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CIRCUMSPECTIVE REVIEW OF HYGIENE.

*(Continued.)*

Rensuard in a chapter on the state of Hygiene in the middle ages thus writes: "The governments being entirely occupied with the care of maintaining and extending their power, never or very rarely inquired into what concerned public Health." The same remarks would apply with equal force in this year of grace 1875 to the Government of the Dominion of Canada. For two successive sessions Dr. Brouse has moved for the appointment of a sanitary Bureau, the immediate object being to collect statistics before attempting sanitary legislation. On both occasions he has been told that there are difficulties in the way at present, and requested to withdraw his motion. Not equally faint hearted do we find the D'Israeli government at home, but with a courage that does them honor they are preparing to grapple in earnest with the great question of public Health. It is noticed in "The Hour" that several amendments have been proposed to Mr. Cross's Bill, he has, however, since engrafted many of the suggestions, and the alterations now made, will go far to correct the imperfections originally visible in it.

As the Bill first stood, the medical officer of the district was made the hinge on which the whole machinery was to turn. If he found that any particular houses or streets were particularly unhealthy, and that their unhealthiness was due to their want of ventilation, or other defective arrangements he was authorized in the metropolis to report the fact to the Vestry.

The Vestry to be at liberty to ignore the report or to pass it on to the Commissioners of Sewers or Board of Works. This would have rendered the Bill nugatory as no one would have cared to initiate proceedings under it. By the amended Bill the medical officers are to be emancipated from the control of vestries, to report to the Commissioner of Sewers in the city and to the Metropolitan Board of Works in the rest of the Metropolis. Nor is the Board of Works to be dependent on the reports of the medical officers of Health. They are to be at liberty to appoint medical officers of their own with adequate emoluments, and of a sufficient status in the profession to carry out the provisions of the Act. It is evident that the medical officer of the Vestry will have thus a great incentive to exert himself if unhealthy buildings unnoticed by himself, are discovered by an independent officer.

Could Dr. Hingston, the present Mayor of Montreal, be clothed with such authority, that city would quickly be relieved of the opprobrium of being the perpetual habitat of small-pox. Perfect sewerage would be carried out, and with that, comparative exemption from typhoid fever, diphtheria, scarlet fever and other zymotic diseases. It is true that cities with defective sewerage are not always visited by typhoid. On this subject Liebermeister thus writes: "There are villages and there are certain quarters in cities where both within and without the dwellings decomposition of organic and excrementitious substances is constantly going on; but only in some of these situations does typhoid fever occur; while in others it has never been observed within the memory of man. But in such cases the introduction of a single case of typhoid will often give rise to a severe epidemic. The question then arises, what are the substances derived from diseased individuals which act as transporters of the poison? Evidently these sub-

stances are to be looked for in the excrements. But it may be questioned whether such excrements contain the poison while still in their fresh condition. The circumstance that physicians and nurses and patients in the same wards are seldom attacked even if they touch the fresh excrement, seems to indicate that the poison in order to become more active, has to go through a certain stage of development outside of the body. This development can take place if the dejections are left to themselves, as in dirty linen, but it seems to go on more abundantly if the dejections are collected in privies, sewers or ground already saturated with organic substances. In this way it can be explained how a typhoid patient, who comes to a house or region previously free from the disease, can establish there a focus of infection from which many other persons become diseased."

Three cases of diptheria recorded by Dr. F. W. Campbell in the Canada Medical Record for February would seem to endorse this theory. The father, anxious to have his house thoroughly healthy, employed a plumber to connect the soil pipe in the closet with a pipe inserted into the chimney, so as to convey away any noxious gas. While this was being done, the soil pipe was open, and free entrance afforded to the miasm, for this soil pipe communicated with the drain, into which the excrement and expectorated matter of three other cases of diptheria, which had just previously occurred in the same terrace, was emptied.

It will be thus seen that on the proper construction and careful attention to the sewers, public health depends; public health means public wealth. Sewers receiving their fluid contributions from every house, very great care should be exercised by a Government or Municipal Board that no interruption to their removal to a safe and distant place of deposit, nor leakage into the soil through which they pass occurs.

SIMCOE

C. W. C.

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One of the incessant wants of man,—fresh air.

## BUILDING GROUND IN ITS RELATIONS TO HEALTH.

BY EZRA M. HUNT, M.D., NEW JERSEY.

[Read before the American Public Health Association, Philadelphia, 1874.]

The condition of the ground has very much to do with all questions of health. The character of the soil, the degree to which it can dispose of all that comes in contact with it—whether in the form of gases, of animal or vegetable decay, of pure and impure liquids,—all have intrinsic and vital bearings upon human health. The making of the earth, a place fit for the healthful habitation of man, is a part of the problem which creative skill has considered. We need to become aware of the constant activities and adjustments taking place to this end. These are not accidental or incidental, but involved, as if the chief things intended to be conserved. Where natural transformations are in nowise interfered with by art, it is wonderful to see how processes involving productions inimical to health are so conducted as to be entirely consistent with vigorous existence. While decomposition is the rule, evil therefrom under natural conditions is the exception. While, for instance, enough carbonic acid is produced each day to kill all the inhabitants of the earth, yet it is so well managed as not to interfere with the health of man or animal.

But the very moment a spot comes to be builded upon, it is by necessity placed in abnormal conditions. The building clears the ground of that herbage which had no unimportant sanitary office in appropriating the products of decay. It covers it from sunlight and sun-heat, and necessarily makes its condition as to moisture quite different. It interferes with the range of winds, and modifies the immediate thermometric and hygrometric conditions of the atmosphere. It throws the rainfall into streams upon the ground around its sides, instead of allowing it to diffuse itself into drops. In winter it causes accumulations of snow and ice. It alters the course of water, making, it may be, the cellar, the well, the cistern, the cesspool, the privy vault and the sewer parts of its underground drainage. In a word it alters the whole relation of the ground occupied and of its immediate surroundings. Besides all this, the necessities of habitation create filth, garbage and dust, and refuse of various kinds, which are conveniently added to the soil just where it cannot use them.

Pettenkofer says of the city of Munich, that about ninety per cent. of its excretions go into the ground. It is thus easy

to see the varied conditions interposed by human dwelling-places, and how these conditions are magnified by the multiplication of buildings and the crowding of inmates. The great sanitation of nature is suspended, and factors of insalubrity introduced to a degree that arrests our most careful attention. If cities are ulcers on the body politic, they are not less anti-health combinations against the body physical. It is no small or unimportant thing to have removed the grass that sucks up the miasm, shaded the ground from sunlight, changed the laws of its moisture, altered its water-courses, and interfered directly with the forces which elaborated health. It is as easy to make destructive sanitary changes as to make destructive physical or chemical changes. The one or the other may depend upon only slight variations of atomic proportions. In chemistry, the equivalents of calomel and corrosive sublimate differ but little; so a single interrupted change may determine whether we shall have prophylactic or destructive agencies. \* \* \*

When we remember how much moisture and evaporation depend upon relative temperature, and how much all these bear on health, we get some idea of the hygienic condition of the ground. The house may stand over it, the pavement may cover it, and stone and concrete seem to make it a basis for travel; but from it is evolving an influence on temperature, which penetrates and affects all the animals that dwell upon it. Since the warmth of the earth, radiating and being extracted at night into the colder atmosphere, causes the dew, this is but one of the registers of the relation between the ground and the air above. The heat and moisture of the ground, and the temperature of atmosphere above it, are unavoidably relative; and it is just as sensible to talk of changing ground, as of changing air for health. \* \* \*

Next, the ground is largely made up of air. We are familiar with the fact that into a pail of soil we may pour part of a pail of water and yet not have an overflow. But we forget that all this space between particles of soil when not displaced by water in the ground is occupied by underground atmosphere. In its circulation it is meant to oxidize and hydrocarbonate animal and vegetable decay so as to make it innocuous, and great volumes of carbonic acid are handed over to vegetable life. *Questions of ventilation are not all above-ground.* It is in constant interchange with the surface air or else confined and fouled in its impeded underground circulation. Bad air stagnated in the ground is hurtful in all that constitutes insalubrity by interfering with normal and healthful affinities. Even the rain as it passes through the atmosphere becomes aerated and

carries into the soil more oxygen than air itself to oxidize organic matter, if only the spaces are not already filled with stagnant water or foul air.

It is believed that one of the causes of the prevalence of such fevers as typhus and typhoid in the winter is that the great inner heat of houses causes the currents of air from the surrounding ground to set towards them, under the general law of currents as affected by heat. So the basement and the house suck up the ground air contaminated by its wrong conditions, and the local heat causes it to penetrate more than in the summer. Gas and the air of cesspools have thus been perceptible in houses not supplied with them, and where the situation was not near. Often in cities foul gases instead of being consumed are discharged by pipes into sewers and underground connections. This may relieve the atmosphere from the nauseous outgush, but too often sends them to mingle with the underground air to be discharged in diluted but nevertheless harmful quantities into the houses. \* \* \* \*

But heat and air and water, as they circulate beneath us, and form parts of the ground, are not only important in themselves, but they enable the organic and inorganic substances of the ground to undergo their disintegrations and reparations.

The water is the menstruum circulating through the soil by which vital or destructive changes are carried on.

So air and heat are lending their aid, and the earth itself using them as instruments, has its own constituent particles in process of change.

All these are wonderful when studied in their conservative sanitary tendencies, and wonderful also in the evil which may result from interrupted processes.

Grandly and gloriously does nature provide for all that relates to this underground world as to its organic and inorganic material, its air, its heat, its water its animal life, so far as health is concerned, if only its surface and the world above are left to the uninterrupted play of natural provisions. It gives off its superfluous carbonic acid to plants, or stores away its heat for fuel. Field and forest, air and sky, are in happy correspondence. The culture of the earth is itself in the direction of natural appropriation, and so when rightly conducted aids the healthful activities of nature. Ground, then, is not a mere passive stone-like thing. We need to know that in a hygienic point of view it is only by the working of manifold chemistries and philosophies carried on and out, by definite plans, that it makes itself habitable and healthful. It is a foundation made up of fire and air and

earth and water and inner life, the salubrious condition of which is dependent on its being left to the uninterrupted play of those forces by which heat and air enter it with unimpeded facility, by which water has easy access and uninterrupted outflow.

And now in bold contrast we must recur to the fact that a habitation or city is an artificial construction which in its chiefest characteristics interferes with all these natural conditions of ground. It is the interposing of a great separation between the forces above and beneath. It cannot suspend relations, but it can and does fearfully complicate them. It interposes hazardous hindrances or limitations to changes which are hygienically necessary. The ground, when it evolves unhealthy decompositions, also evolves its enormous vegetation to dispose of them. The habitation or city does not prevent the decomposition, but does away with the natural process of disposing of it.

The ground, when by its trees or herbage it shuts out sun-heat, has its millions of leaves to absorb noxious material, and even uses its woods and its herbage to regulate temperature. The city has no full compensation. The ground has also its natural well-distributed rain-fall and water-courses. The city quite deranges all these. We need by careful thought over that which goes on in the natural ground, and its indispensable relations to health, to recognize what an unwholesome fact a city is. But besides complicating interruptions it adds enormously to the sources of contamination. It creates occasion for the manifolding of natural conditions and processes, and then suspends them. Weigh with large scales, in full and fair estimate, what is done and is needed to be done in the unbuilt earth by the forces of nature, and how far a house, and towns, and cities interpose hindrances. Weigh with larger scales the immense factors of sanitary evil in all the excretions incident to living, so much of which falls to the ground.

The more we investigate the more we come to know the enormity of the contrasts and interferences which the building of houses introduces. Wherever we thus mass men, art has interposed unsanitary conditions which art must rectify. Having informed ourselves of the nature of the ground, and what in its natural state it does to elaborate health, we must see how far we can abate the evil of the circumstances we have necessarily introduced. How far can we restore natural conditions by artificial appliances?

As we furnish new sources of evil in new vegetable decompositions, animal excretions, garbage, sewage, dirt, foul gases,

and filth in manifold forms, how shall we reduce all these to their minimum and best provide for their removal?

With these cardinal facts as to the ground in its natural state, and with an appreciation of the complicating circumstances introduced, we go first of all to the sanitary engineer and ask what is the state of the ground under our building as to its air, its moisture, its heat, its proportions of decayed or decayable matter? If too much water, how best shall we draw it off, and so give access to air to correct dampness and foulness? The basements and the sub-cellars must be closely questioned. Which is the better, a house without cellar or basement, located on a water-soaked soil, or one whose cellar is nearly full of water, but with room for a stratum of ventilated air between?

Is it not best to secure the water supply for other than drinking purposes from local wells in order to aid in the drying of the soil? What is the best system of drainage? How far can we thus aid or restore and supplement natural conditions, and by giving air and heat free entrance enable the ground to dispose of its matter in a healthful way? Where dampness exists how much can be done by cemented floors and sides below grounds? How much good or ill by artificial heat? How shall sewage be conducted through ground so as not to contaminate it, and water so as not to add to dampness? Shall the streets or yards be protected by pavement or covered with trees, grass, and foliage as far as possible? What evils arise from city dust, and how far is street sprinkling advisable? Shall intra-mural interments be allowed at all?

How shall width and direction of streets, and heights of buildings, and proximity of rear buildings, be best regulated to secure needed sunshine? How shall structures be painted so as to favor a healthy temperature? How shall streets be paved so as least to interfere with right changes in the ground? In repairing pavements, should any absorbent or disinfectant be used? How shall the water from buildings and the general rain-fall be best disposed of? How shall garbage and all animal excreta be kept out of the ground, since foul ground air will foul the atmosphere? How shall miasm—mother of fevers springing from the ground, and at home now in cities—be detected and prevented?—for it, too, is a subtle result of unnatural combination. What are the relations of drainage, sewerage, and all under tubing? May not all cities study the laws of “pipe-laying” above ground less, and below ground more, with advantage? These, and such as these, are among the manifold vital questions which

sanitary science has to ask in reference to the ground. The great problem in every habitation, and especially in every city, is to make up for the evils which dwelling in ceiled houses entails, and by compensatory methods to place the soil in as good condition for health as it would be if not thus occupied.

We are constantly finding out, more and more, how much sickness depends upon invisible ground conditions which the sanitary engineer must remedy, or which the city fathers above ground must prevent, if they desire to keep themselves or their children out of it. Whole groups of zymotic diseases are traceable to ground conditions. Rheumatism and all pulmonary affections are vastly dependent upon ground moisture. Foul air, foul water, and foul decompositions come from the ground, and must be attended to in the ground, and also prevented from getting there. There is a climatology of the ground as well as of the atmosphere, and air, rain and temperature are its great regulators.

Although a city is a complex problem in a sanitary way, it is solvable. Science is not as far behind as is the municipality in its application. With the ground, especially, we know what to do, if only the command was given.

Many an experiment is now full-fledged experience; and we can say we know. We must look down as well as up and around. If these foundations are polluted, in vain we work on the surface and in upper air. A proper ground base is what we want for human habitations more than any sanitary want of the age. If to-day our association, instead of a walk amid the beautiful streets of the cleanest of American cities, could walk out for sanitary service between the sub-soil and the surface soil, wonderful revelations would be opened up to our view. There would be found deposits of filth where least suspected, defective sewers, soil overladen with decompositions, stagnant water and stagnant air, connections between cess-pools and sink wells and houses where now unknown; stenches more varied than Coleridge found in the city of Cologne, and unsanitary conditions enough to alarm and awaken the inhabitants that people the surface.

Could we at one lift take up four feet deep of city soil, with its undue moisture, its overladen decomposition, its unfriendly germinations, and all its altered conditions due to its city covering, and compare it with an equal surface upon some elevated plane in the open country, we would at once detect causes quite sufficient to account for manifold differences in sickness and mortality. Independent of the interruption of

natural purifying forces which a city introduces, could we get together the amount of filth which, in one way or another—solid, liquid, or aeriform,—finds its way into city ground, we would be shocked at the enormous tonnage. We would not wonder that chemists and sanitarians have come to speak of some soils as zymotic, and others as “typhoid, ripe.” \* \* \* We are aware that soil itself, when it has a chance to act on the dry earth system, will, where not subjected to constant and excessive contamination, purify itself to some degree; but yet, from wrong conditions about the ground of houses, about the drinking water as affected thereby, we see many evil results. To preserve porosity to ground beneath and near dwellings, is among the most important of sanitary efforts. This merely means to give air free access to soil by preventing stagnant water. The indispensable disinfectant below ground as well as above, is air, the circulation of which in the soil depends upon temperature, and this on light and heat as applied to the surface. The carbon is provided for vegetable life and other purposes, but when we come to deprive the soil of plants and substitute animals, we cause it to be unappropriated by the one, or harmfully appropriated by the other. Where, as in some parts, made soils are composed of an over accumulation of decaying matters, or of foul material removed from streets, the building of houses over it may conceal, but cannot destroy the contamination. More or less of the foul air must find its way out of the soil and endanger the health of those living upon it. Some claim that concrete and cement and stone shut up the soil so as to prevent or moderate the evil, but experiments show that air and moisture still continue their interchange.

There is indeed need that each dwelling and building be recognized as of itself instituting some unsanitary relationship in the soil about, and as such it is subject to treatment.

As all our smaller cities and towns depend on local wells for water supply, foul ground involves foul drinking water, and so the necessities of a clean soil are still further magnified.

We have sought thus to make prominent a consideration of ground as related to dwellings, and to attract attention to the interruptions of natural laws conservative of health which they interpose, and to the additional contamination with which they afflict the soil. Having found out how important for health it is that these ground changes should go on, and that soil and air and heat and water should have their proper relations, we are better prepared to seek how to reduce this interference to its minimum or to compensate for it by other methods.

The engineer, the chemist, the microscopist, the physician, the architect, the sanitarian, have already been able to establish facts and record the needs, and sanitary legislation has much to do in reducing the results to practice.

Having interfered with some of the natural ability of soil to dispose of decomposition, we must not overspread it as if we were top-dressing a meadow or enriching a wheat-field. With intelligent recognition of the facilities of self-correction and health equilibrium which we have embarrassed by our buildings and pavements, we must by art compensate therefor, and as far as possible prevent all abnormal conditions. Every advance in sanitary science is showing how much disease is the penalty of transgression of nature's laws, and how much of the penalty accrues from wrong telluric conditions. The voice of spilled lives cries from the ground. We want more of a dry earth system beneath and around our dwellings, more of pure circulating air in the underground flow, more of an uncontaminated surface soil. The air we breathe, the ailments we take, the clothes we wear, the ground we live on, these are the sanitary corner-stone of upbuilding life. Not the least is a ground whose earth, and air, and heat, and moisture, and cleanliness, fit it for the tread of the great masses of population.

Perfect under-drainage under the definite skill of engineers, is the first great need of most cities. Regulation of cellars and of all other holes below the surface, is the next great study. Then the great question of what to do with all refuse so as to keep it out of city soil, is the large and momentous subject which must ever present itself to our attention. Surely in the unnatural state in which building itself has placed it, it has enough to do without adding one iota of this burden.

Enough if we feel the momentous interests involved in ground purity. Enough if we can arouse each other to a closer study of these fundamental and vital interests, and at the same time convince the citizen and move municipal authorities to more careful thought and more intelligent action. We must get the homes of the people on better foundation than damp water-soaked, air-polluted filth-burthened ground. While at work upon the surface, abating all influences inimical to health, we must not let the covered earth, because concealed by dwellings, escape our searching ken. Thus starting with a healthy and health-imparting ground, we are on a right basis, and are prepared to upbuild as on good foundations that grand system of sanitary science whose object is the prolongation of life, the preservation of health, and the conservation of human happiness.

## TYPHOID FEVER—ITS CONTAGIOUSNESS.

[Reported to the Washtenaw County Medical Society—From the Peninsula Jour. of Medicine.]

Dr. Frothingham reported a case of typhoid fever, which he believed had resulted from contagion. The patient a lad of 16, had been exposed by sitting much with a young man who had been sick with this fever. Shortly after the young man recovered, this lad was taken down with the fever, which ran a course of twenty-two days before convalescence commenced. After the patient had so far recovered his strength as to be about the house and sit with the others at the table, a relapse occurred. This second attack was ushered in with a chill, and followed with the same train of symptoms as the first attack. The diarrhoea was somewhat more profuse, and the eruption more abundant, but came out as a single crop, instead of appearing in successive crops as in the first attack. The body temperature was 105° every afternoon, and varied from 103 to 103½ in the morning. He died on the eleventh day of the second attack, of exhaustion. He, Dr. F., mentioned this case for the purpose of bringing the question of contagion before the Society, and he would be happy to learn the experience of the different members upon the subject. There were many who doubted the contagious nature of typhoid fever, and he thought it a question that ought to be well discussed, and definitely settled, for if it was a contagious disease, it should govern our choice of nurses for such patients, and those most susceptible to the influence of the poison should be kept away from those affected with this disease.

Dr. Palmer said, the fact of one case of fever occurring in a house some few weeks after another, does not prove the contagiousness of the disease, or that the one was taken from the other. Both were exposed to the same influences of privies, cellars, water, or whatever might have caused the first case. Still he would not deny that a poison was produced in typhoid fever, which might be communicated; he only said that one, or several such cases did not prove it. He believed that typhoid fever, whether communicated or not, was constantly originating *de novo*; especially from filth, and perhaps from other causes. That it was not particularly contagious seems to be proved from many facts. One he would mention—the case of the Maplewood young ladies school in Pittsfield, Mass. He, with others, had examined carefully into the history of that local epidemic, occurring in 1864. Out of 77 young ladies attending the boarding school, 51 were attacked with a severe

form of typhoid fever—so severe, that 13 died. A few, (two or three only) passed through the disease in the institution, but nearly all, during the premonitory stage, were taken to their homes in different parts of the Eastern, Middle and Western States; and passed through the disease in nearly fifty different families, and of all the hundreds of persons that must have been exposed to them, only one had typhoid fever. A young sister of one of the ladies had a mild attack, some two or three weeks after the first; but this was regarded as a coincidence, by many, rather than as a consequence of the exposure. This local epidemic of fever, one of the most remarkable recorded in the history of typhoid, was clearly traced to the foul state of the privies of the establishment. A poison capable of producing typhoid fever, is no doubt produced in foul privies. He believed the disease depended upon a peculiar poison, generated in filth, and was inclined to the opinion that the poison was multiplied in the bodies of the sick, and might be, especially by the intestinal discharges, conveyed to others. But he did not believe that all, or a majority of typhoid fever were communicated from one person to another, by feces or otherwise. There were differences of opinion in the profession on the subject—Dr. Budd, in England, leading the contagionists; but it was not an easy question to positively decide. He attended the young man from whom Dr. Frothingham's patient was supposed to have taken the disease. The case was a peculiar one. It commenced in a distinctly intermitting, or at least remitting form, a chill, high fever, and sweat, occurring much more severely every second day—while on the alternate day the patient was up and about, coming to his office the first time he saw him, a week after the attack. He had been under the care of a homœopath in the meantime. A laxative, and quinine interrupted the periodicity, but typhoid symptoms remained, and were fully developed. In the latter stage, symptoms of pyæmia were markedly present, with points of infarctions in the lungs, and small cutaneous and subcutaneous abscesses later; but with a final good recovery. Prof. Dunster had seen the patient several times, when he (Dr. P.) was not well, and also with him, and, he believed, agreed with him as to the character of the case. The symptoms of peculiar blood poisoning was very marked—repeated chills, high temperature (105° F.), profuse sweats and diarrhœa, and the evidences of the local condition in the lungs were pain, bloody sputa, dark and grumous, with dulness at points, and a mingling of crepitation with bronchial respiration.

In reply to Dr. Palmer, Dr. F. stated that he did not present

this case as one unquestionably resulting from contagion, but he thought it to be so from the following facts: The man who had, as he thought, communicated the disease, entered the family as a roomer, with the symptoms of this disease at the time he came, and was soon taken down with it. Now, if it had resulted from causes existing about the premises, it would have been likely to affect the lad first instead of last. But the first case could not have been produced by any cause existing about the premises, for on the very day he engaged his room, he complained that he felt ill, and steadily grew worse until his disease became undoubted typhoid fever. But the question of contagion did not rest on any such doubtful cases as this. He had once had a patient, sick with the disease, come into a family from thirty miles distance. The family consisted of the father and mother, two children, one aged ten the other twelve, and two boarders, both young persons who had never had the disease and who had been living in this family for several months. There was no typhoid fever prevailing within seven miles of this family. Twenty-nine days from the arrival of this fever patient, both of the children were taken sick, and had the disease in a well marked form. These children had been allowed by the mother to sit in the room with the patient much of the time during the day, though cautioned not to do so by Dr. F.; the father was engaged in out-door work, and was not in the room with the first patient except occasionally and for a few moments at a time, but when the children were taken sick, gave up his out-door work and took his turn as nurse. In thirty-one days from the time he began to nurse them, he was taken with the disease also. The mother, who who had formerly had the disease, escaped the attack, and so did the two boarders who left the second day after the arrival of the first fever patient. No other cases of typhoid fever occurred for months before or after in that neighborhood; such cases have often been observed. Dr Chapin, of Grass Lake, in this State, had reported an instance where three patients had come down on the same day, twenty-three days after the introduction of the disease by a patient, brought into the family, sick with it. Because every one does not take the disease in this way, is no argument against contagion; the same kind of reasoning would forbid us to regard small-pox or measles as contagious diseases.

Dr. Webb had no doubt of the contagion of typhoid fever, and referred to cases which he was confident were so contracted.

Dr. Nims thought there was reason to believe that there was a specific poison developed in some cases of typhoid fever, contagious, but to a less extent than in scarlatina or small-pox.

Dr. Breakey—without expressing an opinion on the question of contagion—mentioned the fact of some cases that came within his knowledge about twelve years ago, that he had often thought worthy of being put on record, but he had never obtained the details of their history and dates with sufficient exactness to justify publication, and could only give the general facts from memory, viz: A young man, member of a large family, all grown, had typhoid fever in Illinois, from whence he was brought by his mother, before he had recovered, to their home near Brighton in this State. Within a period of about three months, seven members of the family—though representing three or four different families living about the neighborhood—were one after another taken down with the disease, which was of a very severe type, the diarrhoea in nearly all of them being a prominent feature. Three or four of the cases proved fatal. The one Dr. B. attended lived several miles away, though he had been home during the sickness of others. In the latter stage of his sickness a large number of the sub-cutaneous abscesses referred to by Dr. Palmer appeared over a large surface of the body.

It was possible that the cases might all have been accounted for from direct poisoning without contagion, but at the time they were thought to be the result of contagion, and he presented them without attempt at analysis.

Dr. Dunster referred to an outbreak of typhoid fever that had occurred regularly every year in a hospital under his charge in N. Y. city—the fever appearing each year in August, when the water supply was lowest, and owing to a defective arrangement in the pipe in the privy (used only at night) of one of the dormitories for boys, the water drawn during the night and early in the morning for drink for the inmates of this dormitory contained fecal and urinal excretions in solution. The fever did not extend beyond this dormitory. The discovery and removal of this cause was followed by a disappearance of the fever, which had not returned.

As a rule, he thought the poison of typhoid fever was contracted only by contact with the excretions of patients, and was not properly an atmospheric poison, though under some conditions he had no doubt it was contagious, but in a much less marked degree than the contagious exanthemata.

## DUTIES AND RELATIONS OF DISTRICT MEDICAL SOCIETIES.

[Extracts from a letter to the Middlesex East District Medical Society, November 4, 1874, by Dr. E. CUTTER, published in the *Boston Medical and Surgical Journal*. Among other "Medical Society Labor Fields" mentioned by the writer are "that of reports of *practical experience*," the "*supply of educated nurses*," and the "*suppression of quackery*."—ED.]

The last field that I shall allude to, is that of labor in *public hygiene and medicine*. I hope the time will come when it will be a frequent occurrence to have questions brought by municipalities to medical societies, as I understand was done in Albany lately—the city referring the question of the purity of a water supply from a certain source to the Albany Medical Society, and abiding by its decision. This is one of the aptest things of the day. It was honorable all round. It was satisfactory. I have not the least doubt that medical societies could decide questions of sewerage, drainage, clean streets, clean household surroundings, slaughter-houses, and rendering establishments, if applied to by the proper authorities; and that cities and towns would be great gainers in health and longevity, if they would advise with, and act upon the suggestion of, the local medical societies. I think, also, that if architects would consult the same bodies in relation to the location of dwellings, public buildings, and manufacturing establishments, in relation to ventilation, heating apparatus, and arrangement of apartments in buildings, there would be a great improvement in the housing of men and animals, and a staying of death from impure air. Further, I believe that architectural perfection will not come until this mutual consultation is had.

I think, also, that medical societies might occasionally instruct the public as to articles of diet. For instance, suppose they examine the subject of the premature decay of teeth, in children, and find as I have done, that one cause of it is the deficiency of mineral matter in flour (wheat). I had the "peerless flour" analyzed, and it was found that it contained only 0.55 per cent. of ash, when whole wheat grain yields 1.65 to 3.1 per cent.; that flour has only one third to one sixth the proper amount of mineral matter to make teeth with; that a dentist finding his first child's dentition late, irregular, and prematurely decaying, placed his wife during her second pregnancy upon the use of whole grain flour, and when proper, placed the child upon the same diet; that this change of diet was followed by a regular normal dentition with undecayed teeth; suppose, I say, that this dentition should be confirmed

by the observations of the society, till they were satisfied of its truth, and then the public should be warned of the exclusive use of flour by an official announcement of the society; would not a great blessing be conferred upon the rising generation, some of whom are toothless, and worse than toothless prematurely, simply from too much flour?

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### BUILDING LOCALITIES.

In respect to the selection of a site for a family residence, especially in cities, it should either be on the sandy soil or on a natural hill, never over a filling. As this must be done, there should be a system of drain-pipes to carry the water abundantly and rapidly away. Many a family mansion has been built with the accumulations of the saving of half a life-time, to make the graves of half the household in a few months, from the neglect of the precautions for thorough draining and a proper water supply for drinking and cooking.

In a ward in Brooklyn, with a population of about ten thousand, with natural drainage elevation, and a sandy soil besides, only one and a half persons in the thousand died of consumption: in the adjoining ward, more than three times as many for each thousand: more than three times as many died of consumption who were living for the most part on flat land, on soil saturated with dampness.

In a city ward, elevated and well drained, two and a half persons out of each thousand died of zymotic diseases—that is, of maladies arising from bad air and bad water, from uncleanness generally. In two other wards built mainly on flat land some of it filled in, four times as many died of zymotic diseases—that is, ten out of each thousand. These are facts which should be kept before the mind of all who select new houses, or localities for new houses, in which they expect to reside with their families as long as they can. The neglect of these things has given rise to the observation very generally made: “He built a house only to move into it and die.”—*Hall's Journal of Health*.

SCHOOL HYGIENE.—The physicians of Eastern Middlesex, Mass., have petitioned the Board of Health to enforce “such rules as will prevent the attendance in public schools of any child residing in a family where there is, or has been, a case of measles, scarlet fever, or whooping-cough, until the physi-

cian in attendance on such case of disease shall have furnished a certificate that in his opinion the period of danger from infection is passed, and that he knows that the infected premises have been thoroughly disinfected."—*Ex.*

## MANAGEMENT OF THE DROWNED, AND OTHER CASES OF SUSPENDED BREATHING.

[The following rules, a modification of those published by the Life Saving Society of New York, have been adopted and printed by the State Board of Health of Michigan, U.S., for distribution, as a life saving measure. Ed.]

TWO THINGS TO BE DONE: 1. RESTORE BREATHING;  
2. RESTORE ANIMAL HEAT.

RULE 1. *Remove all obstructions to breathing.* INSTANTLY loosen or cut apart all neck and waistbands; turn the patient on his face, with the head down hill; stand astride the hips with your face toward his head, and, locking your fingers together under his belly, raise the body as high as you can

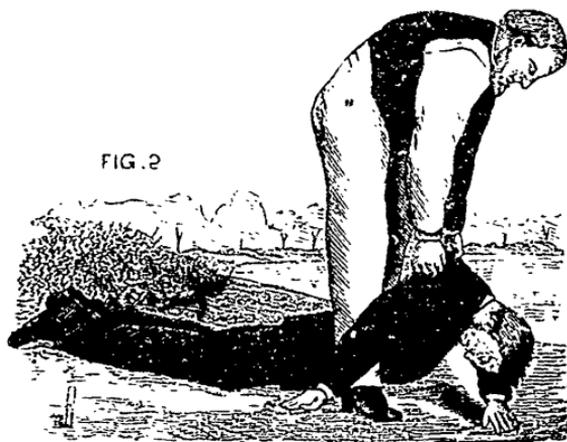


without lifting the forehead off the ground (Fig. 1); and give the body a smart jerk to remove mucus from the throat and water from the windpipe; hold the body suspended long enough to count ONE, TWO, THREE, FOUR, FIVE,

giving the jerk more gently two or three times.

RULE 2. Place the patient on the ground, face downward, and maintaining all the while your position astride the body, grasp the points of the shoulders by the clothing, or, if the body is naked, thrust your fingers into the armpits, clasping your thumbs over the points of the shoulders, and *raise the chest as high as you can* (Fig. 2), without lifting the head quite off the ground, and hold it long enough to *slowly count ONE, TWO, THREE.* Replace him on the ground, with his forehead on his flexed arm, the neck straightened out, and the mouth and nose free. Place your elbows against your knees

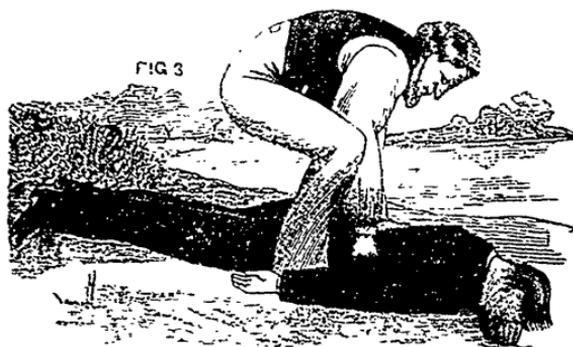
and your hands upon the sides of his chest (Fig. 3) *over the lower ribs and press downward and inward with increasing force long enough to slowly count ONE, TWO.* Then suddenly let go, grasp the shoulders as before and raise the chest



(Fig. 2); then press upon the ribs, &c., (Fig. 3). These alternate movements should be repeated 10 to 15 times a minute for an hour at least, unless breathing is restored sooner. Use same regularity as in natural breathing.

**RULE 3.**—After breathing has commenced, RESTORE THE ANIMAL HEAT. Wrap him in warm blankets, apply bottles of hot water, hot bricks, or anything to restore heat. *Warm the head nearly as fast as the body, lest convulsions come on.* Rubbing the body with warm cloths or the hand, and slapping fleshy parts, may assist to restore warmth, and the breathing also. If the patient can SURELY SWALLOW, give hot coffee, tea, milk, or a little hot sling. Give spirits sparingly, lest they produce depression. Place the patient in a warm bed, and give him plenty of fresh air; keep him quiet.

**BEWARE! AVOID DELAY.** A MOMENT may turn the scale for life or death. Dry ground, shelter, warmth, stimulants, etc., at the moment are nothing.—ARTIFICIAL BREATHING IS EVERYTHING,—is the ONE REMEDY,—all others are secondary.



*Do not stop to remove wet clothing.* Precious time is wasted, and the patient may be fatally chilled by exposure of the naked body, even in summer. Give all your attention and effort to re-

store breathing by forcing air into, and out of the lungs. If the breathing has just ceased, a smart slap on the face, or a vigorous twist of the hair will sometimes start it again, and may be tried incidentally.

Before natural breathing is fully restored, do not let the patient lie on his back unless some person holds the tongue forward. The tongue, by falling back, may close the windpipe, and cause fatal choking.

*Prevent friends from crowding around the patient and excluding fresh air*; also, from trying to give stimulants before the patient can swallow. The first causes suffocation; the second, fatal choking.

DO NOT GIVE UP TOO SOON: You are working for life. Any time within two hours you may be on the very threshold of success without their being any sign of it.

*In suffocation by smoke or any poisonous gas*, as also by hanging—proceed the same as for drowning, omitting effort to expel water, etc., from windpipe, as in Fig. 1.

*In suspended breathing from effects of chloroform, hydrate of chloral, etc.*, proceed by Rule 2, taking special pains to keep the head very low, and preventing closure of the windpipe by the tongue falling back.

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BITTERS—All "Bitters" offered for sale contain Alcohol. Many take them in the place of brandy, whisky, rum and other forms of spirits, persuading themselves that they are reforming as to their beverages. Some bitters have more alcohol in them than whisky or brandy. The State Assayer of New York recently published a statement of the analysis of various bitters; that Vinegar Bitters contains as much alcohol as many kinds of wine and about double the amount contained in various brands of ale. Taking bitters of the mildest kind is the first step to habitual drunkenness.—*Hall's Journal*.

More than one-fourth of all the inmates of insane asylums are from the families of farmers and merchants; from the former, because the wives are overworked, and the husbands lack mental culture and variety of occupation, having little to stimulate to mental activities, and a scant knowledge of the laws of health. From the latter in consequence of the reverses of mercantile life.—*Ec.*

SANITARY STATE OF CALCUTTA.—A most remarkable diminution in the rate of mortality in Calcutta is shown in the returns for that city for 1871-1873. Five years ago, the deaths were 20,000 *per annum*; they are now said to be reduced one-half. This astonishing improvement is attributed to the attention to sanitary measures, which have converted the city from an undrained and pestilential hole into a well-drained place with a water supply "far better than that of London, and as good as that of Glasgow." Strong measures were taken in the city to make the registration of deaths compulsory, and the mortuary returns are now properly and regularly supplied.—*British Med. Journal*.

THE ROYAL LIFE SAVING SOCIETY of Belgium has arranged to have an international exhibition of life saving machinery and appliances for safety, ventilation and health, which will be held at Brussels, in June, 1876. The machinery and apparatus to be exhibited are divided into nine classes, viz., for saving life in case of fire; in case of shipwreck and drowning; in case of accident from locomotion on roads and railways; in case of war; for health and sanitary measures; for health and ventilation in mines, factories and workshops; for household and private hygiene; for institutions, associations and societies organized for improving the condition of the working-man; and for medicine, surgery and pharmacy in their relation to the above classes.—*Med. and Surg. Reporter*.

RECENT DEBATES UPON ALCOHOL.—Dr. Willard Parker, of New York, asks the following very important questions: Does alcohol, when injected into the body, become assimilated and produce force? Why is the temperature lowered when alcohol is injected? Why do all persons in very high latitudes find that they can not take alcohol when the cold is very intense? How is it that persons who have to do very hard work so often break down when they attempt it on beer or spirits? And how is it that insurance companies find the average life of teetotallers is about 64, whilst that of drunkards and moderate drinkers is 35 years and 6 months? How is it asks Dr. Willard Parker again, that fifty per cent. of the idiots in asylums and idiotic schools have drunken parents?

These are, indeed, hard nuts to crack for the school of Todd and his most able disciple, Anstie; and this seems to have been the opinion of six medical gentlemen who took their stand in Exeter Hall, London, recently, against alcohol.—*American Medical Weekly*.

## MONTREAL CORRESPONDENCE.

To the Editor of the Sanitary Journal.

MY DEAR DOCTOR,—It is certainly sad to think that the medical profession takes generally so little interest in sanitary science; no doubt further knowledge of public and private hygiene would tend to elevate the standard of the medical profession, and to improve mankind physically and morally; diseases too would more readily yield to medical treatment and their character would also be altered, from the most virulent to milder forms. We know by the etiology of typhoid fevers, cholera, etc., that these diseases have been greatly mitigated since sanitary measures have been in use. Ever so versed in political, social and philosophical questions, man however fails in attaining his object if he ignores the laws which govern him as a physical, moral, social, and even as a religious being.

The Old World seems to have of late somewhat better appreciated hygiene. Statesmen of the highest standing have declared that it was time that politicians should concentrate their minds on sanitary science. It is however astonishing that Europe, which pretends to be the leader of civilization, with the exception of a certain number of enlightened men, should yet be ignorant of the art of prolonging human life. In Paris, Le Jardin des Plantes, since 1871, spent 200,000 francs for the health and comfort of snakes and other animals. We find on the other hand that one of the richest departments has since 1870 economised 200,000 francs on the service of children, assisted by public charity; the consequence was that a mortality of 50 per cent took place amongst those unhappy little beings, who could not get the same comfort as snakes and crocodiles. Why not try to preserve the health of a foundling as that of a rattle-snake.

Recently, at the congress of social science in Glasgow, Dr. Playfair, President of the section of hygiene, said, if "babies were horses, pigs, or calves, every week there would be some-

thing said about them in Parliament, but as they are only human infants no one cares for them."

Societies for the protection of animals are organized in every country, powers readily obtained from governments to punish whomsoever injures his horse or calf, whilst legislation to prolong human life is obstructed and opposed. Our pretended enlightened civilization has reversed the order of things, humanity to animals, destruction to human life seems to be the aim of our Pagan age. Let us first educate man, and beasts shall benefit thereby. A society to protect animals has been for some time in existence in Montreal; should we attempt to organize one to protect infants the idea would probably be ridiculed and scorned.

You remark that Quebec is ahead of Ontario in sanitary affairs. A permanent committee on hygiene has been organized amongst the medical men of the legislature of Quebec. A bill to regulate burials has been passed for the province of Quebec; and a report on compulsory vaccination adopted. The constant high death rate of Montreal has prompted us to act, but how slow we have progressed since the six years that the work has been commenced, we can say that we are only on the eve of accomplishing something practical. We meet yet with great opposition from the anti-vaccinators, not only in vaccination but in other health matters. The consequence of that opposition was that the death rate by small pox, last year, in the city and surroundings, was 827 French Canadians, 126 Irish and Scotch Catholics, and Catholics of other countries, and 70 Protestants. The total mortality of the city proper was 4,826; the population being estimated at 139,666, gives 34.51 per 1,000. There were 3,990 Catholic deaths; the population being 101,291, giving 39.39 per 1,000. Protestant death rate was 836; population 32,385, giving 21.78 per 1,000. It is painful to see such a high death rate caused by diseases, the greater part of which, according to the scientific world, can be prevented by sanitary measures.

Our worthy new mayor, Dr. Hingston, whose inaugural address I forward you, and who was called to the mayoralty by

the unanimous desire of the medical profession of Montreal, has decided to give his serious attention to health affairs and to put the Board of Health on a scientific basis. He has already called together those connected with the health department to discuss and learn the powers of the Board, and he is to call a meeting of the Board of Health for Thursday next in order to take cognizance of and discuss things relating to each department of the local health bureau, viz: vaccination, inspection of vital statistics, management of small-pox hospital, etc., etc. Reports to be made once a month to the Board of Health.

It is proposed to publish weekly a report of the death rate, with remarks, to be distributed to the different cities of the Dominion, and to some of the principal cities of the United States. The object being to interest Toronto, Quebec, Ottawa, Halifax, and other cities, in this sanitary movement, and induce the Mayors and Sanitarians to unite, in order to organize Boards of Health, and prepare such provincial legislation as would promote public health. Also to decide the Federal Government to establish a Bureau of Sanitary Science and Vital Statistics.

To insure success I would especially call the attention of the medical profession of Ontario, and request them to kindly join us in this very useful work. The sanitary cause has many able advocates amongst our confreres here, and who promised not to be idle.

The annual report on the health of the city will be completed in about three weeks. I shall not fail to forward it to you, with such other information as I may think interesting to your important journal.

I remain, dear doctor,

Your devoted confrere,

A. B. LAROCQUE, M.D.,  
*Health Officer.*

Montreal. 13th April, 1875.

# THE SANITARY JOURNAL,

DEVOTED TO PUBLIC HEALTH.

VOL. I.

TORONTO, MAY 1ST, 1875.

No. 6.

## SANITARY LEGISLATION.

Last year during Parliamentary recess those interested in Sanitary matters had some foundation upon which to build a hope that a basis would soon be laid for much more perfect and complete sanitary administration. The Dominion Premier had promised Dr. Brouse and the House, during the session of 1874, that he would give this subject careful consideration, and if possible bring in a Bill the next session for the purpose of establishing a Bureau of Sanitary statistics. The next session came, and we learn that the Government had been prevented carrying out in the matter what it had desired to carry out, through difficulties in reconciling the powers of the Local and General Governments, and it was therefore compelled to postpone the matter for at least another session. But we cannot learn that there has been a promise made by the head of the Government, or any encouragement held out, to give hope that anything will be done toward the establishment of such a Bureau in the immediate, or even in the remote future. Every one knows that ministers have not much leisure, and that their duties are onerous enough, but we find they are able to bring down Bills for the construction of Railways and Telegraph lines, and Supreme Court and Postal Bills; and we venture to say that had there even been difficulties of no inconsiderable magnitude in reconciling the powers of the different governments in regard to these measures, there soon would have been in all probability a way found

for surmounting the difficulties. And why? Because the Government, it is supposed, had given a good deal of time to the consideration of these matters, and believed Legislation upon them was required by the country—was essential to its prosperity and well-being; and moreover, the people demanded it. But it appears very difficult indeed to induce either Ministers or people to give that attention to matters affecting Public Health which such matters actually demand, and which would develop a lively knowledge of their magnitude, and lead to decided action and legislation upon them. Is there a man in Parliament or out of it, who has given even a moderate amount of attention to the subject of Public Health, who will say that any one measure that engaged the attention of Parliament last session,—any Bill that received the assent of His Excellency the Governor-General, will benefit the country as much as would a measure for laying the foundation for a complete Sanitary Organization, and so lead to thorough Sanitary Reform?

In the SANITARY JOURNAL for March, it was shown, from reliable estimates, that by means of Sanitary Legislation—by the practical carrying out of good Public Health Laws, the Dominion might be saved annually, besides an incalculable amount of misery and grief, about thirty millions of dollars and thirty thousand lives. And the cost of this would be comparatively small; not so much probably as would be the cost of attracting and bringing into the Dominion of thirty thousand immigrants. Now, if these estimates and figures approximated the truth, it may very naturally be asked how shall the country secure such legislation, and such laws, and that right soon? While there is no reason that we know of why the Government of a country should wait for the people to demand any particular legislation before taking action in the direction of it, if the Government believes such legislation would be beneficial to the country, there are very good and obvious reasons why the people if they desire it should request and urge action on the part of the Government if the latter proves to be dilatory and inactive—in short, demand the legislation they desire,

and never rest until they get it. Hundreds of good men have been laboring for years in the so-called temperance cause, doing a good work ; thousands have signed petitions to our legislators urging legislation upon the temperance question, with a view to prohibition. But there are many other evils of great magnitude, besides the alcoholic, requiring prohibitory legislation, and which seem to be overlooked by the temperance people. Evils which lead to, and propagate intemperance ; evils which enfeeble the population, and destroy self control ; evils from which men flee to the intoxicating cup. The breathing of foul air from over-crowding, from the decomposition of organic matter, etc., and the drinking of impure water should be prohibited ; over-crowding, the accumulation of filth, and living in unventilated habitations, and up damp undrained ground might be prohibited ; the use of tobacco might, to say the least, just as properly and consistently be prohibited as the use of spirituous liquors ; overwork, and overstudy in unventilated school-rooms, and the use of improper food, might be prohibited. Prohibitionists should not therefore be content with waging war upon alcohol. Resolutions and petitions in favor of prohibitory legislation upon these other evils might prove more effectual than those in behalf of the " temperance " cause have hitherto proved. Legislation upon these other evils would probably meet with less opposition. Filth and foul air and water do not swell the revenue as do alcoholic beverages, and people are not generally so fond of the former as of the latter. It is to be hoped then that broader views may be taken of the ills which bring misery and degradation upon the human family, and that resolutions may be passed by bodies of men in Canada when opportunity offers, and even petitions be circulated and signed, requesting and urging the governing bodies to take some immediate action toward placing the country in a better sanitary condition.

If local medical associations would take up the matter, and adopt resolutions in favor of some immediate legislation with a view to the establishing of a Bureau of Sanitary statistics, they would exert no inconsiderable influence, and aid our con-

frere, Dr. Brouse, in his exertions toward this object. Just think for a moment how much valuable knowledge regarding the causes of disease, which would tend greatly to advance the science of medicine, would be obtained by the passing by Parliament of a stringent Bill for insuring full and regular returns as to the causes of deaths, and a complete history of the diseases, and their causes and surroundings. The gain to the profession would be incalculable.

The press might exert a heavy influence in the direction of this object if it would frequently and persistently draw attention to the necessity for such a Bureau being established; for we cannot imagine that any one questions the necessity for it. As Dr. Larocque, of Montreal, observes, "by census, governments know the number of individuals in a nation, but by vital statistics they have a knowledge of the *quality* of the population." And the quality of anything is perhaps of as much importance as the quantity.

If the Dominion, especially perhaps Ontario, is suffering, or likely in the future to suffer, from any one thing more than another it is probably *politics*. The press is largely responsible for this; and we should be very glad to find its valuable influence inclined a little more toward something more likely to bring health with its attendant happiness and prosperity to the people.

We cannot conceive that the difficulties in reconciling the Governments spoken of by the Premier are not readily removable, or that the Local Governments will not aid in every necessary way to have them removed, and we hope and trust that something will be done at once toward securing that which appears to be so universally admitted is absolutely essential to the well-being of the Dominion.

CLEANLINESS in all the surroundings of a family mansion, pays richly in many ways, in good health, moral elevation, personal comfort, and dollars and cents besides.

THE ashes of the cremated Lady Dilke weighed just six pounds; so that, after all, our bodies are made up of a few pailfuls of water and a little dust.

## PHYSICAL EXERCISE IN OUR SCHOOLS.

Apparently no man manifests a deeper interest in the well-being and prosperity of Canada than Dr. Brouse. During the Parliamentary Session recently terminated he moved in the matter of Juvenile Military Education in our schools, and drew the attention of the House and the consideration of the Government to the question in a lengthy and interesting speech, of which the Hon. Mr. Vail observed, that the Doctor would be entitled to the thanks of the whole country if he would during the recess visit various parts of the Dominion and deliver it before our educational institutions.

This subject may be viewed and advocated as a matter of economy; as, in a degree, a guarantee of peace—by reason of the country being thereby better prepared to repel invasions; as a matter of discipline and order; and finally, as one of health. As a matter of health only—mental and physical health—we have to do with it. We need not occupy space in showing the value of physical exercise; every one knows that it is one of the essentials of life, and is indispensable to health and longevity; and as the mind and the body are so very intimately connected, there cannot be a doubt that mental and physical development and culture should go hand in hand together. Some writers argue that children do not require systematic physical exercise; that if they are permitted to run unrestrained in the yard and the field and engage in the various sports and games, it is enough. But it can hardly be doubted that the body will be benefitted by regular, judicious, and discriminate exercise as well as the mind, and systematic physical training may be regarded as an essential branch of education. As with the advantages of conversation and books, we are not satisfied unless our children receive the methodical mental culture of the school and the college, so we should not regard their education as complete until they have received a regular course of physical training. "As we do not trust to the spontaneous development of the mind," says Dr. Taylor, "but aid its growth by suitable mental gymnastics,

called systematic education, neither should we allow the body to take its chance of proper or improper development." Furthermore, the tendencies of society and fashion and hereditary predispositions are toward unsymmetrical and imperfect development and require to be guarded against and counteracted. Some forms of physical exercise, too, necessitate great activity of the mind and the senses, and thus aid in a degree in the development of the mental faculties.

Then as regards the time spent in physical exercise. The belief is becoming very general that too much time is now usually allotted to study. Some believe that three hours a day is sufficient for close application. Evidently children who apply themselves closely to study should be so engaged for a shorter period than those who exercise less application and who do not attend so closely to their books. With not very pleasant recollections of the irksome, tedious third and sixth hours of the daily study-period of school life, we have strongly advocated the four hours period, with an hour and a half about noon for luncheon or dinner, and have had these hours adopted in the teaching of our own children. Two hours might very advantageously be taken from the present six-hours period of the public schools for physical education; and the larger portion of these two hours might well be devoted to military drill. But the military drill would hardly form a perfect system of physical exercise, as it does not demand that varied and vigorous action of the muscles and other organs of the trunk which a perfect system should include, and a short period might be occupied in some gymnastic exercises.

Let us strive then to have as soon as possible a certain fixed and regular amount of physical training form a part of our educational system, which, with the exception this deficiency and of the almost entire want of hygienic studies, is generally regarded as an admirable and almost perfect system. With such a course of education, in properly ventilated school houses, we should have healthier and happier children, more vigorous in mind and body; we should not then, as Dr. Brouse observes, "see so many of our youth who were rosy and healthy before

going to school, become pale and bloodless after attending school;" while there is nothing perhaps that could act more directly and powerfully in the improvement and development of the race.

A CASE OF TYPHOID FEVER arising from sewage emanation is reported in the London, Eng., *Medical Times and Gazette* for March, by C. Orton, L.R.C.P., M.R.C.S., etc., of Newcastle. Death took place about the twentieth day of the fever. The patient was an amateur gardener, and had a communication made by means of a pipe between his garden and the cesspool common to two houses standing on an eminence far apart from any other habitation. The liquid from this pool he had used but a fortnight, or even less, when he began to be ill. The inhabitants of the two houses had been and remained in good health.

THE CONTEMPLATED CHANGE.—This number of the SANITARY JOURNAL is the last of the bi-monthly series. After the next number, which will be issued in the latter part of June, the JOURNAL will be published monthly. This change will, of course, double the cost of publication, and the subscription price will therefore be two dollars per annum, free of postage. Dunning is an unpleasant business, but we are constrained to say that our friends will confer a favor by remitting the amount of subscription. Two dollars will pay for the JOURNAL from number one to the end of the present year, or for twelve numbers. Please remit early.

DEATH BY DROWNING is of frequent occurrence, and if proper means of restoration were generally known, by their timely application a life might sometimes be saved which would be quite irresuscitable before the services of a physician could be obtained. On another page may be found rules, &c., for resuscitating those apparently dead from suspended breathing. We have incurred some extra expense in the illustrative cuts, and hope they will serve to make sufficiently plain a simple

and ready method of applying the ONE CHIEF REMEDY in all such cases, viz., artificial respiration, and so aid in saving a life.

THE TORONTO CITY COUNCIL, moved by Alderman Mutton, have referred to a Committee the question of the cost, and keeping in order, of two floating bathing-houses. It is to be hoped Alderman Mutton will not permit the matter to rest until they are a-float. It would be a charity to the "great unwashed," and a good thing for the entire public in the city, if there could be one or two *free* bathing houses of that description built.

COMPULSORY VENTILATION.—We have a law compelling attendance at our public schools, but there appears to be no provisions in it to compel school sections or trustees to provide properly ventilated school-houses. It might become a question involving a nice point of law whether children could be compelled, or subjected to fine if they refused, to sit in a room which might be proved to be positively injurious to their health. It would be wisest to provide suitable school-houses before compelling attendance in them.

BEST KNOWN, LEAST LIKED.—Tobacco has perhaps never before received so strong a counter-blast as has recently come from its own supposed birth place. At a recent meeting of the Virginia State Medical Society, Dr. W. W. Parker, Chairman of a Committee upon tobacco, gave in, in a report, the following conclusions :—

“That the use of tobacco is more revolting and obnoxious to the natural physical man than is the use of alcohol.

That to the uninitiated it is a more deadly poison.

That the *toleration* of it by the system is no evidence that the drug has ceased its bad effects upon the organism.

That the moderate use of tobacco causes more dyspepsia than the moderate use of alcohol.

That no young man should begin its use without first consulting the most intelligent physician in his neighborhood as to its probable effects upon his nervous and digestive systems.

That the testimony of smokers and chewers *themselves* against the use of tobacco is that it is *uniformly damaging*; far more so than is the testimony of drinkers against the use of alcohol.