected with it. In English exchanges, reports of outbreaks of typhoid and scarlet fever and diphtheria from infected milk are quite common. Dr. Ernest Hart, the talented editor of the British Medical Journal, at a recent London Congress submitted an abstract giving, in tabular form, particulars of 71 recent epidemics, due to infected milk, that have been recognized and made the subject of detailed observation in Great Britain. In Canada they may be more common than is apparent, as here there is not the system of inspection which is exercised in England. Besides outbreaks of infectious disease, many other diseases of the human organism, especially of infants, such as diarrhœas, tuberculosis and numerous disordered states, are caused by bad milk. In the supervision of milk dairies there are many points to be considered: the health and condition of the cow, and even her history, for a cow may appear to be in excellent condition for months and give a good supply of milk and yet be affected with tuberculosis, the infective bacilli being discoverable in the milk ; then the housing, the cleanliness, dryness, cubic space and ventilation of the stable, and the surrounding conditions ; the food of the cow and the water she is supplied with ; the condition as to cleanliness, &c., of the udder and the milker's hands just before the milking process ; the cans, strainers and other vessels, and the cooling and after care that the milk shall not absorb infections or impurities ; that there be no cases of infectious disease associated in any way with the family of the dairyman or milk dealers or vendors. Valuable human life may be sacrificed for want of proper supervision in connection with all these different procedures directly associated with the public milk supply.

In the above named paper and in another by Dr. Alexander Bryce (Prof. in Anderson's Col. Med. School,—pub. in Glasgow Sanitary Jr.) the following suggestions amongst others appear :—No newly purchased animal should be admitted into the cow-shed until it has been subjected to one month's quarantine, being milked only by a person who does not come into contact with the rest of the herd, and if any udder disease break out in the herd, isolation should at once be carried out. Cows lie down in their own excrement, a fresh coat being put on each day, decomposition takes place, and this goes on for months. There are two remedies given for this condition, with plan of stable floor. These are, (1) make the floor of the stall from the trough to the channel the exact length of the cow's body ; (2) make the channel, or floor back of the stall part, from 6 to 8 inches lower, so that the excrement shall be quite out of reach of the cow's quarters when she lies down. If, in addition, the floor in the stall be covered with clean straw and the portion near the channel renewed night and morning, there is no possible chance of the soiling of the cow's quarters and udder. Then, the cow's udder should be carefully cleansed (brushed or wiped) before the operation of milking, and " what is most important of all," the milker should wash his hands after the milking of each cow, or at least, as in Denmark, after every second cow. In this way, should udder disease attack one cow, there is less danger of the disease spreading to others. As the paper states, " all these points are of the utmost importance, and it is strange that so very few pay any attention to them, and the only reason that can be advanced is the ignorance of the farmer, preventing the proper interpretation

of the proverb that 'Cleanliness is next to Godliness.' "

In the case of each farm examined for the Dairy Supply Association, an inquiry based on the lines of the papers was instituted, and by this means the education of the dairy farmer is proceeding all over the country. Each farmer was advised as to the best methods of cleanliness in his own particular case, and where alterations were necessary, and could be executed with little cost, they were carried out.

There is in Canada a broad field for cultivation in regard to milk supply—as to legislation, municipal oversight by local boards of health, and above all, education of farmers and dairymen. The proposed Dairy Schools in connection with the Agricultural Department here may be made of great service in this respect.

WHAT IS CLEANLINESS?—ASEPTIC AND ANTISEPTIC "METHODS."

CLEANLINESS in a popular sense is somewhat relative or comparative. A dwelling which one housekeeper would pronounce clean and satisfactory another would proclaim filthy and intolerable. In like manner it is with city streets, so that it may be said, there is cleanliness and cleanliness. That cleanliness which is a part of godliness, and which was recognized and practiced by the Essenes and other ancient Jews, is at least the utmost possible freedom from every trace or spec, in any way perceivable to the senses, of dead, used-up, waste organic matter from whatever source, animal or vegetable, and more especially from the human body,—the skin, lungs, etc.—the most complicated of all waste, and hence the most prone to decomposition and putrefaction. Modern scientific surgery now goes further than this. Why should we not in general ordinary habits of life? Soap and water, especially in the present rather dirty age, are not sufficient. Antiseptic surgery is largely superceding simple aseptic surgery. The simple absence of perceivable dirt is not enough, something is demanded to destroy—to break up into simple harmless elements the microscopic or infinitesimal waste particles, upon which germs and microbes feed and live. These are called antiseptics. When they are powerful enough to destroy living germs or infections they are termed disinfectants. Most perfumes are antiseptic, so also are coffee, the turpentines, and many other well-known substances. Over fifteen years ago we gave in this JOURNAL a lengthy paper by an eminent Australian physician, Dr. John Day, in which was shown the value of these substances, not only in hospitals and sick rooms, but in every day rooms and every day life, for the preservation of health. As Dr. Day then stated, the value of eau de Cologne, of the turpentines, encalyptus, gasoline, &c., is due to the peroxide of hydrogen, "nature's disinfectant," given off by these substances. Peroxide of hydrogen, it appears, contains a larger proportion of oxygen than any other known substance, and a part of its oxygen is but loosely held, and so is ready to combine with any organic oxidizable matter with which it comes in contact. It is in short the most powerful oxidizing agent known. A year or so later, in another paper published in this JOURNAL, Dr. Day reported on 115 cases of scarlet fever which he had treated, and in which the chief remedy was inunction three times a day all over the body with a preparation of an ethereal solution of peroxide of hydrogen and lard. There were only six deaths in all, but the most marked value of the remedy was in preventing the spread of the disease. The 115 cases occurred in 88 different houses, and in only seven houses was there any extension of the disease after this treatment was commenced. Dr. Day said that he recommended all his patients and friends to use the peroxide freely. Absolute purity requires something more than soap and water. The ancients practiced inunctions with perfumed oils, doubtless with the view herein indicated. Palm oil gives off peroxide of hydrogen. This preparation is now being much used and is highly recommended in surgical practice. It is a most valuable antiseptic in every-day life, and promotive of absolute cleanliness.

TYPHOID FEVER AND OUR INLAND WATERS.

As a Medical writer recently said, tuberculosis in some form, especially pulmonary consumption, is the chief cause of mortality; but typhoid fever will be found an easy second and following close;—the former choosing its victims from all ages, and perhaps more from the weak and delicate, the latter more particularly from those of youth and middle age, and equally, if not more, from the strong and robust, emphatically, from the promising and producing class. While typhoid is increasing and as it were picking its victims from among the best lives in the country, the people are everywhere scattering broad-cast the germs of the disease by pouring them with the sewage into our everywhere circulating waters. Five years ago the editor of this JOURNAL brought this subject before the American Public Health Association, in a paper on the dissemination of infectious diseases by our inland waters. A committee was then appointed which later reported most emphatically against the present practice of stream pollution, and the near danger of it. Still the vile practice goes on, of course, and will for some time, till probably hundreds of thousands more of human lives are sacrificed by it. Since that time a good deal of literature on the subject has accumulated. The American Lancet for the current month (April) gives a lenghty paper bearing upon it, read before the Detroit Academy of Medicine by E. P. Christian, B. A., M. D. &c. In this the doctor said, "At this day the source of the infection of typhoid fever is supposed to be so well established, that is, by means of the germs taken into the system through the water in which they exist, that personal exposure to emanations from one sick with the disease no longer offers a satisfactory explanation of the source of infection; and when successive cases occur in one family, the fact is more satisfactorily accounted for by reason of the common exposure of all to the same source of infection in the drinking water; and the successive, instead of stimultaneous succumbing of the individuals, explained by different degrees of vital resistance to the pathogenous germs, or by less amount of the poison received into the body. . . . . That the source of the typhoid poison is now universally regarded as in the drinking water, we believe will generally be acknowledged."

Dujardin-Beaumetz, an acknowledged high authority, says (*in Therap. Gaz.*) "We know to-day that the most active agent in the propagation of typhoid fever is the use of water contaminated by the ejecta of typhoid patients, which furnishes a medium of culture favorable to these micro-organisms. In all epidemics which we observe to-day it is always in the water we find the contagious element; an element which we may cultivate to reveal fully its presence."

Again, Dr. Christain said, "If the poison lurks in the pollution of streams by the ejecta of typhoid patients, and in it the germs live and grow and multiply, and these streams are regarded by legislators as existing primarily and furnishing the easy and ready receptacle for the sewage of the cities which line their shores, secondarily as having their uses for navigation and manufactories perhaps, and *merely incidentally convenient* for water supply for culinary, lavatory, laundry, and drinking purposes, how long will it be with our annually increasing millons of population ere the greatest of them will become too polluted for this latter purpose, even as the populations which line the lower shores of some of our largest rivers are now finding to be the condition, especially those below the large cities.

At a recent meeting of the Albany, N. Y. Health Board, Dr. Balch, the Health Officer, and Secretary too of the State Board of Health, reported that during January 205 cases of typhoid fever had been reported to him, and that 18 deaths had been caused by it. As the fever was most prevalent in a part of the city using the river water, and as the disease was prevalent in up-river cities, it was thought by the medical men present, mostly, to have been depend-

ent upon the water as its cause. This particular epidemic is referred to as but an illustration of the increasing danger in the sewage pollution of even large streams.

In the lectures which Professor Brouardell gave recently in the Academy of Medicine, Paris, in the discussion which was raised on depopulation, there was shown a series of facts which placed beyond doubt the propagation of typhoid fever, largely it appears from stream pollution, as an agent most active in reducing the population of France.

Dr. Christian in his paper contends that the fever is sometimes, it may be often, spread by the use of milk from cows which have drank water containing the typhoid poison, and gives instances in support of this contention.

The fact is, as said recently by an eminent practical Sanitarian of London, Dr. Vivian Poore, quoted in another article herein, on "Water Supply," &c. If we persist in thus fouling our streams, the farmer may soon have to pay a "water rate" for providing an artificial water supply for his horses, cattle, sheep and even poultry;—especially in view of many diseases of animals being communicable to man.

Here is certainly something for reflection, and *action* by our Canadian authorities, relative to the pollution of streams.

VEGETARIAN.

Men capable of sustaining fatigue for an indefinite period are the pulse-eating Sikhs, and the date-fed Arabs. The Kafir and Tartar live on milk. The Smyrna porter can shoulder a load of eight hundred pounds, yet his diet is fruit and olives. Officers in the English army who have served in India say that there are no more active or efficient soldiers in the world than the vegetarian troops in Northern India. They can out march if not out-fight any regiment of beef-eaters. Irish and Scotish soliders brought up, the one on potatoes and buttermilk, the other on oatmeal, are at least equal in strength and endurance to the same number of Englishmen who owe their powers and bull-dog propensities to roast-beef and foaming ale. Cyrus, the great Persian conqueror, lived from his youth, it is said, on vegetables, and drank only water. The diet of the heroic Spartans was black bread and vegetables. The ancient Egyptians were opposed to killing animals, from religious scruples. Buddha, Pythagoras, Plato, Plutarch, Diogenes, Seneca, Lamartine, Milton, Newton, Leonardo da Vinci, Wordsworth, Franklin, John Wesley, Wm. Cullen Bryant, Bronson Alcott, and many other great thinkers and indefatigable workers, all bear witness to the value of simple living, without the use of flesh meats.—So says, The Laws of Life.

SANITARY administration, says Erastus Brooks, means not only personal comfort and health in the family, but economy to the estate and family. Two hundred and fifty-thousand lives lost, three million cases of sickness and $20,000,000 in money are traced, in one decade in England alone to neglect of sanitary care. The sword and musket are terrible ministers of death, but even in armies, where battles kill one person disease kills at least three."

THIS may save the time of some busy physician: A very loquacious lady, calling one day to consult her physician, talked on and on with such volubility that the latter could not get in a word. Growing impatient, he at length told her to put out her tongue, which she did. He then said: "Now please keep it there until you have heard what I have to say to you."

THE Democrats recently in Michigan proposed to abolish the State Board of Health. This awakened such a storm of remonstrance from every portion of the State and from every class of intelligent citizens that at this date it seems probable that the Board will not only be continued, but that there will be increased appropriations and improved facilities for it.

ON THE DISPOSAL OF "NIGHT SOIL" IN CITIES AND TOWNS.

THE difficulties experienced by Toronto in respect to a place for the deposit of the "night soil" of the city induces us to make a few remarks on this subject which may be of benefit to many cities and towns as well as to the people who live in the neighborhood of the locality in which such soil is deposited. The reports from sewage farms, in which the sewage is disposed of in a fresh state, all go to show that no increase whatever in the sickness or mortality rates had ever taken place in the neighborhood from such application of sewage. Fermenting, putrefying excreta is very different from fresh sewage, yet, with proper management it may be disposed of in the soil without any risk to the health of the neighboring residents. So long as it is not allowed to become dry and its particles are not in any degree diffusable by wind or air currents before being mingled with the soil, there is no danger from atmospheric infection, but care must be taken that no well or other water supply is near enough, or so situated, as to become infected by it. All that deposited during the warm weather should be immediately well and completely covered with a layer of earth, and any that is deposited during the winter must receive careful attention early in the spring. The great point is, and the invariable rule should be, to bury the excrement in, and mingle it with, the soil as soon as possible after it has been carted to its destination. The value of fresh lime and dry earth in dealing with fermenting organic matters of this kind was well illustrated at the last meeting of the Society of Medical Officers of Health, of England, by Dr. Sykes, who narrated his experience of the immense value of these substances in the removal of 2,000 bodies and 4,000 tons of the most horribly offensive earth from St. James's Churchyard, in the parish of St. Pancras, to the extra-mural cemetery. As the ground was opened quicklime was thrown in, and the stench at once ceased. The coffins were placed in wooden cases with lime, and at first lime was spread over the loads of earth; but complaints being made by the residents in the streets through which the carts passed, he substituted clean earth, when no more complaints were raised. The graveyard had been closed for twenty years, and "the condition of the bodies was awful," indeed. without the lime it was said the operation would have been impossible.

ON GARBAGE DISPOSAL—SUGGESTIVE.

NEARLY all large cities experience difficulty in disposing of their coarse garbage—household or kitchen refuse, chiefly ashes, dead animals, &c. No crematory has yet been discovered which can be worked with much satisfaction: although doubtless by complete combustion in a superheated furnace would be the best manner of disposal. Toronto is now being put to great inconvenience for want of some satisfactory means of preventing her garbage from becoming a nuisance and knows not what to do with her refuse. We would suggest a low piece of ground with plenty of fresh lime and fresh earth, the dryer the better. Ashes, of course, never gives rise to a nuisance, except by being unsightly when in the wrong place. If all organic refuse —kitchen waste, dead animals and the like. were well covered at once when deposited with quick lime or dry earth, they could not give rise to a nuisance anywhere, and a small acreage of low ground would take with advantage a great deal of such matter. If properly deposited, *i.e.*, covered or mingled with abundance of lime and earth. there does not appear to be any reason why such ground might not be built upon after many years; although it would be better to reserve such places for parks or vacant places, when well covered with

vegetation,—grass, flowers, shrubs and trees. The more kitchen refuse is burned in the ranges or cooking stoves the more economical it will be, of course, for the municipality to cart away the garbage, but it is not easy to induce people, servants or others, to do this. In course of time this method of kitchen cremation may become common, if the people can be educated up to it. If every town and village as well as city would select some convenient spot of lowground where abundance of good earth could be easily obtained, and have all waste stuffs carefully gathered from streets, lanes and back yards, at regular intervals, the oftener the better, and covered in the earth as indicated, it would cost the municipality but very little and would make a vast improvement in the healthfulness and appearance of the places. On another page reference is made to the disposal of "night soil." But when earth closets take the place of privies, as it is to be greatly hoped will soon be the case everywhere, all waste can be deposited in one place.

A PAGE FOR POLITICAL ECONOMISTS.

DR ALFRED CARPENTER, at a late meeting of the Association of Public Sanitary Inspection, at Liverpool, gave some figures showing the enormity of the loss to Great Britain from the present wasteful method of disposal of excremental matters. It is a subject which Canadian legislators would do well to consider in a more practical way, for the good of the Dominion. We commend Dr. Carpenter's remarks to all who are interested in the future welfare of our country, and give below a synopsis of this imporant part of his address.

He first drew attention to a very important sanitary ordinance found in Holy Writ, on the ultimate disposal of human excreta; the earliest lessons in hygiene being found in the laws instituted by Moses, the Hebrew law giver. It was clearly stated that those who disobeyed those laws should be overthrown by the "armies of the Living God." Those threats are frequently repeated by the Prophets. We are clearly told that those armies would not be regiments of human beings, but the palmer-worm, the canker-worm, the blight, and the mildew.

The customs of the Anglo Saxons on this point are not certainly known to us, said Dr. Carpenter, but Mr. Seebohm's book upon old English tenures gives us some insight into the plans of our Celtic forefathers, from which it may be gathered that excretæ were utilized outside the homestead; but ever since Norman William and his feudal lords erected their castles about the country and placed impediments in the way of exit from them, excreta were left at first in the open fossæ which surrounded the habitation, for removal by other creatures or to be washed away by the rain, and then, as such depots were inconvenient arrangements, holes were dug in the ground in which the products were hidden away under the mistaken expectation that they would be lost to memory as well as to sight. And so for 800 years the land has been more or less deprived of its principal fertilizing agent.

Now just multiply the value to the excreta of a single person as equal to 5s. by the population of the country, and then by 800, which is the very lowest estimate, and you may have some idea of the enormous amount of wealth that has been lost. If I take the average population at 6,000,000, it would have produced simply as a matter of *money value sixteen thousand millions of pounds sterling.* But there are two other sides of the question besides the mere loss of wealth. The very utilization itself would have necessitated more employment in field labor, and the increased fertility of our land would have kept our agriculturist in the country instead of filling the back streets of our towns with idle hands. Every day's labor would have brought its value to the nation in greater vegetable production, with its sequence of more meat, milk, and

vegetables at the command of the multitude. We should then have adopted the right principle of protection instead of the fallacious one of putting import duties upon food stuffs. Had this line been followed instead of disobeying the law, no bread stuff would have been wanted, for the land would have grown all that the population required. This is done now in other lands where the average population is much thicker upon the ground than in this country, but who have followed the dictates of nature and necessity.

The doctor then gave the results of the practice as it might be carried out in the present day by means of sewage farming. At present excremental matters are but too often sent into the sea or destroyed by chemicals. If, instead of this, they be conveyed to the land, five crops may be secured instead of one; five times the amount of labor would be required, agricultural laborers would be kept at work in the country and at good wages which would give useful profit to those among whom they live, while five times the amount of meat and milk would be provided for the population which produces the sewage. Economists will say that we do not raise them at home because we can get them cheaper from abroad; then why do we raise any at all? I contend that we only import enough to fill up our own deficiencies, and that not a single head of stock could come into the country if the land—especially if the Irish landlords had done their duty—were cultivated as it ought to be, and our excreta utilized.

Dr. Carpenter hoped the day was not far distant when Parliament would decree that sewage shall not be destroyed by chemicals or sent into the sea, that such things shall be antinational offences as much as piracy and slavery, and shall be disallowed by common consent.

MR. WYNTER BLYTH ON THE PRESENT POSITION OF DISINFECTION.

AT the meeting in February, of the Society of Medical Health Officers, England, Mr. Wynter Blyth, in introducing the subject of the present position of disinfection, expressed his intention to confine his remarks to one important change that our ideas on the subject had undergone within the last few years. When Robert Koch in 1881 gave to the world the first results of his inquiries into the relation of micro-orgnisms to disease, it was the general inference that pathogenic microbes, or those concerned in the propagation of diseases of the infectious kind, were exclusively, or nearly so, of the spore-bearing class, and that since the spores of all such organisms possessed great inherent vitality, no so-called method of disinfection could be deemed thoroughly efficient which did not succeed in destroying the vitality of the spores of *Bacillus anthracis*, the most resistent of all. Now, however, that the nature of pathogenic microbes was no longer a matter of conjecture, those of most specific diseases having been identified, it was found that the *Bacillus anthracis* could not be looked on as a typical of the whole class, since the greater number, including such well-known forms as those of cholera, enteric fever, epidemic diarrhœa, septicæmia, and erysipelas, were not sporiferous, but occurred as micrococci, streptococci, or bacilli, very feebly resistent to heat or chemical agents. It, was, therefore, unnecessary to have recourse to powerful chemical substances the use of which was attended by various practical difficulties. In a paper read before the Royal Society he had pointed out the importance of temperature, time and space as factors, and had shown that under appropriate conditions such simple measures as lime-washing and aeration were in most cases amply sufficient for disinfection. Recent experiments, as those of Behring and of Pfuhl, published in the *Zeitsch. f. Hyg.*, had proved the remarkable efficacy of lime. Boer had observed that while the addition of very small

quantities of lime to culture fluids greatly favoured the development of the bacteria, larger quantities, or the equivalents of potash or soda producing an alkaline reaction equal to what was known as 50 of normal acidity, were speedily fatal to all pathogenic organisms in any form other than the spore. Thus the strongly alkaline soft-soaps were far better germicides than the much vaunted carbolic, thymol, or terebene soaps; and stripping off the wall-paper, lime-washing of walls and ceilings, with scrubbing of the floors and wood-work of a room with soft-soap, was generally sufficient for all the purposes of disinfection. Lime, from its power of absorbing sulphur compounds and other offensive gases, while it was itself inodorous, was specially suited as an application to the contents of street gulleys, in the removal of disinterred corpses, in mortuaries, and in nearly all cases in which it would not cause the evolution of ammonia. For deodorising stable-manure and excreta, he thought that the acid sulphates, which would fix the ammonia and not detract from the value of the manure, would be found preferable to carbolic powders. In the disinfection of rooms, he now believed that sulphur fumigation was a useful addition to lim -washing, &c., though at one time he was very doubtful as to its efficacy; but he held that all disinfection should be composite. He was inclined to the belief that the danger of infection being carried by the clothing of persons visiting the sick had been exaggerated. He did not deny that it might be conveyed by attendants who had been, so to say, "soaking" all night in the poisoned atmosphere, but it was quite a different matter with medical men and inspectors, whose exposure to the infection was of short duration. He suggested that *Intermittent* heating below 100° C. might be well employed in the disinfection of such articles as would be damaged by higher temperature. Dr. Caiger, as medical officer to two large fever hospitals, said he had frequently had to disinfect wards, the walls of which had been saturated for months with the poison of one or other fever. He used only soft-soap and lime-washing, followed by free aeration, and had never found the patients subsequently admitted contract the fever that had been treated in the same ward previously. There were regulations as to bathing and change of clothing by nurses going out of the hospital, which he believed were practically a dead letter; yet, though he had given 12,000 passes in one year, he was not aware of any infection by their means. Dr. Gibbons said, when in the country, he had often known scarlatina carried out by nurses to the neighbouring villages. It was said that recent German researches appeared to establish the superiority of *current* to pressure steam, the steam being admitted above, and its temperature observed at its exit below.

OUR CHILDREN'S INHERITANCE.

Unless we are now able to preserve our mental and bodily forces intact, our grandchildren will be victims to our faults. They would even have the right to a certain extent to call us to account for our careless conduct. "What did you do with that vigorous body and healthy and sturdy mind that were given you by your parents? for it is by your fault that we are miserable and sickly." The importance of the question is thus well established. Since the future depends on the present, it is no less than a question of the future of men. This being fixed, the query arises, Is there mental overstrain? A careful examination of the facts gives us occasion to answer affirmatively. In consequence of the prodigiously artificial conditions of existence which our advanced civilization has imposed upon us, we have greatly modified the habitual and physiological life of our organism. A close study of the habits of contemporary men, such as the author of this book has made, will show that nothing is less in agreement with a healthy vitality than the mode of living of to-day. —Charles Ricket in the Popular Science Monthly.

HOW SHOULD GIRLS BE EDUCATED—A VERY IMPORTANT PROBLEM.

WE have always maintained that up to the age of ten or twelve years girls and boys may well be educated, as well as allowed to romp together, but that after that period of life the welfare of the girl demands different management in the educational course. We are led to refer to this subject again by an excellent and exhaustive presidential address on the same by Dr. W. Warren Potter, delivered at the 85th annual meeting of the New York State Medical Society, and published in a recent number of the New York Medical Journal.

Dr. Potter says: The years between ten and fourteen are full of import to a girl; during them she lays the foundation for future weal or woe, and this is a period of infinite responsibility for mothers—perhaps the greatest of any part of the educational life of their girls,—education in its broadest sense, and not to mere scholastic acquirements. Many girls begin their new physiological life at the age of twelve; but if they should not do so quite as early, this is still a period when nature is making preparations for a new existence, and if her plans are interfered with or thwarted, even in their smallest details, years—long sorrowing years, perhaps—of pain and suffering and woe are sacrificed to the shrine of ignorance or wilful neglect.

During the age between eight and sixteen or seventeen girls pass most of their time in the overcrowded and badly-ventilated school buildings which are provided by our "splendid common school system"; or they are poring over their books at home, cramming their young brains with problems of algebra and geometry when they might better be cultivating a healthy physique to enable them to cope with the requirements of every-day life; or else, if they are in attendance upon one of the fashionable boarding-schools or colleges for young women, we find them from early morning until late evening making systematic endeavor to ascertain just how much overwork of mind and body the human female of tender years can endure without breaking down.

The common school system, as Dr. Potter says, is even more dangerous in its demands than the private schools and colleges. A common standard is insisted upon for each grade, and the girl must work to the line with the same precision as the sturdy boy, or miss the chance of promotion to the next grade.

The scholastic training of girls is being carried on with its greatest vigor at the very time when they are physically least suited to bear the strain. Just when the special female organs and functions are beginning to require a large expenditure of nerve force, the brain, under our present system, is also demanding all that an active cerebration can produce, and oftentimes even more. Nature is demanding during this very period that the organs establish a function which shall properly fit the young maiden for her future sphere of wife and mother. How can she properly or without danger and much unnecessary suffering, fulfil this important law of her being if the reproductive organs are dwarfed, weakened or diseased by artificial causes imposed upon her during their development? Just here begin the causes oftentimes which in after life produce the sterile wife or invalid mother. "I have no doubt that in many instances these deplorable conditions take origin in the over education or improper education of girls during the tender years of their development into young womanhood."

"Mothers should be made to understand that when their daughters begin to complain of headache, backache, and indescribable malaise, these are the warnings which must be heeded. They are the manifestations of nerve-tire, the crying out of the nerve ends for rest, the protest of nature against further continuance of overwork, the danger signal hoisted to warn of the relentless ravages of the approaching tornado; and, further, that, unless they receive a patient hearing and an intelligent interpretation during their

earlier exhibitions they will assuredly lead to serious impairing of physical and mental vigor."

Dr. Potter dwells on the great responsibility of mothers and of family physicians in this regard, and upon the importance to the young girl of abundance of fresh, outdoor air, plain nutritious food, and suitable clothing, to invigorate the whole bodily structure. He thinks there is "no better test of a woman's health than her ability to eat a hearty breakfast..... Certainly pretty women" can do so. He is fully persuaded that four hours a day of study or school work, for girls between the ages of twelve and sixteen years, are quite as many as they can healthfully endure: and that during the "monthly period" they should relax their studies or "forego the recitation room," for example.

This is undoubtedly an important theme for the most careful consideration of mothers, educators and physicians, bearing, as it does, so directly upon the future welfare of mankind.

PRECISION IN PHYSICAL TRAINING—ECONOMY IN MUSCULAR FORCE—A TREMENDOUS EDUCATIONAL FIELD FOR CULTIVATION.

SURELY we are near the dawn of great changes in our present defective system of education. Surely mental instruction,—rather mental cram, from a superfluity of useless text books -to the vital injury of the physical system, and leaving it to educate itself, has gone on long enough. The blind leading the blind. The following few extracts from a lengthy paper by M. Georges Demeny, in the Revue Scientifique (translated for Pop. Sci. Mo.), which indicate the nature of the coming useful change, will, we trust, interest many readers.

To the three essentials of physical education—health, harmonious development, economical utilization of muscular force—correspond a series of exercises which can not produce their maximum useful effect without being subjected to regulations.

Health may be with equal ease confirmed or destroyed by exercise. It is only necessary to refer to the deplorable condition of the ancient athletes, with whom the enormous mass of the muscles absorbed all the activity of the organism. Health, therefore, does not depend on the size of the muscles nor absolute muscular force. It is the harmony of the functions, and does not exist without a certain daily expenditure of muscular labor. Many persons, it is true, enjoy perfect health without giving themselves methodically up to physical culture; but such persons are easily disturbed by departures from their regular course, or suffer fatigue disproportionate to the effect produced. They can not endure the causes of perturbation, while it is the power to endure that constitutes robust health. It is one of the great benefits of exercise and of *regime* that they give the organisms the faculty of accommodation to the diversities of our activity and of the medium that surrounds us. From the hygienic point of view the introduction into our daily habits of exercise in the open air, in the form of various games and sports, can not be too highly commended; all such exercises, if we wish to make them always efficacious and exempt from dangers, should be subjected to rule.

We can not prudently leave youth without direction to organize competitions, like the race, in which violent exercises figure; it is indispensable to be on guard against the excesses which unrestrained emulation and self-love induce. Without this, exercises, which are salutary when practiced with moderation, degenerate into overstrain of the most dangerous character. We have in this way to regret numerous grave accidents due to colds, troubles of the digestion and the circulation, falls and blows. Under these restrictions, exercise taken under the form of open air games presents a special attraction to all; it offers the best hygienic conditions; but to constitute

a physical education, it ought also to respond to . . the harmonious development of the body and useful application.

The writer then refers to the difficulties in carrying out public scientific training, especially in crowded cities, for want of out door space, and continues: Let us, nevertheless, use all our efforts to multiply the public places and shelters for the sole purpose of furnishing children and individuals of every class and every age with places designed for exercise in the open air.

The essential factor of physical education is voluntary motion. From the hygienic point of view it is important to have a sufficient amount of exercise to stimulate the combustion in the interior of the organism, and to facilitate the elimination of the wastes of incomplete combustion, which develop into real poisons. From the point of view of harmonious development, not the amount alone of exercise is to be considered, but the form or nature of the movement also; not the quantity, but the quality, too, of the movement is of importance. . . . . .

Absolute muscular force, measured by the dynamometer, soon reaches its maximum, and if we limit ourselves to this gross measure, we shall have but a false idea of physical perfectionment. It is not, in fact, in the absolute measure of muscular force that a great modification is to be found, but in the aptitude for producing a large sum of work with moderate fatigue and an economical expenditure of force. This refinement is produced in the nervous centres; through attention sustained by the will, through the frequent repetition of well-defined muscular acts, we are able to reach the point of suppressing useless contractions in the desired movement, and bringing into play only a portion of the muscles which were at first contracted in a mass.

Everybody walks, runs, and jumps: but they are few who have a passable gait unless there are trained to it. In short, we learn to walk, run, and jump, as we learn all the rest. We cannot well learn alone: and it is one of the essential objects of education to perfect the normal gait as well as all the movements in general.

There should be instituted in education a special technical teaching in which the mechanism of the movements and their physiology shall be studied with all the development which it permits. . . We can also by this means introduce ameliorations into manual trades by seeking for a more perfect adaptation of tools to the human organization, and in general the best utilization of muscular force wherever it is called into exercise. This branch is, with hygiene, one of the most useful applications of biological science and touches at many points upon the amelioration of the condition of the laboring classes.

OBSTACLES TO SANITARY PROGRESS—"VOTING" MONEY.

ON first view there appears to be two chief obstacles to sanitary progress: one comprised in a want of knowledge—ignorance—respecting the laws of health, or ways of preventing disease and, especially, of the value or good results of practising these laws, or carrying out preventive measures; the other, want of money, means or ability, to make sanitary improvements when the value of such are known but perhaps objected to or put off as too costly &c. Thousands do not know, for they never have been taught or told, that most diseases may be easily prevented, nor how to prevent them. They do not know the value of good drainage, pure air and water, well cooked food, and prompt isolation of the sick. Hence they care not to vote for spending money for procuring any of these essentials. On the other hand, the educated or wealthy citizen, or perhaps the poorer artizan or laborer, votes against a by-law to provide money for sewage because it will increase his taxes to the extent of a dollar or two or more, knowing the danger of delay, yet preferring to risk the possibility of being required to pay ten or a

hundred times as much more, in costs of sickness than the extra taxes would amount to; while the farmer lives over a damp cellar or uses water from a well he knows is not quite safe rather than at once incur the trouble and costs of draining the cellar or providing a better water supply. Briefly, the two obstacles appear to be want of knowledge and want of means. The obstacles exist everywhere, in regard to individual or personal health as well as the public health, among the educated as well as the uneducated, the rich as well as the poor. In recent years it is true there has been a great general improvement in this regard, and sanitation is becoming a much more popular subject than it was. Very many towns are nevertheless in great want of a good water supply and sewerage, a better system of scavenging or general inspection, certain of the citizens seeing plainly a great need of such, yet the people—the masses, the majority, will not vote the money for the same; although money for a railroad or a manufacturing establishment would perhaps be readily voted. In Parliament, boht Dominion and provincial, the same difficulties prevail. Members themselves may see the desirability and need of, and would support, a "vote" for health purposes, but feel that their constituents would not take the same view. If we look deeper than the first view, then, we find want of money the one great obstacle to sanitary progress; and money, after all, chiefly to educate the people. The people must be educated in public health work. Money must be obtained for the educating process. We can only work and wait; urge and hope. It must come in time. Municipalities, large and small, might now sometimes improve the chances of carrying a vote for money, by allowing a good deal of time to elapse between the proposal or announcement of the intention of the same and the time of taking the vote, and meantime holding meetings and discussing the subject, showing the advantages the proposed sanitary improvements would confer, the dangers of delay, &c. If interest like what is commonly taken to secure votes for members of parliament, aldermen and councilmen, were taken on behalf of the sanitary vote, this would oftener be carried; opposition usually not being very strong or active.

MISCELLANEOUS NOTES AND EXTRACTS.

PRECISION IN PHYSICAL TRAINING.

BY M. GEORGES DEMENY.

The high aim of science should be, definitely, the physical and moral perfectioning of mankink. The exercise of the cerebral functions of all ought undoubtedly to be directed from infancy by educators. It is generally agreed that physicial education is a necessity of hygiene, but it is not clear to every one that physical education should be subjected to rules and to a precise directing. It is a mistake, in our opimon, to think of getting the best results while neglecting to make scientifically a comparative study of the different methods employed, and while abandoning, as is often the case, the exercises of the body to the caprice of the imagination. There result from this vague condition various currents of opinion contradictory of one another and detrimental to the final result proposed, of ameliorating the physical condition of our population especially of the population at school, of every degree. Fortunately, the elements of physical education are tangible, its effects are measurable, and we can conduct the discussions on a positive ground on which they fall of themselves. This condition is very different from that of mental education. It is a certain motive for improvement; and we propose to review the precise means which have contributed to the result. We shall first try to show that it is possible to form a scientific conception of physical education at the present time. We shall then see that the new processes of physiology already permit a satisfactory control of its results. For a method of education to be established, it is necessary that the end sought be well defined, and the means employed be perfectly adapted to the proposed end

and compatible with the human organization. The indisputable object of education should be the perfecting of the individual in view of the general progress; it is an economical object, having as its consequence a much greater conversion of human activity into useful work. In physical education it is necessary to apply all the general knowledge we possess concerning the relations between the function and the organ, concerning the modifications endured by the organs, of which we modify the function. Unfortunately, we are still far from the thought of applying to ourselves this powerful agent for improvement, although we impose it on our domestic animals; our own unions are not often made in view of the inheritance of vigor and health which we shall leave to our descendants. Georges Demeny, in the popular science monthly.

DR. KLEINS REPORT ON THE HISTORY &C., OF DIPHTHERIA.

The report of Dr. Buchanan, Medical Officer of the Local Government Board, for 1889 has just been published. Besides many other special auxiliary reports, it includes one by Dr. Klein on the intercommunicability of diphtheria between the human body and cows and cats, references to which have from time to time appeared in this JOURNAL during the past two years. Dr. Klein had continued his researches into the bacteriology of diphtheria, and publishes in this report an elaborate article on the etiology of the disease, in which he discusses very fully its bacteriology. In particular science is indebted to him for having precisely defined the characteristics of the true pathogenic organism of this disease, which it would appear had previously in many cases been confused with other bacilli frequently, but not constantly, found in diphtherial membranes. He found that cultivations of this pathogenic bacillus were capable of producing in cats the same well-defined symptoms of feline diphtheria as result from direct inoculation of the cat with the material of human diphtheria. He found further that the feline diphtheria thus set up may infect with the same disease other cats kept in the same cage, and that from the disease thus produced by contagion new sub-cultures of the bacillus could be obtained. The only missing link in this reasoning is that it cannot be proved experimentally that feline diphtheria thus induced can be transferred to human beings; it will not, however, be forgotten that cats suffering from a disease of the same character as that observed in experimental cats have been supposed, on good circumstantial evidence, to have been the originators of epidemics of diphtheria among the human inhabitants of the households to which they belong. Some experiments with milch cows yielded results of considerable importance; it was found that on or about the fifth day after inoculation in the shoulder with pure cultivations of the diphtheria bacilli, milk drawn from the udders with aseptic precautions contained bacilli which were proved by cultivation experiments to be undoubtedly of the same species as those with which the animals had been inoculated. On the previous day in, these same cows an eruption of small vesicles had made their appearance on the udders, and these rapidly passed into pustules and crusted ulcers. Dr. Klein looked upon his udder-eruption as being a local manifestation of a constitutional disease induced by the diphtheria inoculation.

WHAT IS KNOWN OF HYPNOTISM.

The able editor of the British Medical Journal furnishes that valuable weekly with a lengthy paper on "Schools and doctrines of Hypnotism," and says in conclusion: To sum up, then, in a few words the actual state of the question, an impartial observer might, in my opinion, conclude that hypnotism is a pathological modification of the nervous system, which always indicates that the subject belongs to a neuropathic class. The complete and typical form of hypnotism described by Charcot is rare. Suggestion plays a considerable part in hypnotic phenomena, but there are somatic phenomena which are independent of it. Hypnotism may frequently be dangerous, and very rarely useful. It may be the cause of crime, or of mental disorder: it can really cure no disease not more easily curable by simpler and less dangerous methods. A considerable number of facts attributed to it which have most impressed the public imagination, such as the actions of medicines at a distance, the so-called telepathic communication or communications made without speech, and the *clairvoyant* phenomena sometimes described, are mere errors of experiment arising from insufficient precautions and a too vivid imagination. Precisely those phenomena which have been most publicly talked about and excited most interest in "psychical" circles so-called, are the least real. The hopes which the therapeutic hypnotist aroused have not been rea

lised, and any expectations of producing by hypnotic methods any desirable moral or mental effect rest upon a totally inadequate basis of fact, and are far from being promising.

DANGERS OF HYPNOTISM.

Hypnotism is not yet much practised in Canada, but it is to some extent, and to a great extent in the "States." We give the following as a "note of warning" (from the N. Y. Med. Jour.) An amateur at a friend's house volunteered to hypnotise another visitor, and after two trials succeeded so well that the subject became extremely excited, lost the power of speech and then passed into the condition of catalepsy; subsequently he had severe convulsions. He had been hypnotised by being made to look at a diamond ring and afterwards the sight of anything glittering threw him into a state of violent excitement. He performed various odd automatic movements, slept only in snatches, awoking in nightmare, and in fact was in a condition to which the French physicians would probably apply the grave term hysteria with maniacal excitement. He was treated with sedatives. After ten days the convulsive attacks were replaced by periods during which he sang persistently, apparently every song he knew, and nothing would stop him After about a fortnight he had an attack of fever, followed by copious perspiration and asthma; a few day later he had another feverish attack, again followed by perspiration, after which he declared himself well. The cause of the fever his physician believed was due to inflammation of the anterior part of the brain. The case ought to be a warning, both to amateur hypnotisers and people who allow themselves to be played upon by "showmen." A demand is arising in France, the United States and other countries that the practice of hypnotism be placed under legal restrictions.

PHYSICAL TRAINING OF INFANTS.

The following excellent advice on *not* teaching young children to walk is by Prof. Henri Marion, in a lecture before The Literary Faculty of Paris:--from the Revue Scientifique, as translated for the Popular Science Monthly, April, 1891: People sometimes ask, at what age can we seat a child in a chair; when put him on his legs; how old must he be before we teach him how to walk? The answers are easy. He must not be made to sit till he has spontaneously sat up in his bed and has been able to hold his seat. This sometimes happens in the sixth or seventh month, sometimes later. The sitting position is not without danger, even when he takes it himself; imposed prematurely upon him, it tires the backbone and may interfere with the growth, so the child should never be taught to stand or to walk. That is his affair, not ours. Place him on a carpet in a healthy room or in the open air, and let him play in freedom, roll, try to go ahead on his hands and feet, or go backward, which he will do more successfully at first, it all gradually strengthens and hardens him. Some day he will manage to get upon his knees, another day to go forward upon th m and then to raise himself up against the chairs, He thus learns to do all he can, as fast as he can, and no more. But, they say, he will be longer in learning to walk if he is left to go on his knees or his hands and feet indefinitely. What difference does it make if, exploring the world in this way, he becomes acquainted with things, learns to estimate distances, strengthens his legs and back, prepares himself, in short, to walk better when he gets to walking? The important thing is, not whether he walks now or then; but that he learn to guide himself, to help himself, and to have confidence in himself. I hold, without exaggeration, that education of the character is going on at the same time with training in locomotion, and that the way one learns to walk is not without moral importance. From different points of view, but for reasons identical at the bottom, hygienists and moralists agree in disapproving of leading-strings. In a moral and physical sense, the pre-eminent educating agent is liberty, natural activity, unfolding itself without restraint under a discreet surveillance that is limited to removing grave changes and preventing real thoughts. The necessity of such surveillance is otherwise evident from the fact that the body of the child, on account of its extreme suppleness, takes every sort of wrinkle, if we may speak thus, with equal facility. Vigilance at every moment is all that can prevent it from concracting every kind of vicious habit; the great point is to reconcile such vigilance with the liberty which its spontaneous developement demands.

AN IMPORTANT PROPOSED CONFERENCE.

We learn that a prominent place will be assigned, in the discussions of the International Congress of Hygiene, to be held in London next August, under the presidency of H. R. H. the Prince of Wales, to the question of how far the diseases of animals are communicable to man, and

vice versa. The Organizing Committee of the Congress have recognised the importance of the question by setting apart a special section for its discussion, and have associated with the section gentlemen of highest authority in medical, veterinary, and agricultural fields. The section proposes to consider the infectious, contagious, parasitic, and other diseases intercommunicable between man and animals; the methods of the propagation of the diseases affecting mankind by means of animals and animal products; the infection of meat, milk, and other comestibles; and the restrictions to be placed upon the sale of infected food and the movement of infected animals. On each of these questions papers will be obtained from the highest British and Continental authorities as the basis of the debates of the section, which promise, therefore, to be of very great interest and value. The President of the section will be Sir Nigel Kingscote, K.C.B., Chairman of the Board of Governors of the Royal Veterinary College; and the Vice-Presidents will be Prof. Brown, C.B., Director of the Veterinary Department, Board of Agriculture, and Dr. Klein, F.R.S., Lecturer of Physiology, St. Bartholomew's Hospital. They will be assisted by a Council containing, amongst other members, Dr. Edward Ballard, F.R.S., of the Medical Department Local Government Board; Dr. Crookshank, Prof. Bacteriology, &c., King's College; Dr. Geo. Fleming, C.B., late Principal Army Veterinary Department; Prof. McCall, F.R.C.V.S.; Prof. McFadyean, M.B, B.Sc., F.R.S.E., of the Royal Veterinary College, Edinburgh; Shirley F. Murphy, M.R.C.S, Medical Officer County of London; Dr. J. Burdon. Sanderson, F.R.S., Prof. of Phys. Oxford University; Sir John Thorold, Bart., Chairman Vet. Com. Royal Agricultural Society; Dr. Turner, Medical Officer for East Hertfordshire: and Sir Jacob Wilson, Governor, Royal Veterinary College. Two of the secretaries of the section are Dr. G. Sims Woodhead, F.R.S.E., Director of the Research Laboratory of the Conjoint Board of the Royal College of Physicians and Royal College of Surgeons, and Mr. Ernest Clarke, Sec. Royal Agricultural Society. To the last named communications relating to the section may be addressed, at 12, Hanover Square, London, W.

SUGGESTIVE FACTS FOR CANADIANS.

Just now the following may be of interest, as another of the many inducements, if more are needed, for Canadians to remain Canadians,—from the Medical Mirror. The last State census of Massachusetts brings up some interesting facts in relation to married women having no children. We find out by looking at Massachusetts' census that one-fifth of the married women of the State are childless. It is said that in no country save France can a similar condition of affairs be found. On the other hand, instead of over twenty per cent., only thirteen per cent. foreign born women of Massachusetts are childless. What is true of this particular State is undoubtedly true in a greater or less degree throughout the country. As a matter of fact, American women, particularly those of the better class, are directing their energies toward the development of their intellectual capacities rather than their fruit bearing capabilities. The time is coming when we must face the fact that the increase of the population by birth is decreasing. The tendency of the times among the better class of the American people is either in the direction of no children or else small families. The boasted culture of the extreme East, particularly of femininity, is largely responsible for this; and the woman who directs her energies toward the study of the classics as a rule loses her interest in family affairs. She becomes truly "classically childless." The old saying, "The fool for luck and t poor man for children," is a true one, and nowhere is it more thoroughly exemplified than in the more cultured circles of the East. Take the city of New York. The native born Americans, pursuing the course suggested in Massachusetts, are rapidly becoming a pronounced minority. New York, as has been said, may well be called "New Cork." Whither are we going? What will the end be? Inviting, as we do, the off-scourings of all creation to come to our "land of the free," ceasing to procreate ourselves, the query may well be presented: Where will America be a few years from now? Serious questions present themselves, and the best thinkers of the country may well put on their thinking caps.

BATHING is slowly becoming a more general practice in "civilized" countries. In Central Asia, Northern Africa and Eastern and Northern Europe—among the Persians, Hindoos, Turks, Egyptians, Russian, Finns and Japanese it has "always," it appears, been an universal practice. But very crude ideas yet prevail regarding the bath. Some bathe "for the fun of the thing," in hot weather, and never bathe again till the hot season comes around once more. The bath for promoting cleanliness and an active vigorous skin is more necessary in cold than in warm weather—all through the nine or ten cooler months than in only the two or three warm ones. Hence in making provision for public baths, arrangements should be made for cold as well as for warm weather bathing. It is better to bathe once a year than never at all, but hot weather baths are but a poor substitute for none, and "hardly worth the candle."

IN PROVIDING for public baths therefore,—and we are much pleased to note that the capital is likely to take action in this behalf, Alderman Henderson pushing on the movement commenced last year—it would be most desirable that provision be made for bathing in all seasons. For this, the first outlay need not be much increased, or only for the purposes of warming, and with a small charge (perhaps of 2c., 5c. or 10c. a bath) the after working expenses would be met probably as well in cold as in warm weather. In this case the rink could not be utilized, of course. But we would suggest the erection of at least three or four plain, neat but inexpensive buildings in as many suitable convenient localities in the city, to be supplied with a constant flow of water. Provisions would be required for warming water, when required, and for both shower and plunge baths, warm, cold, and medium. These would be for cleanliness and health. A great deal of water would not be necessary. The charge made for them should be but 2c., 3c. or 5c. each. Swimming baths are quite another thing. They are a non-essential luxury, require a great deal of water, which requires to be changed often, as probably not many persons care to swim in even a thousand or two cubic yards of water in which many others have washed, and if provided, the charge should be 15c. to 25c.

EVERY TOWN with public water works could provide such baths, as indicated, shower and plunge baths, warm and cold, for cleanliness and health at very little comparative cost. The outlay would yield a hundred fold, directly, in the prevention of sickness, to say nothing of the comforts of a clean public skin. The reduction in the sickness rate,—as shown by less absentees, &c., in the public schools of London and Germany, and also in the Prussian and French armies, where provision has been made for general bathing, has been enormous. Many of the smaller towns in Canada are providing for a public water supply We entreat them on behalf of the suffering citizens everywhere to take public baths into consideration and provide for this essential of health. It would be a very nice thing for Canadians to set a leading example in this regard every where in their towns, to be pointed to as being especially a *clean* people. Clean people are, as a rule, the more intellectual and honest. The washed pupils in the public schools make greater progress in learning. We would here mention that it should not be necessary to obtain Legislative consent to raise money for such purpose. Health boards can raise money surely for health purposes as the law now stands.

PUBLIC LAUNDRIES, under inspection, in which the public underclothing could be repeatedly and cheaply washed, would be a boon too, and a profitable investment in respect to the public health. There are many fields open for political economists but none would prove more fruitful by cultivation than those which concern the public health. The skin cannot be kept clean and healthy, no matter how often it be washed, unless the covering near it be kept constantly clean also. Entrance into almost any public school, anywhere, will at once suggest, through the sense of smell, the great need of greater facilities for laundering, as well as for bathing. The frequent change of underclothing is included in the measures recommended for promoting beauty, especially, of course, of complexion. Indeed such changes are as essential to the beauty, as to the healthfulness of the skin.

THE SPECIAL committee appointed by the Association of Executive Health Officers of Ontario met early this month and made some

good suggestions, or especially emphasized suggestions previously made, particularly in regard to the dangers of privy pits; and the substitution of earth closets, as best were there is no water carriage system. With the "conclusion," "that in all places constructing systems of sewage it is desirable that sewage be delivered at its outfall separately from storm water," we are not in full accord. Possibly this is erroneously reported. We think that it is not by any means yet clear that the separate system is "in all" cases best. It is the most economical of construction; but the storm water is a great flusher and cleaner of the sewers and may not yet be universally discarded. But "that the most desirable method of sewage disposal is by land irrigation wherever practicable," is just what this JOURNAL has always contended, and we are glad the committee have so clearly emphasized it. It is desirable that some one be sent to Europe "to study the most advanced and recent methods of sewage disposal which have been introduced in places there, especially as regards sewage farming." But if the Federal Government will consent to send Mr. Macfarlane, the chief analyst, just the man for such a commission, we do not see why Ontario should incur the expense of sending a man too.

"PROHIBITIONISTS" should consider well the effects of the efforts to suppress the use of whiskey in Ireland some years ago. Not long ago the able editor of the British Medical Journal, Dr. Ernest Hart, made an investigation and lengthy report upon the terrible effects of ether-drinking in Ireland. The Times is now discussing the subject. It seems that in five counties, with a total population of 350,000, there are about 46,000 who actually drink 17,000 gallons of "vite," an impure form of ether, per year. This habit is said to have originated years ago, when illicit stills were suppressed and Father Matthew's crusade made whiskey-drinking disreputable The ravages of the habit are described as comparable only with those of the use of opium among the low classes of Chinese. Insanity is largely on the increase in the districts and the death-rate among the children of the ether maniacs is very high. We have always contended that until mankind can be properly housed and fed and trained into healthy vigorous subjects, able to exercise sufficient self control, the suppression of the use of alcoholic stimulants will but give rise to worse forms of intemperance.

TOBACCO USERS may get "food for reflection" too from the contention that the decrease in the average stature of men as compared with that of women, which investigators have pointed out to be taking place in England, is due to the stunting effects of the tobacco habit on the men. This we think, considering the well known effects of tobacco on the human constitution,—on the circulation especially, the chief nutrient function, through the nervous system, is a reasonable contention. What habit, peculiar to men only, is there which would be more likely to cause such decrease in stature? As we have before stated, we believe that the tobacco habit, in its powerful and insidious effects upon the constitution, is on the whole more injurious, more lowering to the human organization, morally as well as physically, than the alcoholic habit; while many have declared from their own experience that the depressing effects of tobacco have absolutely *created* a *desire* for alcoholic stimulation.

IN THIS connection we may note what the Journal of Heredity says, as follows: One of the first things demanded of a young man who is going into training for a boat race is, stop smoking! And he himself, long before his body has reached its highest point of purity and development, will become conscious of the lowering and disturbing effect of smoking one inch of a mild cigar. No smoker who has trained severely for a race, or a game, or a fight, needs to be told that smoking reduces the tone of the system and diminishes all the forces of the body.

THE SICK who patronize travelling doctors and "firms" of "celebrated physicians" may take warning from the fact that a firm visiting Milwaukee consisted of one "Dr." Jansen, who did not know a word of the Chinese language, but who acted as interpreter to an "eminent Chinese physician, versed in Oriental medical lore," who was nothing more than a "picked up" "laundry man," one Gun Wa. As "Good Health" says, there are many firms of travelling doctors possessed of no greater medical ability than that of the Gun Wa Company, and yet thousands of people patronize these travelling charlatans, while they would not grant the great medical geniuses who, lacking reputation at home, are obliged to travel from place to place in territory where they are unknown, the loan of a five dollar bill, if requested to do so, without asking some satisfactory security.

MORE "Grand old men" are mentioned, apropos of an article in the April issue of this JOURNAL, in which a number such were referred to, in the Graphic, of Chicago, in referring to the recent election of Gen. Palmer to the U. S. Senate: "There are many men of prominence much older than Gen. Palmer. Gen. Neal Dow, aged 88; David Dudley Field, 86; Gen'l Joseph, E. Johnston, 83; ex-Speaker

Winthrop and ex-Secretary McCullough, 82; Hannibal Hamlin, 81; Senator Morrill, Senator Payne and P. T. Barnum (now deceased), 80.... There is a host of celebrites verging on eighty: ex-Chancellor Bismark, Justice Bradley, George Ticknor Curtis, ex-Senators Thurman and Trumbull, General N. P. Banks, Gen. Jubal, A. Earley and Senator Dawes." Nearly all these venerable antiques are still in public life.

THE N. Y. Sun says the great inventor Edison, according to a friend of his, is a vegetarian, eschewing flesh, fowl, and fish. He enjoys fruit of all kinds, grains of every variety, and likewise vegetables, especially those that ripen in the sunshine. He is very careful about his diet, holding that it has a powerful influence upon the mind and its action as well as upon the health and vigor of the body. He has studied the matter under the beams of the solar orb, under the flash of electricity, under the laws of science, and in the light of reason It seems that he is unaware of anything like self-denial in the practice of vegetarianism, and that he finds plenty of delicious, invigorating exhilarating esculents outside the animal kingdom.

ACCORDING to the physiologists (in Laws of Life) meat contains only 35 per cent. of nutrition, while wheat contains over 80 per cent., peas 93 per cent., rice 88 per cent, beans 87 per cent. and oat-meal 74 per cent. A pound of meat affords about a quarter of a pound of nourishment, and costs at least twelve cents. For the same amount of money four pounds of peas or beans could be bought which will furnish two pounds of nourishment."

THE LAST Supplement to the British Medical Journal (Ap. 4, inst.) points out that in examining water for typhoid bacillus the sediment should always be used. There was an outbreak of typhoid fever amongst the boys of a school, following a similiar outbreak in neighboring houses. There was found to be a dangerous proximity of the spring from which the water was derived to the closets in the schoolyard. Examining the water by the ordinary gelatine plate method, the author was unable to find any traces of the Eberth Gaffky bacillus; but on allowing the water to stand and making cultivations from the sediment, there appeared, among others, characteristic colonies, the bacillus of which, in staining and microscopic appearance, could not be distinguished from those of of the typhoid bacillus.

RELATIVE to Colonization, Sir W. Moore, K. C. I. E., read a paper recently before the Epidemilogical Society of London, in which he maintained that, great as was the power of accommodation possessed by individuals, each race was especially fitted for certain climatic conditions, which tended sooner or later to eliminate the unfit. He believed that an infusion of native blood was essential to the permanent existence in one climate of immigrants from another and very diverse one, adducing the example of the Portugese in India and of the mixed Spanish in Central and South America. He would go so far as to say that the so-called "Aryan" population of northern India was, though Aryan in language, largely composed of non-Aryans absorbed by the invaders. Families of pure Aryan descent were to be found only among the Rajputs and a few aristocratic houses. probably not exceeding 10,000 persons in the whole of India.

ON THE Koch remedy, in referring to lengthy reports on it from Germany, the N. Y. Medical Journal of the 4th inst. says, It must certainly be admitted that the showing is hardly in accord with the fond expectations with which the announcement of the treatment was greeted by the great majority of those who assumed to speak for the medical profession a few months ago. The lesson, however, is a wholesome one, and the authors of the reports, countrymen and admirers of Koch's are entitled to great credit for the candor and freedom from prejudice with which they have recorded their experience.

IT IS PROPOSED now to provide great London with water by impounding the water of several streams in a mountainous and very sparsely populated district in rain-blessed Mid-Wales. It is claimed that the water thus obtainable is pure, uncoloured, singularly free from risks of contamination, and not hard. The scheme involves the construction of various necessary dams and imbankments for collection, the building of an aqueduct—partly of masonery and partly consisting of a fourfold line of 6 feet steel pipes—starting at 516 feet above ordinance datum, and having a total length of 162½ miles; and the construction of five service reservoirs on the high ground to the north of London, whence the water would have a sufficient fall to furnish a constant supply to the whole metropolis, except the elevated localities of Hamstead, Highgate and Sydenham, without pumping. Provision is to be made for ultimately securing a daily supply of 300,000,000 gallons per day. The total cost of obtaining a first supply of 210,000,000 gallons per day, as against the present daily cousumption of 168,000,000 gallons is estimated at £15,250,000; the interest on which it is estimated would be less than the present annual outlay.

THE "Florence Nightengale Sick Bed Appliance" is a new and valuable invention to which we desire to draw attention. We observe that it receives very high encomiums from leading members of the profession who have had experience with it in some of the institutions for the sick. We believe it is superior to all other such appliances. A description of it is on an advertising page of this JOURNAL.

A PROSPEROUS QUACK was asked by a junior how it was he had so many customers. The quack took him to his window overlooking a crowded street, and said, "What proportion of the people passing do you think are sensible persons, with well balanced minds?" "Perhaps one in ten," was the rejoinder. "Just so," said the quack, "and I get the nine."

A WET silk handkerchief, tied without folding over the face, is said to be a complete security againt suffocation by smoke. It permits free breathing and at the same time excludes the smoke from the lungs.

DRESSES it is stated may be rendered incombustible by dipping them in a solution of tungstate of soda, one pound in two gallons of water; and that the most delicate color will not be affected by it.

NOTES ON CURRENT LITERATURE.

THE ILLUSTRATED LONDON NEWS (Am. Edition, from the original London plates, World Building, New York) is probably the cheapest publication in the world. It far way exceeds in every respect any weekly published on this continent; only $4 a year. Only an enormous circulation would warrant its publication at such a price. Every number is good; all in each is of the best.

READERS who have not seen the Dominion Illustrated since it has been enlarged and improved should get a sample copy. Both from the literary and artistic point of view the Illustrated is a credit to Canadian journalism.

ST. NICHOLAS for April opens with a delightful illustrated sketch by Mrs. Foote, "The Gates on Grandfather's Farm,"—reminiscences of a New England farm suggested by the associations with its old gateways. It is full of feeling, and while not beyond the young readers will be fully appreciated only by their elders. Mr. Frank S. Woodruff describes some "Busy Corners of Orient, and shows us the primitive forms of industry in Syria. The article is illustrated by Mr. George Wharton Edwards.

MIRACLES AND MEDICINE is the fruitful subject which Dr. Andrew D. White will take up next in his Warfare of Science papers in The Popular Science Monthly. The May number will contain the first part of this chapter, telling how tales of miraculous cures arose and grew in the middle ages. Among the shorter articles in the number will be a particularly readable one on the evolution of patent medicine, by Lee J. Vance, in which human weakness for mysterious cures is traced from the days of saintly relics down to the much-advertisising "medicine men" of our own time.

THE GRAPHIC, Chicago, is becoming one of the best of the weeklies. It is quite up with any of the New York publications of the kind, at only $3 a year. It gives some very handsome finely executed illustrations, many of them now superior in every way to any in the eastern weeklies, and it appears to be improving every month.

THE COSMOPOLITAN for April begins with a charming, profusely illustrated piece, the "Eldest of the Arts"—dancing. We find a good article, the "Master of Genra,"—the late eminent Meissonier: others on the "Nicaragua Canal"; the "Japanese Theatre" (all three well and profusely illustrated); "Farm Life"; and a good story, "The Mystery of a Studio"; with many other good things:—in a magazine nearly as large as Harpers, at only $2.40 a year (New York 5th Ave. & Bd Way.)

IN THE MAY COSMOPOLITAN a story of unusual power and strange plot will begin and run through three numbers: The story of an artist who three time in his life undertakes to paint a portrait of Jesus. From a sketch of the plot, it appears to be not at all an irreverent story, but a staange one.

THE North American Review for May will be of special interest to Canadians. In addition to Sir Charles Tupper's reply to Mr. Wiman, it will contain an article by the Marquis of Lorne, entitled "Canada and the United States."

$750 in GOLD.

It is not yet too late to enter the Dominion Illustrated prize competition in which at the end of the current six months prizes to the value of over $300 will be distributed. The first prize is $750 in gold and the list includes a Heintzman piano, Bell, Karn, Cornwall organs, gold watches and other valuable articles—100 in all. The smallest is valued at $5. The competion consists in finding in current numbers of the journal the answers to thirty-six questions, six of which are published each month. For sample copy and full particulars send 12 cents in stamps to the publishers, the Sabiston Litho. & Pub. Co. Montreal.