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CANADA

MEDICAL JOURNAL.

ORIGINAL COMMUNICATIONS.

Synopsis of a paper read before the members of the Medical Section of the Canadian Institute, at a social meeting held in the new wing of the Provincial Lunatic Asylum, on the evening of Friday, 19th November. BY JOSEPH WORKMAN, M.D., Medical Superintendent. On the position of medical witnesses, chiefly in cases of questionable insanity.

After some introductory observations the reader proceeded to submit to his auditory his views on the subject, selected by him for their consideration, of which the following is an outline :

He begged to assure those who honoured him with their presence on this occasion, that his purpose was not to offer instruction even to his junior professional friends, but to endeavour to interest them in the consideration of a few matters of ordinary occurrence, with which members of the Profession are, from time to time, liable to be brought into encounter, and some of them more frequently than is at all agreeable.

Those who have had experience in this department of duty, will admit that its satisfactory discharge is sometimes a perplexing and unpleasant task. The medical witness is usually summoned by the counsel on one or other side; and if he is not extremely cautious, he may find himself involved in a partizanship quite antagonistic to his professional dignity, and very ill-comporting with his subsequent mental comfort. He must not forget that whilst it is conventionally understood to be the duty of the advocate so to utilise the testimony of every witness as to make all white on his own side of the case, and all black on that of his opponent, yet it is the sacred obligation of the medical man to absolve himself from all party allegiance. He must feel no interest in the case, on either side. His proper and only safe position is that of *amicus curiæ*; the friend and helper of the Court, and not of either of the litigants before it. But the apprehension of this relation is sometimes more easy than the preservation of it, more especially to juniors, who have not had the benefit of experience in it.

There is seldom much difficulty in getting through our examination-in-chief, especially if we have been so indiscreet as to allow the examining counsel to elicit from us, before hand, all that we are prepared to testify. He will have taken good care so to construct and arrange his questions as to draw from us all that suits his purpose, and all that makes against the opposite side; and he will treat us with the most charming courtesy; but when the opposite counsel sets to work, to perplex and annoy, brow-beat and bully, stultify and mortify us, then we find it well both to have, and to have had, all our wits about us, for assuredly he will not fail to profit by every indication we may give of modest confusion, or of inadvertent inconsistency. It will be in vain that we endeavour to explain; he wants not our explanations, and will take good care that we shall not set ourselves right. It is his business to set us wrong, and he will do it if he can. He will make us appear as ridiculous and mendacious as he can, and he will, in doing so, manifest towards us so much scorn, and even virtuous indignation, that we almost conclude he will never again tolerate us in society, or bow to us on the streets. But if we suppose that because he has done all this, he is really angry, or that he regards us as the vile and stupid creatures he has laboured to exhibit us, we shall be greatly mistaken, and shall be equally unjust to him and to ourselves; he knows the truth all through, and in his soul, he respects us, and admires our pluck, if we shew that we have it. Do not feel wrathful towards him, because he has earnestly done his *work*. It may, to be sure, in your estimation, have been very *dirty* work, and you may, in your verdancy, wonder how any man could, merely for his fee, have done it; yet remember that you too have had to do some very dirty work in your time, not, indeed, for any pecuniary compensation, but to qualify yourselves in after life for the earning of honest and honourable compensation for your services to *your clients*. Though you may not have robbed your honest neighbour of his fair fame, yet you have robbed the grave of its sacred deposits; and though the moral stench of the swearing-shop may be very offensive to your now refined olfactories, do not forget how inoffensive to you custom rendered the odours of the dissecting-room.

It is much to be feared that if lawyers sometimes handle medical witnesses rather indecorously, we may ourselves too frequently have tempted, or impelled them, to the indecency. The sturdy confidence and ill-concealed ignorance with which we sometimes have heard members of our profession deliver their testimony, or their crude opinion on questions of much obscurity, has too often been more than our own forbearance could well tolerate. If the examining counsel has mastered his case as he should do, need we wonder that he contrives to put his man into a tight corner?

If, however, the medical witness goes into the box duly qualified to speak the truth, and determined to do so, it is truly surprising to observe with what tenderness and courtesy such a witness is treated by the counsel on both sides. He is a loaded revolver, very dangerous to be toyed with, and still more so to be roughly handled. If one barrel goes off, they know not how many more may remain loaded, and worse still, they can not tell on which side it may kill; and here, and here only, lies the safety of our profession in the witness box. Let us teach the Bar and the Court and the community that we understand our position and the dignity of our calling, and then see whether our reputation as a body will not stand higher than it otherwise might. Be assured that, however roughly and rudely lawyers may treat us in Court, they have not therefore resolved to cease to be gentlemen outside; and if we show them inside that we are gentlemen, and truthful men, we need not fear to meet them anywhere. Dr. Workman next proceeded to apologise for any unavoidable manifestations of egotism, which the remainder of his paper, drawn from his own experience, might exhibit, and then submitted some details, of which the following condensed statement is here presented.

The first case to which he drew attention was not one in which the question of sanity of mind was immediately involved, though from the sequel it appeared that this psychological consideration might not have been entirely foreign. It was as follows:—A young man, son of a respectable father, resident in this neighbourhood, had, in some altercation, struck another man on the bridge of the nose, with so much force as to knock in this part, as well as the contiguous portion of the frontal bone of the skull. Compression of the brain and death followed. Dr. Workman was summoned, at the instance of the father, to attend the coroner's inquest, and consequently assisted at the *post mortem*. The case came for trial at the assize. The evidence adduced identified the young man alluded to with the striking of a blow, followed by the fatal result. The defence set up did not rebut the fact, but alleged that the blow was inflicted with the bare fist of the prisoner, and not with any weapon. The counsel for the prisoner endeavoured to draw from Dr. W. admission of this probability. Dr. W., who was standing in the old Court House, on Church street, near the prisoner, replied that he doubted if a blow, sufficient to break down the bones of the nose, and to drive in both plates of the *os frontis* and produce fatal compression of the brain, could be dealt by any man with the bare fist, but certainly not, he added, by the prisoner, whose hands he was then looking on, and they were as soft and small as his own. The latter part of this answer was not of course sought for by the counsel for the defence, who had summoned Dr. W.; but it was the truth, and Dr. W. believed it was his sacred duty to speak it.

The prisoner was sent to the Penitentiary for five years. The father, three years afterwards, was admitted as an insane patient, by Dr. W., into the asylum. He never evinced the slightest ill-feeling toward Dr. W., but very far to the contrary. He recovered his reason, and he and Dr. W., up to the death of the old man, visited each other, and maintained the most friendly relations. The criminal son himself visited the asylum, to see an insane brother, after leaving the Penitentiary, and evinced no hard feeling.

Had Dr. W. understood that it was the duty of a medical witness merely to avoid speaking untruth, and that at the same time he may feel free to withhold most important truth, because it was not sought for, his allusion to the hands of the prisoner would probably not have been made; yet the fact must have had much weight with the jury, as justifying the conclusion that some sort of weapon must have been used by the prisoner.

The second illustrative case was also one of homicide, but was more interesting than the preceding, as it involved the question of the mental unsoundness of the prisoner at the time of perpetrating the act.

The culprit was a man of common rustic position. He had, some years previously, been a patient in the asylum under Dr. W., but left it in a state of mental competency. His insanity seemed to have returned in the form of intense jealousy; and under the promptings of "the green-eyed monster," he one day, in the bush, at sugar-making with his wife, beat her to death with a heavy billet of wood. He then stuffed her head and shoulders into a basket, and went a little distance from the body. The son, a boy of about 13 years, brought the dinner, and found his mother as above stated. He saw his father not far off, and questioned him as to the death of his mother. The man neither denied the deed, nor attempted escape.

At the trial a number of credible witnesses testified to the manifestation by the prisoner of the most palpable delusions connected with his jealousy. The son also gave convincing evidence of this mental condition, and his evidence was the sole direct proof of his father's guilt.

The defence, of course, set up the plea of insanity, and Dr. W. was summoned as a witness. He visited the prisoner in gaol, in company with the gaol surgeon, on the morning of his trial. The prisoner being addressed familiarly by Dr. W., said he did not know him, did not recollect ever having seen him, did not recollect ever having been in the asylum, but people told him he had been there; he did not remember Mr. B., the steward, nor A. B. his keeper. In short, his memory, if he was speaking truly, was a complete *tabula rasa*.

But his health was good, his appetite and digestion were regular, his

sleep was sound, his pulse well rounded and regular, his skin normal, his eye clear, but rather furtive. The gaol surgeon, a highly intelligent and conscientious man, not merely testified to the presence of insanity at the time of the murder, but to its persistence up to, and in the present, and he enforced his opinion by a series of the most interesting, (though, for the occasion, rather too profound,) psychological arguments ever heard in a Canadian Court of Justice.

Dr. W. being next called on, and duly questioned by the counsel for the defence, as to his belief regarding the mental state of the prisoner on the day of the murder, stated that he had no doubt of the presence of insanity at that time: but that as to the prisoner's present mental condition, he had serious doubts. He then related the occurrences of the morning in the gaol, and said that he was thoroughly convinced the prisoner was simulating, for he was sure he remembered him very well, and had even more clear recollections than himself of his asylum residence and its incidents.

He was acquitted on the ground of insanity at the time of committing the murder, and was ordered to be confined during His Excellency's pleasure in the Criminal Asylum at Kingston. The medical superintendent of that institution accompanied the prisoner from the gaol to the asylum; and this gentleman afterwards informed Dr. W. that the man talked almost all the way of nothing but the Toronto Asylum, the doctors, the steward, and almost everybody else in it. Dr. W. visited the Rockwood Asylum some years afterwards, John was among the first to introduce himself, and to remind Dr. W. who he was. Dr. W. asked him how it happened that he did not know him in the gaol, on the day of his trial. He replied, "O, I did not want to know you that day."

This case was surely one well worthy of serious after thought; for the detection of simulation of insanity in any prisoner, is a very important negative fact; and were we to allow the impression made on our minds by this detection, to bear upon our opinion as to the mental condition of the accused at all other times, or at some particular time past, we might fall into very grave error. This unfortunate man, on the day of the murder, neither attempted escape, nor denied the crime. He attempted no simulation then, for the best of all reasons, he was not conscious of the need of it. Nay, he not improbably would that day have repudiated the imputation of insanity. But several months confinement in gaol, coupled with the eternal removal of the subject of his jealous delusions, had produced a change; and now that he was to stand in the dock, and the issue must be to him death or life, he thought it behoved him to assist his counsel, as far as in his power, in his defence. He was a man of low in-

telligence, and therefore his device was of the clumsiest sort. Had he been well read in Shakspeare, he would have better acted his part.

The third case mentioned by Dr. W. was one in which proceedings were taken in Chancery to set aside a Will on the allegation of the testator's unsoundness of mind at the time of making it. The testator died about the age of 84 or 85. He had married a second time, at the age of 76, a woman more than 40 years his junior. From this fact a pretty correct estimate might be formed of his mental endowments, and all well informed medical men would understand the serious significance of youthful prowess in the decadence of the animal frame. Of all the old men known to us who have married young wives, how many have not, in a few years, smashed down in both physical and mental competency? This poor man, from having run through the giddy rounds of a loving honeymoon, and a year or two of silly exhibiting of his second boyhood, passed over into the most miserable domestic unhappiness. His young wife, whom so lately he adored, became odious to him. His children became hateful to him, and he even repudiated his paternity of them. Poor things! it might not be hereafter their greatest misfortune had his imputations against their mother's chastity been just. He had one or two paralytic seizures before his death. He had made a will in his brighter autumnal days, in which he had left them a fair provision; but some time before his death he cancelled this will, and made another, in which he almost cut them off. The widow consulted Dr. W., mainly, perhaps, with the view of discovering what testimony he might be prepared to give in her assistance. Dr. W. used every available argument he could think of, to dissuade her from proceeding with the case, but in vain. Indeed the case was already too far advanced for retraction. In due time it came on before the chancellor; much evidence confirmatory of the unsoundness of the old man's mind was offered; but a great deal of it was much attenuated in cross-examination.

Dr. W. being called up, was questioned very courteously as to his personal knowledge of the testator, and his mental habits and peculiarities. After careful replies to a number of skilfully arranged questions, the Dr. was asked to state his opinion, as to whether the various facts he had himself stated, and had heard other witnesses state, indicated the presence of insanity. He replied that he could not answer that question unless the examiner gave him his definition of the term insanity; for the views of himself and of the learned counsel as to what constituted insanity might differ. The learned gentleman said it was for the Dr. to give a definition, but the Dr. said he thought otherwise. The learned gentleman pressed for an answer. The Dr. pressed for a definition. The learned gentleman be-

came grave and ominous, and by his looks seemed to whisper an admonition against contempt of Court. The Dr. became alarmed, and piteously looked over to the chancellor, suing for mercy. That learned dignitary felt the full force of the appeal, and most opportunely rescued the Dr. from the cruel fangs of his torturer, kindly saying, "O, the Dr. is not called upon to offer his opinion as to the presence of insanity. That is the province of the Court. The witness is required to state facts, and the Court will decide whether these constitute insanity."

The Court did decide; and its decision was that the testator was of sound and disposing mind; just as the widow had been admonished by Dr. W. it would do.

Nothing is more difficult of upset than a will: Dr. W. gave brief details of another case, in which the evidence of mental unsoundness was five-fold stronger than in the preceding one, and yet a full bench of judges had upheld the bequests.

Dr. W. urged on his auditors the great expediency of their being very cautious, when pressed for their opinion in Court, especially in chancery, as to the existence of insanity, in any case. They would always act most prudently in avoiding this committal. Let them state facts, and leave to the Court the disposal of these facts. It is very unpleasant for a medical man to see his opinion ignominiously kicked out of Court, and that has not seldom been the fact. Judges must understand insanity, (and of course all other diseases, for insanity is but one of them), much better than doctors. Doctors do not even pretend to be able to define insanity; but judges and lawyers do so; and why not? Does not Shakspeare tell us that,

— "to define true madness,

What is it, but to be nothing else but mad."

So we may safely leave the task in their hands.

The last illustrative case given by Dr. W. was one of recent occurrence, and therefore, as this outline is already too extended, it may be best to leave it unnoticed, though the details were both amusing and instructive.

An examination of the merits of Carbolic Acid as a remedial agent in the practice of Surgery, with a glance at its history. By WM. CANNIFF, M.D., M. R. C. S., Eng.; Prof. Surgery Victoria University, Toronto; Vice-President Canadian Medical Association; Surgeon to the Toronto General Hospital.—Read before the medical section, Canadian Institute, Toronto.

Probably no medicine has received more attention from the medical profession in modern times than carbolic or phenic acid. In the his

tory of our profession we find many instances in which certain drugs acquired with rapidity great reputation as remedial agents. In some of these cases the reputation was well deserved, and proved to be lasting; in others it was of an ephemeral nature, and the idol was soon forsaken. It is the misfortune of some persons, occasionally individuals of more than ordinary intelligence and professional standing, to be led away by false theories, to mistake the relationship of cause and effect, to confound coincidences with consequences, or, in other words, to mount a hobby and ride it beyond the ken of the profession. But others, not blinded by an idea, steadily and wisely pursue truth, and succeed in revealing to the profession a vast fund of information which may be appropriated by all. It is my intention upon the present occasion to make a few enquiries with respect to the merits of carbolic acid as a remedial agent, and to examine its claims to the place which a large number of our profession have given it. A drug which has the world-wide renown now possessed by carbolic acid must certainly be entitled to some credit; but when a medicine is vociferously declared to be a panacea for almost every disease it at once becomes to the more thoughtful an object of suspicion. Four years ago carbolic acid was hardly known to the profession; but since that time it has obtained the name of remedy for a vast number of complaints, both surgical and medical. At first prominently set forth by Prof. Lister as a preventive of suppuration and decomposition in surgical affections, it very soon took a position of universal importance. Originally used in Germany and France, and then in Scotland, as a disinfectant, it has become, through the writings of Prof. Lister, almost a world-wide panacea. In Europe and America particularly it has acquired the most distinguished reputation. Its praises have been sung and echoed, and re-echoed back and forth; across the Atlantic, from Scotland to the United States, from the States to England, and thence to Canada and every other British Colony. At first employed as a local application in surgical affections, it subsequently became a therapeutical agent in medical cases.

In surgery we find it recommended in all forms of wounds and abscesses; for ozaena, gonorrhoea, gleet, cystitis, lacrymal fistula, otorrhoeal discharge, conjunctivitis, nasal polypus, for burns and scalds, carbuncle, pyemia, primary and secondary syphilis, erysipelas tubercle mucous, to prevent mosquito and all venomous bites, for dissection wounds, for sloughs, gangreen, scrofulous ulcer, fistula, caries, necrosis, whitlows, and for the toothache. It is used to destroy parasites wherever found; for all forms of skin disease, impetigo, prurigo, scabies, barbers' itch, eczema, poriasis, herpes, leprosy.

In medicine it has been employed in the treatment of stomatis, tonsillitis, laryngitis, diphtheria, acute and chronic bronchitis, spasmodic asthma, gangrene of the lung, in catarrh, in early and advanced tuberculosis of the lungs; also in dyspepsia, obstinate vomiting, all forms of diarrhoea, dysentery, infantine cholera, sluggish bowels. As a vermifuge it is most potent. It is given in intermittent fever; to prevent typhoid fever, for typhus, gastric fever, scarlet fever, malignant fever, small pox, measles, croup, whooping cough, rheumatism, gout; it unloads the urine of lithates, and it is given for angina. In obstetric practice it has been used as an intra-uterine injection when there is retained placenta, and to correct lochial discharge and ulcer of the os. It is given to relieve the sickness of pregnancy, and in hysterical vomiting. It is employed to advantage as a disinfectant and for embalming the dead; also to prevent and cure the cattle plague. And although those enumerated form so long a list, the whole is not exhausted. Allowing this extended and varied use of carbolic acid, the public has been startled with accounts of poisoning by its means, first accidentally and then with suicidal intent. Finally, we have been favoured with statements of the toxical properties of this wonderful drug, and informed of the requisite antidotes.

Carbolic acid is administered by the stomach; it is injected into cavities and applied externally. It was at first used in Paris in the form of a powder made of coal-tar and lime. It is now applied in the form of lotion, being dissolved in water, and it is united with oil or glycerine, and sometimes applied as a plaster in connection with gum shellac, or as a putty; it is also used to form a septic curtain. Again, it is administered by inhalation in the form of spray. We have also carbolated alcohol and carbolated glycerine. The following account of carbolic acid is gleaned from the writings of Calvert. He remarks that carbolic or phenix *alcohol* is the most appropriate name, as it has not the properties of an acid. It was discovered in 1834 by Rüge, but remained in obscurity until 1841, when Laurent examined it and devised a mode of extracting it from certain coal-tar products. But the substance thus obtained was by no means pure, while the process of obtaining it was very complicated. In 1857, Calvert undertook to investigate the matter, and to find a cheap and practical process of obtaining it, inasmuch as it was found capable of producing a variety of colours. Until 1864 he continued to make improvements in producing pure carbolic acid. After this period he endeavoured to draw the attention of the medical profession to the drug as a therapeutical agent. In 1866 he produced carbolic acid deprived of all disagreeable odour and tarry flavour. In this purified condition it became more acceptable as a therapeutical agent, while a less pure and

expensive article was suitable for external applications, and a still coarser substance was used for disinfecting purposes.

Prof. Lister, in 1867, in the columns of the *Lancet*, detailed a course of surgical treatment he had successfully pursued by the aid of this drug. But while he was the means of bringing the subject before the profession in a prominent manner, carbolic acid had been, as we have seen, previously employed as a remedial agent, and its usefulness recognized; it had, moreover, engaged the attention of writers. We learn by a paper from Sir James Simpson that so early as 1842 a Dr. Handyside used creosote in the Edinburgh Infirmary. As a disinfectant, carbolic acid was recommended in 1854; and as a therapeutical agent in 1858. In 1863 Dr. Lemaire published a volume upon phenic acid, and described its employment in surgical and medical diseases, and likewise its action upon low forms of animal and vegetable life, in preventing fermentation, and its effects upon miasma; also its application to the purposes of industry, of hygiene, in sanitary science and in the study of anatomy. In 1865 Dr. Leclot published a work upon the same subject. In this book he states that he first used phenic acid as a local application in 1861, in a case of gangrene; and he adds "Maisonneuve, who saw the case, has not ceased to employ, at the Hotel Dieu, carbolic acid as an habitual dressing. Several of our colleagues already imitate this example, and at this date (1865) carbolic acid is frequently employed in practice in the city and in some hospital services." Still more, Sir J. Simpson informs us that "as a dressing to wounds, different French, German, and Spanish surgeons had used carbolic acid in various civil hospitals," and as well it had been employed in the Italian, Morocco, and Mexican wars. Cruveilhier, Follet, and others had already used it in 1859. At first it was much used for the treatment of bed sores. In 1860, carbolic acid was noticed by the Sydenham Society as a disinfectant. Calvert wrote in 1863 respecting its therapeutic properties, and in 1864 it was used as a disinfectant in the Edinburgh Infirmary. The same year, Dr. Wolfe of Aberdeen used it for surgical purposes; as he states, not to destroy germs, but to prevent organizable matter from passing into a putrescent state. Also in 1864 it was used by Mr. Ure in St. Mary's Hospital, London, in a case of epithelioma.

Having thus glanced at the history of carbolic acid I now come to consider it by the light of medical science as understood to-day. As previously stated, it is to Prof. Lister we are mainly indebted for the exceeding great favour with which the substance is held. Mr. Lister has placed on record very fully the principles upon which he bases his treatment of surgical affections with carbolic acid. At first he claimed to have

made some important new discoveries ; latterly, however, his pretensions are more modest. In his papers he enunciates the doctrine that the air is inhabited by myriads of minute organisms, and that when a wound is made in the external structures of the body, these minute animals swarm into the wound, and by their presence lead to suppuration and decomposition of organizable fluids, and even of tissue itself. According to Lister it is in cases of contused wounds with fracture of bone that the living germs prove most active ; but no wound, not even an incised one, is safe unless protected from the air from the first, or treated with some agent to destroy the vitality of the organisms. The agent he employs is carbolic acid, which is understood to have the power of destroying the lower forms of life. He adduces not a few cases, and others have added to the number, in which the application of carbolic acid seemed to have the effect, in a wonderful degree, of limiting the amount of discharge from the wound, and in preventing pyemia and other forms of blood-poisoning. There can be no question that it is very desirable to limit suppuration in order that healing may the more speedily and effectually take place, and that decomposing animal matter should be prevented from entering the system by absorption. In cases of injuries where any of the solid constituents of the body have been injured, or when the vitality has been impaired ; and when decomposition of such is threatened, with subsequent absorption of the putrescent fluid, carbolic acid, no doubt, has the effect of staying decomposition. But is it by virtue of its power to destroy the germs which have been deposited in the wound ? In other words, is the danger attending crushed wounds due to foreign influence, such as indicated by the germ theory, or is it, rather, simply due to the state of the crushed tissue ? Speaking generally, wounds may be divided into those which are purely incised, where there is no injury to the tissue other than the simple division of its structure, and into those in connection with which there is more or less injury to the tissue which forms the surface of the wound. Now, it is a remarkable fact that it is only in connection with the latter form of wounds that carbolic acid has been found serviceable. It is true, several cases have been recorded in which extensive union by adhesion took place after an operation where carbolic acid dressing was employed ; but surely the fact cannot be ignored that in innumerable instances rapid healing has taken place where no medicated application was used. I take it to be an established fact that Nature has made due provision whereby extraordinary repair of tissue may be accomplished without even the aid of surgical art, except so far as protection is afforded from disturbance and external irritation. My own experience, as well as the experience of many others, goes to show conclu-

sively that incised wounds heal up under favourable circumstances by the unaided powers of nature, without any suppuration, no matter how much the air has come in contact with the exposed wound. Do not the results of plastic surgery place the fact above all questioning, that pure air cannot in any way prevent or interrupt the process of healing by adhesion, if the wound be properly closed, and the parts be retained in a state of *rest* so as to prevent irritation? But at the same time it is admitted that in contused wounds where the tissue is more or less injured, and in which is retained pent up fluid containing lifeless organic material, carbolic acid does prove beneficial. Let us, however, examine the matter and endeavour to understand the *modus operandi*. According to Lister carbolic acid destroys minute germs, which owe their energy to their vitality, and which being suspended in the air, are by it deposited in the wound, and if they were not thus destroyed they would be the means of producing suppuration and decomposition of organic matter. Now, in the various phenomena of life manifested in the living body, we have growth, development, and assimilation, or ordinary repair; and, on the other hand we have decay and death. Tissues wear out and die, whereby ordinary repair is demanded to maintain the body in a state of integrity; or there may be degeneration. Sometimes there is molecular death, or death in a more palpable form, as in sloughing and in gangrene. Now, there are well understood causes of these several forms of death; they are often internal causes, and, I may say, always act independently of atmospheric influence. It is a fact equally well understood that while ordinary decay of tissue is unattended with evil, extensive ulceration and sloughing and gangrene are very likely to be attended with profoundly evil effects, whether the dying structures be in contact with the air or not. Are we to believe that dead organic matter, whether it be the blood of the slaughter house, or the offal of the shambles, the refuse of the kitchen, or the carrion of the plain, owes its decomposition to the influence of minute organisms which live in the air? Cannot organic matter, when lifeless, be resolved into its original chemical elements without the aid of lower forms of organic life? Surely such a doctrine will not be advanced. Then why is it necessary to summon the aid of minute germs to account for degeneration and death and decomposition of organic matter in connection with bruised and lacerated tissues? Is it possible to arrive at any other conclusion than this, that decay, degeneration, or death of organic matter, both in severe injuries and when a whole body is dead, are the result of natural processes entirely independent of influences due to air germs?

Carbolic acid will, when applied to a dead body, to a certain extent

prevent decomposition. Putrescence is by no means so rapid if at all active. The drug undoubtedly has the power to prevent decomposition of dead organic matter. Herein, it is submitted, consist the merits of carbolic acid. When applied to a bruised wound it prevents the decomposition of dead matter, so that absorption of poisonous elements is prevented and pyemia and similar diseases are averted.

But carbolic acid not alone acts as an antiseptic, it seems to have the power to change the character of an ulcer. The products of inflammation are by it decidedly altered. The fibrin poured out becomes, under the influence of this substance, no longer corpuscular, but highly fibrinous, with a tendency to adhesive inflammation: the stronger the application the more decided the effect. Probably, I may say, the more caustic its effect, the more beneficial it proves to be. Perhaps it is by virtue of the caustic properties that benefit is derived. By its use pus-making material is converted into plastic material. Heat is an important element in all forms of inflammatory action. Speaking generally, the greater the heat the more highly is the inflammatory lymph possessed of adhesive properties; while in the absence of heat there is a corresponding tendency to degeneration and death, with decomposition. It is a well known fact that in connection with burns the fibrin possesses much more than ordinary vital properties. Suppuration and scabbing do not quickly take place, inasmuch as the fibrin of the liquor sanguinis is slow to coagulate and become organized, or to degenerate into pus. The pathological condition attending a bruised or lacerated wound is widely different from that belonging to a burn or a scald: in the former there is a low state of vitality, with an absence of heat, and a strong tendency to death, decomposition, or degeneration, with absorption of poisonous elements; in the latter the danger consists in the continued pouring out of fibrinous lymph which fails to take the first step in the process of healing. The presence or absence of heat affects very materially the result of any abnormal condition, as it will any tissue in a natural state. Cold-blooded animals are not so liable to inflammatory action as warm-blooded animals. Heat is constantly generated in the physical system. A part crushed and bruised is incapacitated for a natural development of heat. Taking this view of the question it is submitted that a suppurating wound, where there is an absence of heat, may be converted in an ulcer with a tendency to adhesion. It has occurred, I believe, that a soft chancre has been converted into a hard one,—the Hunterian chancre, by the application of a caustic. In this case an ulcer covered with pus is changed into one with a hard base and indurated edges, with no discharge. Here the pus, producing material is changed into adhesive lymph. The caustic application produces an

increase of heat in the part, with the aforementioned result. If we recognize the foregoing principles we have no difficulty in accounting for the beneficial effects of carbolic acid apart from its antiseptic properties. It is a caustic and increases the heat of the part, whereby the fibrin poured out is endowed with a higher vitality so that degeneration into pus is prevented and decomposition averted.

Taking the foregoing view of the subject let us advance a step further and consider whether it is really necessary to use carbolic acid in such cases or not, that is to say, where there is lifeless organic fluid in a wound and the surrounding tissue. It is the presence of this material which will shortly begin to decompose that is likely to prove disastrous by being absorbed. If, then, this fluid can be removed, if this dead organic matter can be withdrawn, the danger is overcome. The danger of pyemia and other forms of blood poisoning after severe traumatic injuries has led lately to the serious consideration whether it be not possible to prevent such fatal results. While a certain degree of credit is doubtless due to carbolic acid in the way stated, I cannot but think that much of the benefit attending its use has been the result of the disuse of previously employed agents and appliances. There was a time when cauteries and disgusting unguents were freely used in the treatment of all kinds of wounds. But one Digby undertook to treat wounds by sympathy: instead of applying the filthy ointment to the wound he besmeared the instrument which had inflicted the cut, at the same time leaving the wound to the untrammelled operations of nature. Of course his success was well marked. In like manner the carbolic treatment is attended with a more cleanly condition of the parts, and no dead organic matter remains pent up beneath bandages to poison the blood. The mode of applying carbolic acid with water amounts in reality to a frequent and much needed washing of the parts; at the same time the mode of application is such that *rest* of the part, a most important requirement for healing, is secured. The power of nature to heal was long ago demonstrated by Hunter, and her marvellous and varied operations have been more lately explained by Paget and others. It is not alone in incised wounds, but in all forms of injuries, that one may observe the wise arrangements made to restore vitality and repair tissue. However, in severe injuries, art may be enlisted to assist nature. The fluid which occupies the interstices of the bruised part should be allowed to escape—should not be allowed to remain. Many surgeons obtain this end by position, some by judicious pressure, so as to squeeze out the fluid. When in Paris in 1867 I had an opportunity of witnessing the mode adopted by M. Maisonneuve to accomplish the same end, it consists of a bag and tube applied to the wounded part in

which decomposing fluids are pent up, and then by suction to remove the noxious material. He continues to practice this mode with success.

(The following is a summary of the views held by Maisonneuve, "Lifeless organic liquids are the only cause of the untoward state of wounds; the indications, therefore, are to prevent the death of the organic liquids, and to eliminate them when deprived of life. To fulfil the first indication we must prevent the prolonged contact of living fluids with dead organisms, be that latter solid, liquid or gaseous. To fulfil the second, we should eliminate dead fluids by counter openings, irrigations, or drainage, but especially by continuous aspiration or sucking up, which last measure may advantageously replace all those above mentioned.")

Another mode, which is a more heroic one, practiced by Dr. Walter, of Pittsburgh, United States, is to make incisions sufficiently free and numerous to allow all the deleterious fluid to drain off. My own practice, for years, has been to leave open such wounds as would not heal by adhesion, and by position and pressure to rid the part of the injurious fluid, and to secure a free use of water and *ventilation* of the wound. According to my own experience in railroad and other accidents, especially in the treatment of gunshot wounds, of which I had a fair share for several months in the United States Military Hospital at Washington, pure air, instead of being an evil, is a positive benefit, from the time the bruised wound is received until healing is completed. If air be confined by bandages or other appliances, then it becomes offensive from the decomposing elements; but if allowed to circulate freely into the wound it is as salutary as pure air to a typhoid patient. In conclusion, and in support of my statements I will adduce two cases which have somewhat recently occurred in my private practice.

The first case, that of a farmer about sixty-five years of age, who, while driving a waggon heavily laden with sawed lumber, had the load overturned, which fell upon him in such a way as to cause a compound fracture of the external condyle of the femur, with dislocation of the tibia upwards, so as to protrude to a considerable extent through the soft parts. The crushing of the soft parts was very great, and the joint was opened. This occurred in the middle of an unusually warm summer. The parts were replaced and the limb made comfortable in the straight position; cold water was applied from the first and continued so long as there was unnatural heat, after which water not very cold was substituted. Now the most remarkable fact attending this case was the entire absence of suppuration from first to last. Healing rapidly took place, and the man recovered with a perfect limb. Here was a case of severe crushing, and air was constantly circulating around and into the wound, yet not a drop of pus, nor any discharge except serous.

Another case is also that of a farmer about thirty-five years of age. While standing beside a gravel pit he accidentally fell into it, and came with much force upon the end of the handle of a spade, which struck him in the perineum, and was forced forwards, severely bruising the scrotum and integument as far as above Poupart's ligament. There was a great deal of effusion and swelling. After the lapse of two weeks it became apparent that a quantity of fluid was confined in the part. In due time an opening was made, and there escaped a large quantity of highly offensive fluid. It seemed to consist of pus, with a quantity of broken down and decomposing organic matter. Now here was an instance where degeneration and decomposition took place beneath the integument, when no air had been present. But mark the end of the case. As soon as the abscess was emptied, the contents of which was known by its bloody and offensive character, the discharge ceased, being about 24 hours after the opening was made. In making the opening no step was taken to keep away the air; on the contrary, a tolerably free incision was made; and every time the poultice was changed, the air was in contact with the part. And yet, so soon as the dead and decomposing matter had escaped, the walls of the abscess coalesced and united by adhesion, very much to my surprise I must say, and in two days' time the patient was well; the part was perfectly sound. Surely this is reversing the matter as presented by Prof. Lister. When no air could come, with its living germs, there was degeneration and death and decomposition; but, so soon as an opening was made, whereby air might enter, degeneration and death entirely ceased, and the most speedy form of healing followed. I believe that Prof. Lister of late has very much reduced the strength of the carbolic lotion, and found it more preferable to a strong solution, at least in certain cases. I would humbly submit that if he would still further dilute until the amount of carbolic acid is quite infinitesimal, but continue faithfully to apply the *wash* (for it is the washing that does good) he will find even greater success.

Church Street, Toronto, 8th December, 1869.

The use of an Amalgam of Mercury and other Metals in filling carious Teeth. BY H. M. BOWKER, ESQ., Montreal.

As the object of your journal is to establish a sound system of treatment, and to expose all malpractice, whether in medicine proper, surgery, or dentistry, I feel it my duty to ask you to consider a practice now almost

universally adopted among dentists throughout the Dominion of Canada. I allude to the system of filling teeth with a substance known as "mineral paste."

This compound of mercury, with other metals, has many names given to it, such as *Royal Mineral Succedaneum*, *Enamel Cement*, *Bone Paste*, *Diamond Cement*, *Lithodion*, and many others changing with the fancy and policy of the operator. Under whatever name it may appear, it has the same base article, mercury, for its principal ingredient. I know of no practice so destitute of merit, but which, at the same time, appears to have more apparent advantages than that of filling teeth with mineral paste; especially to those who are ignorant of its composition and tendencies. It is well known that mineral paste in the mouth of some, patients is productive of not only severe local disease, but the constitutional effect is such as to endanger even life. I need not refer you to the principle laid down by every chemical authority that the tendency of metals to oxydation is much increased by being alloyed. It is a question with the highest dental as well as medical authorities, whether the presence of an equal quantity of free mercury would be more pernicious than the presence of amalgam and silver, on account of the highly acid state of the saliva, not only in active disease, but in some instances where there is but slight apparent deviation, from health. It is possible that there may be persons who can, with impunity, allow this "mineral paste" to remain in the mouth for a time; but there are others who cannot do so even for a few days, without leading to swelling of the glands about the tongue, throat, and neck. Neuralgia about the jaws, face and temples, even salivation and paralysis, have been produced in systems highly susceptible to the influence of mercury; for such is the difference in the idiosyncrasy of individuals, that a grain of mercury will with some, cause severe local as well as constitutional effects, whereas, with others, it requires many grains to affect them at all. I have frequently removed fillings of this "mineral paste" weighing twenty, thirty, and even forty grains, more than one half of which was mercury.

We must bear in mind that mercury and silver unite in but one proportion, and that any excess of the mercury is in a free state. When the mixture is subjected to the highest pressure in order to remove the free mercury, the amalgam then contains a preparation of sixty-four parts of mercury to thirty-six parts of silver. Such being the case, it becomes a question of great importance to know whether the oxide formed by this compound does not unite with some one of the acids or the fluids of the stomach, or of the saliva, when the system is in certain diseased conditions and form a salt of mercury which, in its mildest

form, is nothing more or less than calomel. The result of the union would just as likely be corrosive sublimate as calomel.

Soon after the formation of the American Society of Dental Surgeons, which was composed of men who, for their scientific attainments and practical skill, were unsurpassed, a resolution was unanimously carried to the effect that "this Society regard the use of 'mineral paste' for plugging carious teeth as malpractice." A similar resolution was passed by the Medical Society of New York.

I know of many patients who have been treated by their physicians for certain diseases caused by amalgam plugs in the mouth, when neither the physician nor the patient suspected the cause. Many cases of what are called "Spontaneous Salivation," have been produced, and are the legitimate result of the presence of amalgam plugs in the teeth, for as soon as the mouth is relieved of the pernicious compound, all the unfavorable symptoms pass away, therefore, no further doubt can exist respecting the cause of the malady.

The question is often and naturally asked why this amalgam is so generally used by a certain class of dentists.

The answer can be found in one or all of the following explanations:

- 1st. The cheapness of the material.
- 2nd. The ease and facility with which it is used; for it can be put into the most difficult cavities with as much ease as so much putty or wax.
- 3rd. It makes up for the want of skill and ability to use something better.
- 4th. From ignorance or the want of honesty.

Were it not for these objections and others which might be given, I would unhesitatingly make use of the "paste" in my own practice, for by so doing, I should save labour, time, money, and derive as much profit and advantage as those who persist in using it. But if it can be proved that this mineral paste is constitutionally injurious, in any single case, its use should be abandoned by all who take an interest in the standing of their profession, or have any regard for their reputation.

It is with much reluctance that I appear as the expositor of the abuses of dentistry; but were I to remain silent, I should consider it would be a violation both of duty and conscience, and when I see an institution, such as exists in Toronto, with the imposing title of the "Royal College of Dental Surgeons," encouraging the use of such a pernicious compound, and that the same may be said of the "Dental Association of Quebec," I think it time that the public should clearly understand the risk the patient runs by the use of it. As I have remarked, the highest dental and medical authorities, both European and American, have condemned the use of amalgam, in any form whatever, for filling

tæth, as malpractice. Yet in spite of this positive dictum, the Dental Societies of Canada, who put themselves forward as the guardians and representatives of the profession in the Dominion, not only advocate but vindicate its use.

The question in its effects becomes medical, and clearly within the sphere of the journal under your direction; therefore, I respectfully ask the assistance of the leading members of the faculty to discountenance what has been proved to be a most pernicious practice.

22 Beaver Hall Terrace, December, 1869.

Notes on the Principles of Population. Montreal compared with London, Glasgow and Manchester. By ANDREW A. WATT, Esq., Montreal.

(Continued from page 261.)

THE VITAL STATISTICS OF MONTREAL. BY PHILIP F. CARPENTER, B.A., Ph.D.,
THE YEAR BOOK OF CANADA.

OF THE POPULATION OF MONTREAL.—Dr. Carpenter, in 1859, wrote that he was unable to find any more accurate returns of the population than he gave, beginning with the census of 1851 (should be 1852) and ending with 1858.

In the years given in his table, the births are stated to have exceeded the burials in the eight years by 7494, but there is no allowance whatever for the increase by immigration. Had he referred to the *Canadian Almanac* for 1854, he would have found that a Census of the city was taken in 1844, when the population was 44093, and again in 1852 when it was 57715, exhibiting an increase of nearly 3·5 per cent., per annum. Had he continued to estimate the increase at the same rate, the population in 1858 would have appeared to have been 71,000 instead of 63714 as he represented, and had he consulted the *Canada Directory* he would have found that the population for that year was estimated at 75,000. The Census of January, 1861, shows that the population in 1858 must have been about 78,000.

In 1861, the population was 90323

In 1852, the population was 57715

Increase in 9 years 56·5 per cent..... 32608 or at the
rate of 5·1 per cent. per annum.

In the report of the Sanitary Association for 1868, the rate of increase is stated to be only 4·7 per cent., at which rate the tables are calculated, so that there is an error of 0·4 per cent. per annum, amounting to 5853 in January, 1868.

Having ascertained what the population was, it will naturally be supposed that Dr. Carpenter would adhere to the same figures; but in

1867 he has one rate (table 4) for dealing with the deaths according to the Clergy returns, and another rate (table 7) for dealing with the Cemetery returns, so that Montreal had in 1865, a population of 103363, or 106375, and a rate of mortality of 3.61 or 3.78 per cent. according to the fancy of the reader.

He does not even carry on the different rates of increase in tables 4 and 7. In the third essay, table 4 begins with 1865, population 103363; the population of 1866 is increased by 8011, but only 5234 is added to give that of 1867. The truth is he had become bewildered; and in table 4 adopted the figures of table 7, on and after 1866. He had been trying to keep them separate for the purpose of making what he calls comparisons: The confusion may be imagined.

OF THE BAPTISMS IN MONTREAL—It is unnecessary to examine the number of the baptisms previous to the returns given in table 4, in the second and third essays.

When the writer called at the office of the Prothonotary, a short time ago, and said there must be an error in the return of marriages and baptisms for 1864, he was assured that such was not the case. As soon as he had leisure, he called and examined the Registers, and found that the returns of St. Patrick's Church had been omitted when making the Abstract which is always accessible to the public. The addition to be made is 162 marriages and 1062 baptisms. The figures were corrected in the table reprinted in the *Daily News* of 15th September, but the paper was issued before some immaterial corrections were made in the body of the article. It must not be said that Dr. Carpenter should have observed this error in the returns; for although he wrote in 1859 that "The exact connection between those sanitary conditions over which man has control, and the actual number of deaths in any town or district, is no longer a matter of hypothesis," it is evident that he does not understand what he has written, because, in the tables he has prepared, he states that, in the rural districts of England the deaths were at the rate of 19 in the 1000, and that the same race in Upper Canada died at the rate of only 7.5 in the 1000. It may also be said in his favour, that although he thinks it is no longer a matter of hypothesis as to the number of men who die, that it may be a matter of hypothesis as to the number who are born.

In table 4, (second essay) the number of baptisms in 1865 is 4339, instead of 5543, but an error of 1204 in one year is of little moment with Dr. Carpenter. It is not a misprint. In the third essay the correct figures are given, but the previous mistake and the consequent errors in the addition of births, and the excess of births over deaths are not noticed.

The baptisms in 1868 should be 5160 not 5060, and then he should have added, that eight Clergymen, who in 1867 registered 403 baptisms

had not sent in their returns. But, Dr. Carpenter, whatever may be the nature of the returns, is equally searching in his analysis and cogent in his reasoning. If the defaulting Clergymen registered 403 baptisms in 1868, then his errors amount to 1707, which with the number omitted by the Prothonotary, is 2769, or more than one fifth of the baptisms in the three years, according to Dr. Carpenter's figures.

OF THE BURIALS IN MONTREAL—It is satisfactory to be able to state that the number of burials is correct, according to the Cemetery returns given in table 7.

On page 8, of the second essay, it is said that "The returns by the Clergy of the funeral services, from which this table (4) is constructed, were the most accurate known at the time the former article was written" in 1859. It is not creditable to Dr. Carpenter's research and love of accuracy to find that, in table 7 he gives the number of interments since 1855 according to the Cemetery returns, and to have to state that, these are still entered in the same book as in 1854, and that they were regularly published and commented on, by nearly all the newspapers of the city, since the commencement of the returns.

In consequence of Dr. Carpenter keeping two rates of population and of deaths, he made a slip which has greatly marred the thrilling effect of his statement that, in "the year of the mother's woe" 1864, the deaths of the children under 12 years, without any known special predisposing cause, "*exceeded even the abnormal number of our births by 282*" (second essay page 20 and table 4). The figures are from the Clergy returns, but he shows in table 8, that these are 395 less than the total deaths, so that, he intended to have written, that in 1864 the deaths of children, under 12 years, exceeded the births by 577. But,

According to table 4 the births were 4024

The interments of still born and children under 12 (table 7) were.. 3536

The births exceeded the deaths of children by 488

Add error in births in abstract in Prothonotary's Office..... 1062

So that, the baptisms exceeded the number of still born and deaths

under 12 years by 1550.

Dr. Carpenter's figures show that, the births exceeded the deaths of children by 488, and he wrote that the deaths exceeded the births by 282, so that his error is 770, irrespective of the omission of the 1062 baptisms.

What will the citizens think of the negligence of the Sanitary Association which, in its annual report adopted 28th March, 1867, makes the following statement. "In 1864 the long accumulation of fever-food in the vast cess pool of the lower city broke out in open pestilence, and

carried off 282 (577) more children than had been born that year, and that these facts are set forth and proved in a paper on the vital statistics of Montreal, published in the Canadian Naturalist." This society presented a Memorial to the Mayor, Aldermen and Councillors of the city, in which all the above manifest and gigantic untruths, as our essayist would call them, are embodied. A copy of Dr. Carpenter's essay of 1867 accompanied the Memorial.

OF THE COMPARISONS AND GENERAL STATEMENTS OF DR. CARPENTER.

In 1859 Dr. Carpenter constructed a table in which it is shown ; that the deaths

In forty large English towns were	26 per 1000, or 1 in	38 of pop.
In English rural districts.....	19 " "	1 in 53 "
In Five U. Canadian towns, average	14 " "	1 in 71 "
In all Upper Canada.....	8 " "	1 in 125 "

And then he wrote: " Still each of the Upper Canadian cities, where deaths at least are recorded, shows so healthy a condition, that the mortality of the country is probably not much greater than that recorded." There is a limit to health and life even in Upper Canada. When perfection is well nigh reached, it is not possible to become much better ; so that, Dr. Carpenter should have written: As the Upper Canadian cities are apparently so much more healthy, than even the rural districts of England, it is certain that the country cannot be much more healthy. Probably a better idea of the absurdity of the statement will be acquired by determining the average age of the population, that could give the above rates of mortality. For convenience refer to the Royal Insurance Company's Almanac for 1869. On page 72, there is a table showing the numbers out of which one will die. The experience of seventeen English Insurance Companies, which is nearly the same as the Carlisle table, shows that a death rate

of 1 in 38 represents a whole population	58 years of age.
" 1 in 53 " " "	53 " "
" 1 in 71 " " "	48 " "
" 1 in 125 " " "	27 " "

To attain such a condition not a single birth could be allowed, because it would increase the rate of mortality ; and as the deaths increase with age, such a low rate, could not by any possibility be continued, unless all above the average age were replaced, each year, by more valuable lives.

Having in his first essay compared Montreal with the adjacent country, he continues: " Montreal was not the only city which was scourged by cholera. Vaudreuil and Lachine, in its immediate vicinity, shared the plague, &c." In 1852 Lachine had a population of 1075, and

Vaudreuil 443! (See Canadian Almanac for 1853, page 79). This is too much even for notice.

On the same page he discourses on immigration. "The principal way," he says, "in which immigrants affect the returns is by increasing the population. This will probably lessen the average of later years." As the population has been increased the death-rate must appear to have been lessened, and the apparent decrease of mortality will take place at once (presuming the immigrants to be above 10 years), and become less from year to year, as their lives mature quickly with the advance of age. (See Carlisle table, or English Insurance Company's Experience in Almanac referred to). "Then he wrote "The tide of immigration affected Toronto fully as much as Montreal; yet its mortality is *considerably less than half* that of its older sister." If Toronto appeared to be as stated, it was chiefly in consequence of the high tide of immigration. Referring to Montreal he wrote: "As an offset to the increase of population (he meant to say, the increase of deaths from immigration;) it may be necessary to say, that, in each year but one, several religious bodies sent in no returns" of deaths. So, Dr. Carpenter thinks that the immigrants do not make the city appear more healthy. Is that the reason why he added only the excess of births over deaths to the population from 1851 to 1858?

The subject of immigration is very simple. For example:

In January, 1861, the population was	90323
In " 1852, do do	57715
	<u>32608</u>
The baptisms during the 9 years were.....	32677
The deaths were (Clergy returns for 1852-1854, and cemetery returns for other years, Dr. Carpenter's figures)	<u>23722</u>
The baptisms added 15.52 per cent., or	8955
Immigration " 40.98 per cent., or	<u>23653</u>
Increase in 9 years 56.50, or 5.1 per cent. per annum.....	<u>32608</u>

As all the births were not registered, suppose the number of immigrants to have been 20000 in 9 years, and that their average age was 20. Suppose they had been born in the city, how many births would have been required to have produced the 20000?

The Carlisle table shows that only 613 are alive at the end of 19 years, out of 1000 born at the same time, if 613 required 1000 births, 20000 would have required.	32627
Alive at the end of 19 years	<u>20000</u>
So that, in 19 years, Montreal would have buried	12627

of its population, in addition to the number who died in the city. The rate of mortality must therefore have appeared to be less than it really was, in consequence of the immigration, because the number of immigrants has been added to the population among whom the deaths are divided. In other words, every country that contributed an immigrant, bore its proportion of the loss of the 12627 deaths, and Montreal had a free gift of 20000 persons. But the mere addition of the numbers is not the whole of the immediate apparent gain. The Carlisle table shows that the rate of mortality in the 20th year is only 0.65 per cent. so that of the 20000 immigrants only 130 would have died in that year. Dr. Carpenter's table shows that the population of Montreal was dying at the rate of 3.6 per cent, therefore 20000 returned 720 deaths; or out of 3611 citizens, as many died as would have died of 20000 immigrants, 20 years of age.

Suppose that the 20000 had been added to the population in one year, 1852, instead of being divided among nine years, and that they had remained unmarried; their effect on the death rate would have been an addition of only one sixteenth; while they added more than one-third to the population. The result would have been, that the rate of one mortality would have *appeared* to have been only 2.84, instead of 3.6 per cent in 1852.

It may be consolatory for Dr. Carpenter to know, that the *Times* of 2d February 1867, commenting on the returns of the Registrar General says: "The death rate of the whole United Kingdom is less than that of England and Wales, a necessary consequence of the extensive immigration from Ireland and Scotland, whether into England or to other countries. A country continually deserted by its rising population will have fewer deaths, by having fewer to die, while the country, or province, or town that receives them will have that extra proportion contributing to its deaths." It is scarcely possible to believe that any person would have written such nonsense, and that it would have been published as a leader in the *Times*. The writer *must have been estimating the rate of mortality at so many per acre*, and not according to the number of persons among whom the deaths occurred. As England does not lose so large a proportionate number by emigration, as the other divisions of the Kingdom, they are even more healthy, than England, than they seem to be. If the lessened death rate of the United Kingdom arose from the cause assigned, how would the emigration to England, affect the death rate of the United Kingdom, within whose bounds the people still were? And, why should the same result follow from emigration, whether into England or to other countries?

As immigration lessens the apparent rate of mortality, Montreal, should therefore, have seemed to be more healthy than cities which did not receive so large a proportion of immigrants.

The number of births must now be taken into account. Suppose that on an island in the St. Lawrence, the number of births is double that on an island in the Thames. Sooner or later all must die. So that, at the end of a generation, twice the number must have died, as certainly as if the whole race had become extinct. Therefore double the number must die every day on the island in the St. Lawrence, because they are born; not because they are more unhealthy. *It follows therefore, that to ascertain the relative health of the inhabitants of the two islands, allowance must be made for the difference in birth-rate, and also for the difference in increase by immigration. Having done this, the remaining difference in the rate of mortality will express the relative health of the people.*

Dr. Carpenter has not observed the operation of these causes; and till the articles by the writer appeared in the *Witness*, no journal had noticed and calculated on them when writing of the apparent health of different populations. Hence it is that the *Pall Mall Gazette* in February 1866, having quoted the returns of the Registrar General, showing that the deaths for the year had been as follows; for every 1000 persons living in Birmingham 24, London 26, Edinburgh 27, Glasgow 30, Manchester 32, and Liverpool 42, asks "what that really means is worth consideration even by the most cursory reader. If life is worth anything it would not be well to account" for the difference.

This is not the place to enter into an examination of the returns but that they do not express the relative health of the cities, must be evident from a moment's consideration of what has been stated as to the effect of immigration, of the birth-rate, and of the known rates of increase of the different cities. According to the Census of 1841, the increase in the previous ten years was in Liverpool 39, Glasgow 36; Manchester 30, Birmingham 29, London 18, and Edinburgh only 3 per cent.* The birth rate was also very different; in London it is now less than 3, and in Glasgow it is more than 4 per cent. The fact that life is governed by laws, equally as certain as those which govern the atmosphere, is enough to enable us to say that the returns do not express the truth. What would be thought if the Board of Trade were to telegraph, that the barometer indicated at Birmingham, 30 inches, London 28, Glasgow 24, and Liverpool 17? *When the Meteorologist corrects and reduces the indications of the barometer to a temperature of 32° at sea level, he*

* Companion to the Almanac 1844.

performs an operation analogous to what must be done with the observations of the Registrar General, to render them intelligible and of any value.

Will the "*Pall Mall Gazette*," apply the directions given and tell the result?

Dr. Carpenter having referred, in his second essay, to the well-known errors in the Census of Quebec and Montreal, wrote: "It is hard to place any reliance on returns of places of less importance, least of all on country districts." On page 3: "The returns may be regarded (subject to exceptions) as sufficiently correct to show the comparative mortalities of cities and adjacent counties, and to compare these with the ratios worked out from the preceding Census." And on page 8, "It is probable that these country returns are more accurate than those of the city." Why the change? and how comes it, that returns which contain "manifest and gigantic untruths" of the largest cities of British America are good for anything?

Because a greater number of deaths occur in Britain in winter than in summer, he says, "It would therefore be naturally expected that in the extreme cold of a Lower Canadian winter, the death-rate would rise proportionally, but it is not so." Would it not be natural to inquire: When do the greatest number of deaths occur in North America? Dr. Carpenter's expectations are based on the exceptional condition of Britain, and it will show the limited range of his reading and thought on the subject to quote from a popular magazine, "In Britain, deaths are fewest in the summer quarter or hot season, when the mean temperature is highest and most numerous in the winter or coldest quarter. In these respects, Britain differs from other countries, where the summer heats increase the mortality, and even in this country, when the summer heats are above the average, as in 1857, an increased mortality occurs, especially if the weather be dry, giving rise to severe bowel complaints, as dysentery, diarrhoea, cholera, &c." (Chambers' Information for the People. Article; Social Statistics).

On page 18, (second essay) on the authority of the census, regarding which on page 2, he says, "it is hard to place any reliance," he states that the deaths in the first year of being are nearly twice as great as in Liverpool. In an article which appeared in the *Witness* reprinted in the *Daily News* of 15th September, the numbers living at certain specified ages in Montreal, London, Glasgow and Manchester, are compared. It is also stated, on the authority of the register of baptisms, that the number living in Montreal under one year, must have been 808, more than the number enumerated in the Census. Still, the Census gave 15196 as the number living in Montreal under 5 years, against 10746, or one-half more

than the number living in London, in the same number of inhabitants. Supposing the children to have been equally healthy, the deaths in Montreal must have been one-half more than the deaths in London. In another table (3) which appeared in the same papers, the rate of mortality which prevailed in London in the 4 years, ending with 1841, is applied to the numbers living at the specified ages in Montreal, in 1861, and it is thus shown, that the deaths at the London rate would have exceeded the total deaths in Montreal.

Dr. Carpenter's third essay is entitled, "On some of the causes of the excessive mortality of young children in the city of Montreal." On page 19, of the second essay, there is an extract from the Sanitary Report, presented to the Imperial Parliament in 1858, in which it is stated that "The lives of young children furnish a *very sensitive test of sanitary circumstances*. That those places where infants are most apt to die, are necessarily the places where survivors are most apt to be sickly; and where if they struggle through a scrofulous childhood to realize an abortive puberty, *they beget a sicklier brood than themselves*. A high local mortality of children, must almost necessarily denote a *high local prevalence of those causes which determine a degeneration of race*." Then Dr. Carpenter adds, "These words are prompted by long experience **** how awful must be their truth in this city where the rate is *the highest yet presented*." In the report of the Montreal Sanitary Association for 1867, it is said, "The unhealthy influences which kill children, *sicken the adults*." If the reader can be surprised by anything, he will be by Dr. Carpenter's declaration in the third essay. Having presented what he calls an "analysis of children's deaths in Montreal for the year 1867," he says, "It is evident, therefore, that the children from 5 years upward are remarkably healthy in this city." What about sickening the adults; the sicklier brood; and degeneration of race? Dr. Carpenter seems to have studied the Prophecies of Isaiah, with the same unprofitable result as his study of social statistics; refer to his first essay, and also to table 21 in the third. In the latter he says, that Isaiah prophecied, that in Montreal, there would be no deaths of children under 12 years of age in the year 1867. The prophecy does not refer to the present time, for the Word errs not. He should have consulted Job, who asks, "Who can bring a clean thing out of an unclean?"

In the articles which appeared in the *Witness*, it is stated, "*That the birth-rate is the certain controlling element of the death-rate; That wherever the ratio of births to population is the highest, there also the mortality is greatest; and things being equal, will be in proportion to the birth-rate.*"

The following table, constructed from the returns of the English Registrar-General, is submitted in proof of the proposition. If the registration had been complete, the estimated would have been more nearly in accordance with the actual rates.

TABLE IV.

Showing the average number of Births and Deaths, registered in England, to 100,000 females living, according to the mean of the 3 years ending 30th June, 1841.

5.655 per cent of Births in the South-Eastern Division gave 1.809 per cent of Deaths, therefore 0.837 per cent of Births in York should have given 2.187 per cent of deaths, &c.

DIVISIONS.	Rate per cent of Births.	Actual Rate per cent of Deaths.	Proportionate Rate per cent of Deaths.	Relative health of Divisions.	
				Difference of Deaths from proportionate rate.	
				Above.	Under.
Metropolitan (London).....	5.553	2.339	1.776	.563	
do do †.....	5.553	2.339	1.612	.727	
South Eastern, purely agricultural.....	5.655	1.809	Standard	of Comparison.	.021
South Western.....	5.690	1.799	1.820	
Eastern.....	5.867	1.981	1.869	.112	
Welsh.....	5.869	1.935	1.877	.058	
South Midland.....	6.286	2.061	2.011	.050	
Western.....	6.315	2.074	2.020	.054	
Northern.....	6.447	2.042	2.062020
North Midland.....	6.486	2.123	2.075	.048	
York.....	6.837	2.222	2.187	.035	
North Western*.....	7.095	2.670	2.270	.400	
ENGLAND.....	6.220	2.113	1.990	.123	

This table shows that under an imperfect registration, without regard to the nature of the locality or the prevalence of different kinds of disease; an estimate of the number of deaths, based on the standard of a purely agricultural division, would err by only 123 on a population of 100,000 of all England. Excluding the Metropolis and the North-Western Division, which may be called a city, the difference in the number of deaths among a population of 100,000 ranges from 21 under, to 112 above the calculated number; and shows an average of only 37 above the estimate. If the South Eastern and North Western Divisions were not affected by the migration of the people, and if London gained by immigration the same proportion of population in the above years, as in the 10 years included in the Census of 1861; and without taking into account the greater value of the lives of the immigrants, (an element

* Scarletina was epidemic in Lancashire in 1840, and during the three years caused 26,640 deaths in England; of which the North Western division returned 5205 or nearly one-fifth. This division includes Manchester, Liverpool, Preston, and 15 other towns whose population was over 5000, more than half of the population was living in these towns.

† Corrected for an increase by immigration of 7.9 per cent in 10 years. Ages of immigrants not taken into account.

in the calculation which may be balanced by the greater number of births among the immigrants) then the number of deaths in London was greater than the number in the South Eastern and North Western Divisions, and all England, by 727, 327 and 604 in each 100,000 of the population. Dr. Letheby in his annual report for the year 1859, for the City of London, says that the death-rate was below the average and only 1 per 1000 higher than all England. But no allowance is made for the low birth-rate and immigration. The above table shows that the deaths in the Metropolis were in excess of all England by 6 per 1000. If a change has taken place in the seeming rate of mortality, it will have been caused, chiefly, by a decline in the death rate, and an increase of immigrants.

If the birth rate gives the death rate for the whole of life, it just give the rate for any part of it.

Let us test the proposition, by the facts recorded in Montreal where the deaths of children are said to be fearfully excessive. Dr. Letheby, in his report for 1859, says: "The mortality of children in the first year of their age, has been very severe, for it has amounted to nearly one fifth of all the births; in fact, out of 3,260 children born in the year, 608 have died. This is somewhat more than the average (3,504 and 574) for the last 10 years. **** Dark, however, as this picture may seem to be, it is far lighter than it once was, and is brighter than that which is still drawn of the chief towns of England* and the large cities of Europe." From the report it appears that *the birth-rate is only about 2.5 per cent.*, so that the deaths are few, not because the people are so very healthy, and the city so very clean, but because the births are few. The writer has not all the figures necessary to make a correct estimate, but the following are sufficient to illustrate the principle. In the Metropolis in the 3 years ending with June, 1841, the birth-rate was 2.966 per cent., to an equal number of males and females. Dr. Letheby shows that the death-rate in the first year, on an average of 10000, was 16.381 per cent. *of the births.* The number of births in Montreal is not known; *but the baptisms* during 14 years were 4.882 per cent. No deduction will be made for the large number of illegitimate children sent to the city (about one-fifth per cent. of the population) *who though baptised are of very little value, in this estimate, compared with legitimate children.* If in London 2.966 per cent. of births gave 16.381 per cent. of that number of deaths in the 1st year; 4.882 per cent. of baptisms in Montreal, should give 26.963 per cent. of deaths. Observe that the rate for Montreal is less than it should be, and that the lessened rate of mortality is applied to the smaller number: the baptisms.

* See table IV and page 29.

The baptisms for the year ending 4th July, 1858, (average of 1857 and 1858) were	3801
In 1863-66, 4 years.	21175
Number of baptisms in 5 years	<u>24976</u>

The deaths in the first year at 26·963 per cent
on 24976 would be 6734

According to M. Quetelet, 1 tenth of all the
children born alive in Belgium (town and coun-
try) die within one month. *Suppose all the
Catholic children in Montreal, to have been bap-
tised,* In 1861 the Protestants were 27·5 per cent of
the population, but the registration of baptisms
for 11 years, (1858-1868) shows that they
recorded only about 20 per cent. of the whole
number.* The number of Protestant children
baptised in above years was, say 4995. The
average age at baptism is about 3 months. But
add to estimate of deaths only $\frac{1}{3}$ of the baptisms
($\frac{1}{3}$ th of the births), as the number of Protestant
children born alive appearing in the list of
interred and not in the register of baptisms 624

The proportionate number of deaths in Montreal of
infants under 12 months, according to the
London rate would be 7358
or 29·460 per cent. on baptisms, representing a
birth-rate of 5·334 per cent. of children born alive.

The burials of still-born children and infants un-
der 1 year, in the above years were 8208

The total burials were in 1858 (average of 1857
and 1858) 2500
In 1863-1866 15942

Total burials in 5 years 18442

The average number of still-born, interred in the
Protestant Cemetery, has been shown to be 7·866
per cent. on the burials, and this is certainly
below the average for the whole city.

Deduct from burials the still-born at above rate 1452

The deaths in Montreal in 5 years, when the total
mortality was ·03 per cent. above the average of
14 years, was only 27 per cent. on baptisms, or 6756

Being less than the proportionate average of the
Metropolis by 602
or 120 per annum, therefore it is that the
children from 5 years upwards are remarkably healthy.

* See note page 326.

The above years it will be noticed include the very unhealthy year 1864. Dr. Carpenter on page 17, of second essay, says the death rate in the first year of life, on the average of 12 years was 43·41 per cent. on the living. In the third essay, page 10, he says the rate in 1867 was 39·99 and on pages 17 and 18, that it was 36·8 per cent. Which is the correct rate? And how comes it that while in the 12 years, the deaths under 1 year were 43·41 per cent. of the living at that age, and the deaths under 12 years only 2·5 per cent. on all the living; that in 1867, when the deaths under 1 year, were only 36·8 per cent., that the deaths under 12 years, should have increased to 2·73 per cent.: when the children from 5 years upward were remarkably healthy?

The English Registrar-General's returns (Table 4) and the comparison of Montreal with London, demonstrate that in the ordinary course of nature, an increase in the birth rate is accompanied by exactly the same rate of increase in the death rate, so that *if the inquiry be limited to the first year of life*, an increase of 100 per cent. of births will give an increase of 400 per cent. of deaths. The following table is constructed on the rates observed in London.

TABLE V.

Table showing the approximate proportionate rate per cent. of deaths in the first year of life, and on the whole population according to the London averages. It is presumed that, to the whole population the births were 2·954, and the deaths 2·676 per cent.: The increase by immigration was 73·8 per cent. of the birth-rate of increase in the 10 years ending in 1861.

"In London in 1861 more than one-half of the resident population were born elsewhere." Census of the British Empire by C. A. Coke, page 76.

Birth-rate per cent.	Death-rate per cent. in 1st year of life.	Death-rate per cent. to population.
1	5·545	0·906
2	11·091	1·811
3	16·636	2·717
4	22·181	3·623
5	27·726	4·528
6	33·272	5·434

This law of nature shows, that the rate of mortality of different places cannot be compared, unless the birth-rate is taken as the standard. Many children die within a few hours of birth, so that no Census ever can exhibit the same number living under one year, as were born during the year. It is customary to compare the number of deaths under five years, and one year, why not under one month, and why not with the

number born? Endless discussions have, in consequence, arisen regarding the health of different cities; of course, the cities having the lowest birth-rate, almost invariably, had the best of the argument. For instance, the Registrar-General of Scotland, in his report of the eight principal towns for 1859, which was an unusually healthy year, having given the number of deaths under five years, says; "Let Edinburgh and Glasgow be taken as examples. The births in Glasgow are in proportion to the total population, nearly an exact fourth (he should have said one third) higher than in Edinburgh. Supposing then, that it were even granted, that the infantile deaths in Glasgow should be a fourth (third) greater in consequence of this excess, which is a most extravagant supposition, this would fail to account for the fact that the infantile deaths there are almost the double of the Edinburgh rate, &c., &c." The birth-rate in Glasgow, was 410, and in Edinburgh 301 to each 10000 of the population. According to table 5, the deaths in the first year should have been, in Glasgow 93, and in Edinburgh 50, to each 10,000, or nearly double, which the Registrar said it should not be. The total deaths to the 10000 in Edinburgh were 203. If 301 births gave 203 deaths, then 410 births in Glasgow should have given 276.5 deaths. The deaths were 278, so that the cities were equally healthy.

In the *Glasgow Herald* of 9th January, 1867, there is a letter from the late Lord Provost, of Glasgow, Mr. John Blackie, Jun., in which "the sacrifice of life" is used as an argument for entering into certain extensive, and doubtless much needed improvements in the city. A note from the Registrar General of England, Major George Graham, is quoted, showing that the average rate of mortality in 1865 and 1866, was in London 2.545, in Edinburgh 2.773, and in Glasgow 3.123 per cent.; but there is nothing said as to the birth-rate and the proportionate number alive at different ages. Table 5 shows, that the birth-rate in London should have been 2.80 per cent. If the births in Edinburgh were 3.01 per cent., then its rate of mortality was above the table rate, by .05 per cent., but this apparent excess is probably more than balanced by the loss by emigration, as the City is not increasing at the rate of births over deaths. According to the City Chamberlain of Glasgow, Mr. West Watson, the birth-rate in the above years was 4.17 per cent.; and the increase by immigration for many years, nearly equal to that gained by natural increase. The death-rate for Glasgow is (table 5)..... 3.777
 But Glasgow gained by immigration about 1.45 per cent. on its increase by births more than London, which must be deducted from the apparent rate, or say..... 5.47

The rate in Glasgow was..... 3.123

Glasgow rate of mortality, less than London rate by..... .107

Mr. Blackie says that, in one of the districts of Glasgow, Blythswood, the average length of life is 50 years; and in another Anderston, only 38 years. The statistics are not given, but from the City Chamberlain's reports for the three years 1855-1857, The average birth and death-rates for the districts were respectively 2.742, 1.774 and 4.915, 2.885. The proportionate death-rate for Anderston was therefore 3.179; according to the proportion between births and deaths in Blythswood, so that Anderston was more healthy than Blythswood by .294 per cent. In these years the rates for the whole city were, births 3.953, deaths 2.841 per cent. The total mortality was therefore only .233 over the ratio of Blythswood.

Mr. Blackie, in writing of the average length of life, has made a mistake which if at variance with the argument would not be worthy of notice, but it is not a mere slip. He thinks that the rate of mortality expresses the average duration of life; which it would do, were the births and deaths equal, but the average is much less in a community which is increasing rapidly by births. The mean term of life must be about 37 years in Blythswood, 21 in Anderston, 26 in Glasgow, and 33 in England. It is longest in Blythswood simply because that district has the lowest birth-rate. The average length of life must be short, and of course, the rate of mortality must be high, in a rapidly increasing population, but so long as the rates are not relatively higher than the average, the population must be healthy and vigorous.

The fallacy of estimating the health of a people by the rate of mortality, without comparing it with the birth rate, is clearly shown in Porter's *Progress of the Nation* (Edition, 1851 page 18.) Having stated that the population of the United Kingdom and France had increased from a lessened death-rate, and not from an increase in the birth-rate, which had in fact declined, it is said "In France, the births, which in 1817 were in the proportion of 1 in 31, were in 1834, in the proportion of 1 in 33.66; while the deaths, which in 1817 were 1 in 39.125, were diminished in 1834 to 1 in 41." The mortality in 1834 should have been only 1 in 42.489 according to the relative proportion of 1817, so that the death-rate had largely increased. Had the French *continued to move in the same direction and at the same ratio*, they would have become extinct in a few generations. In the article on "Population" from which the above is an extract, it is argued that because, according to the Bills of Mortality of London, the deaths under 20 years, in pro-

portion to the total deaths, gradually declined during the sixty years ending in 1821, that therefore the people lived longer. According to the Census, the rate of mortality in England, in 1811, 1821 and 1831, was 1 in 54; 1 in 61 and 1 in 59. The evidence given before the Committee of the House of Commons in May, 1830, confirmed these rates. The imperfect registration of the years 1837-1842, gave an average of 1 death in 46, so that it is not likely that the Census returns were correctly made. But the Parish Registers in England are not more reliable than the Clergy returns in Montreal. "The annual mortality of the county of Middlesex, the largest proportion of whose population belongs to the Metropolis, was, according to the Parish registers," only 1 in 53 in 1840: but the Civil register shows that it was 1 in 42. (Porter's Progress, page 27.) Is it surprising that it has been said that everything is true, but facts and figures?

The conflicting evidence of the Census and Parish registers suggests the question, on what authority is the following statement made? "It has been proved that the population of some of the States of North America has, after making the most ample deduction on account of immigrants, continued to double for a century, in so short a period as twenty, or, at most, five and twenty years, &c." (McCulloch on Population in Smith's Wealth of Nations: Senior's "Political Economy," &c., &c.) Such a rate of progression would require an increase of 3 per cent. per annum, and a birth-rate three times greater than that of the United Kingdom.

On page 13 of Dr. Carpenter's third essay it is stated that, in Boston in 1867, "the yearly rate of deaths among 5500 children under 1 year" was 23.3 per cent. If such was the case, then Boston should have had a birth-rate of 4.22 per cent., else the death-rate of infants was greatly in excess of the proportionate rate in Montreal and even of that of London. If Boston had so high a birth-rate, exceeding that of Glasgow, its character has hitherto been very much misrepresented.

In Dr. Carpenter's essays the still-born are included among the deaths, so that no comparison can be made with returns in which the *deaths are calculated on the number living*. On page 13 it is said "that of the total deaths in the year only 24 per cent. in Boston were under one year, instead of 46 per cent. in Montreal." The statement regarding Montreal is entirely wrong. (See his table on page 10, where it is stated that 201 still-born are included.) Deducting the number of still-born, the deaths are less than 42 per cent. of the *burials*, and only 43.6 per cent. of the *deaths*. In Montreal, the Catholics do not return the number of still-born, and as the rate used in this article is the average of 6 years

among the Protestant population, there can be no doubt but that, in 1867, when the mortality was above the average, the number of still-born was at least 7·866 per cent. on the burials, or 351 instead of 201. If such was the case, then the deaths of infants under 1 year, in Montreal, in 1867 were only 38 per cent. of the burials, instead of 46 per cent. as represented by Dr. Carpenter. The estimated population of Boston in 1867 was 196000, of whom only 5500 were under 1 year. The proportionate number in Montreal, according to the Census, supposing it to have had the same population as Boston, would be 8029, and if the Census were corrected, according to the register of baptisms, the number would be 9,780. The deaths of children in Montreal, in proportion to the total deaths, must therefore be greater, simply because there is a much larger proportionate number of children living. The annual mortality of children under 1 year in Boston is given as 23·3 per cent. on page 13, and as 17·4 per cent. on pages 17 and 18. Dr. Carpenter must have made a great mistake in the statistics of Boston, furnished him by the Registrar of that city, because it is not possible, that, with an average population of 178500, Boston interred only 2474 of her citizens per annum on the average of 10 years. The figures are not misprinted, for he states the rate on the present population to be in accordance with these figures. What has the average rate of the previous 10 years got to do with the present population? The rate of mortality in Montreal, during the previous 10 years, on the present population, is not stated, an omission thoroughly in keeping with the spirit which induced him to write in 1867 that, "in the cholera year, the deaths (in July) rose from 33 to 281; which last, *if continued*, (italics by the writer,) would have added 195 per 1000 to the death-rate of the city, a mortality which only admits of parallel with the plague years of London before the fire."

Dr. Carpenter says the births among the Baptists are not publicly registered. Again he is wrong.

It has been shown that the death-rate of children under 1 year, in Montreal, is less than in London, so that Dr. Carpenter, who has said that the mortality of young children is frightful, has great difficulty in finding out the cause. It is not drinking, for he says "Montreal is not an unusually drunken city." It is not the milk, for "it is probably better and cheaper than in most English cities," and he says "There is no reason to think that the Montreal mothers are less careful than in the country round." But he says, "Every thoughtful person who has observed and studied the simplest facts and first principles in sanitary science, must be aware that a *sufficient cause* for all our deaths is to be found in the filth and pollutions which are allowed to remain in our midst,

&c. * * * * * Our sewer and house drain system may be called (with few exceptions) an express contrivance for conveying the ordinary air poisons, and the extraordinary infections of small pox, scarlatina, &c., into every part of the city, and especially from the low into the higher levels, lest the rich should selfishly conclude that they were not affected by the evils which they allow to scourge the poor." Well, then, the deaths from epidemic and infectious (Zymotic) diseases in Montreal must be extremely numerous, seeing that it has been expressly contrived to carry the cause into every part of the city, and that, *that cause alone is sufficient to account for all our deaths.* In the second essay it is stated, that the deaths from Zymotic disease were in Upper Canada 19 per cent., in all England 22, in Lower Canada 25, in 7 Counties round Montreal 27, and in *Montreal only 25.5 per cent. of the total deaths.* But this is not all, the proportion in Montreal should be very largely increased, even though it be granted that Dr. Carpenter did not mean what he wrote, because the city is contrasted with the country, and the proportionate rate should have increased with the increased mortality; in the same way that the deaths of children formed a large proportion of the whole deaths. The story that the deaths of children were excessive, *seemed* to be true, but the story about the drainage has not even the colour. Need it be wondered then, that the Sanitary Association has a few opponents, as the President says it has, when the citizens are assured that Dr. Carpenter's figures and data cannot be disproved; and on the authority of their own common sense they know that his conclusions are the very opposite of those that should be drawn.

In 1867 Dr. Carpenter claimed that the Sanitary Association, (which was formed in the Spring of 1866,) saved the lives of 470 children in the previous year, and in 1869 he increases the claim to 550 on the average of some years before and after 1866. In 1869 a very different account is given. He says "It should be remembered that in each of the years, beginning with 1866, the official directors and executors of public hygiene have stated that the city was never before in so cleanly a condition, yet the death-rate has risen above the previous number." Table 7 shows that the rate of mortality in 1867 and 1868 was higher than in any year since 1855, (the first embraced in the table) excepting 1864, and that *the average of the two years exceeds the average of the 9 years previous to 1864 by 0.42 per cent.* How comes it that the "partial surface cleansing," which produced "a marvellous benefit" in 1866, failed in the next two years? The claim on behalf of the Association is taken for granted, but until proved it cannot be allowed.

It will now be shewn that the operation of ordinary causes accounts for the low death rate in 1866.

From the writer's table I, it appears that in 1863 the baptisms were at the rate of 5.40 per cent., the highest during the 14 years ending with 1868, and fully one-half per cent. above the average. The births in 1864 were under the average. Scarletina prevailed during that year, and the number of deaths of children under 12 years, which in 1863 was 2535, was 3536 in 1864. In 1865 the birth-rate was still above the average, and the deaths of children under 12 years, 2864, were also far above the average, so that the year 1866 opened with the ranks of the one, two and three years' old children sadly thinned. During the year the baptisms fell to 4.45 per cent., the lowest rate then recorded; and were 385 less than in 1865, therefore it was that the total deaths in 1866 were 415 less than in 1865, and the rate of mortality *apparently the lowest* in fourteen years.

Again, in the 10 years 1855-1864, the average birth-rate was 5.07 and the death-rate 3.58 per cent.: therefore the birth-rate of 1866, 4.45, should have given a death-rate of 3.14 per cent.; the rate was 3.11, or only .03 per cent. less than the average of 10 years, *which on Dr. Carpenter's estimated population amounts to only 34 lives. But it must also be remembered that in 1866 the number of illegitimate children sent to the city was less than the average, and 110 less than in 1865, and as he says that 89.9 per cent. of such children die within the year, the deaths in 1866 should have been less than in 1865, from this cause alone, by 99* The deaths were less than the average of 10 years by..... 34

So that the deaths in 1866 exceeded the average number of the 10 years by..... 65

The above will suffice until the claim is made out in proper form.

Presuming that the clergymen who have not sent in their returns for 1868 have registered as many baptisms as in 1867, then the three years 1866-1868, show an average birth-rate of 4.47 per cent. and therefore the rate of mortality, according to the average of 10 years, 1855-1864, *should have been 3.16 per cent.; it was 3.52, or 0.36 per cent. higher, which, on the population estimated by Dr. Carpenter, amounts to 420 deaths per annum, above the average of the 10 years, ending with 1864.*

An examination of the writer's table I, shows a steady decline in the birth-rate from 5.07 per cent. during the 10 years beginning with 1855, to 4.47, in the 3 years ending with 1868, accompanied with an actual increase in the rate of mortality from 3.16 to 3.52 per cent.; although there is an *apparent* decline from 3.58 to 3.52 per cent. If the population has continued to increase at the estimated ratio, the lessened birth-rate must have been compensated by an increased rate of immigration, in that case,

the increased rate of mortality is even greater than it seems. Supposing the addition to the population by immigration to have been very much larger than calculated, and that thus a number of deaths were recorded while the increased number of immigrants has not been added to the population, this cause would not account for the increased mortality; for it has been shewn that the addition of 20000 immigrants over the usual number of an average town population, 20 years of age, would add only 130 deaths in that year.

It is very likely true that the inhabitants of the suburbs, outside of the city limits, are now using the city burial grounds in an increased proportion, and that the illegitimate children† sent to the city has also increased by more than a proportionate number, so that the increased mortality may be only apparent.

On the other hand, the greatly increased cost of living, arising from the extraordinary advance in house rents, &c., has doubtless resulted in over crowding among the poorer classes, and helps to explain why the marriage rate, which in the 7 years beginning with 1855 was 1 in 93, declined to 1 in 101 during the next 7 years. The number of young persons now employed in factories is also much greater than it was fourteen years ago, so that it is likely that an actual increase in the rate of mortality has taken place.

After all, it has been shown that Montreal is more healthy than Glasgow and London, and much more healthy than Manchester; and that the deaths of children in the first year of life, in Montreal, are not only, not excessive, but actually less, in proportion to the number of births, than in London.

A very imperfect sketch has now been given of the unfounded statements and erroneous views circulated by the Sanitary Association, and the reader must judge of what effect they have had on the general prosperity of the city. But, of the Secretary it must be said, once for all, on behalf of men who are labouring in a most uninviting field of thought, in which the work is hard and the fruit is little, that he has no place in the wide domain of Statistical Science.

Montreal, September, 1869.

† As nearly all the illegitimate children sent to the city are taken to the Grey Nunnery and baptised,* the Roman Catholic portion of the population is made to appear more prolific than it is; but as comparatively few survive the first year, their deaths increase in a very much greater degree than the apparent rate of mortality.

CORRESPONDENCE.

To the Editors of the Canada Medical Journal:

“*O! magna vis veritatis.*” Cic.

GENTLEMEN,—From the tone and tenor of your remarks on my “Analysis of the Ontario Medical Act,” contained in the November number of your Journal, it would seem that a deliberate and conscientious change of opinion on any given subject was dishonourable, and is a heinous offence in your eyes, if the conversion does not accord with your views. You express great astonishment at my “sudden conversion,” and add: “no one was more bitterly opposed to the Bill at Toronto, &c.” Why did you not say, “on the first day,” which would have been strictly true. As I said in my paper, “it was not until the second day’s proceedings of the Association, when this matter had been discussed and agitated both in and out of the meeting, that I, and I may safely add *we, began to understand the Act.*” If I have not sufficiently explained my reasons for my conversion in my “analysis,” I will not now tire your readers, nor take up your valuable space by an attempt to do so, as it would only be a repetition of what I then said, and still think, and which any one may read that is interested.

Now gentlemen, although I have been guilty of the great crime of differing in opinion with you on this subject generally, it is a satisfaction to see that you admit with me, that “the Act so far as relates to the penal clauses is a good measure.”

The undignified taunt about seeking to amend “our own Act based on the Ontario Medical Act of 1869,” applies, with a singularly bad grace, to one who has devoted his whole professional life, without regard to time or money, to obtaining useful Medical legislation, and who has been greatly instrumental in securing the little we have that is worth having.

An experience of about forty years of Medical practice and Medical legislation has convinced me of the fact, that there is no branch of art or science which is so little understood or cared for, or so badly manipulated by legislators, as physic; and, the little good that has been attained by legislation is more due to accidental circumstances, coupled with vigilance and perseverance on the part of *certain members* of the Medical Profession, than to the sympathy or good will of the legislators, with whom politics, and not physic, is ever the motive principle. This, however, is not surprising when we consider the difficulties and impediments that have constantly beset Medical legislation in Great Britain and Ireland as well as here and elsewhere.

You are aware, gentlemen, that, bad as this Act is in your estimation (and still defective as it is in mine,) an attempt has lately been made to amend the Ontario Medical Act of 1869, by a bill introduced on the 3rd instant, by the Hon. Mr. McMurrich.

By whom were these amendments sought? By the regular Profession? Certainly not, but, by the Homœopaths and Eclectics. Does not this clearly demonstrate the fact that if the regular members of the Medical Profession are not satisfied with the Act, the irregulars *are still less so*? These latter used every possible means to ensure success, and were only defeated in committee (on the 17th inst,) by the exertions of the regulars. If they were so universally dissatisfied with the Act as you gentlemen suppose, and they saw even the shadow of a chance of amending it, why did they not go into its whole merits in committee? Because they well knew the state of parties, (medical as well as political,) both in and out of the Legislature, and were certain that any change that might take place would "amend" for the worse; and "the Act being the best that could be obtained at the time" they determined to protect it until they saw a chance of getting a better.

Your last number contains an article headed, "Quebec Medical Society," to which you gave insertion "with pleasure, and are glad to find that at all events the members of the Quebec Medical Society do not endorse the sentiments of Dr. Marsden with regard to the Ontario Medical Bill."

Had Dr. J.B. Blanchet furnished you the names of the members present at that *numerous and influential* meeting, you would have seen that besides the concoctor of the resolutions so *unanimously* adopted, there were only *four junior members* of the Profession present including the Secretary. I entirely absolve the respected President, who occupied the Chair on this memorable occasion, from any complicity or sympathy with this fragment of the Quebec Medical Society, which presumes so authoritatively to contradict my statements, and speak for the Society. I have conversed on the subject with a larger number of the members of the Quebec Medical Society than composed that meeting, (and am prepared to furnish their names if required) who entirely "endorse my sentiments" with regard to the Ontario Medical Act, and some of them who, like myself, were originally of a different opinion. I have found none, however, that are ashamed to acknowledge their conversion.

As the meeting referred to is stated to have been held "at the Medical Faculty of Laval University," (sic) you may suppose that allusion is made to persons and not to a place; and that so distinguished a body as the Medical Faculty of Laval University had any thing at all to do with the

meeting. Beyond permitting it to meet in their rooms, they had no more to do with it than any of the Medical Faculty of McGill College; no, not even as members.

Finally, gentlemen, although you do not entirely concur in my sentiments or opinion of the Ontario Medical Act—for it is only a matter of opinion after all—it is satisfactory to me to be able to inform you that I am receiving letters from members of the Medical Profession in different parts of Ontario, as well as from members of the “Medical Council,” heartily approving of my analysis. Until you change your opinions, (which I have every reason to believe you will when sufficient time has been given to test the working of the Act,) let me assure you that I shall be as ready in the future, as I have ever been in the past, to use my best exertions and influence to elevate and maintain the character of the Medical Profession, and promote its unity, with singleness of purpose, not only in the Province of Quebec, but throughout the Dominion; making our motto, “Charitas—Veritas—Unitas.”

I am, gentlemen,

Yours, &c.,

W. MARSDEN, M.A., M.D.

Place D'Armes.

Quebec, Dec. 27th, 1869.

To the Editors of the Canada Medical Journal :

GENTLEMEN,—I have cut out the enclosed resolutions for publication in the *Canada Medical Journal*, which were sent by the last English Mail to the Editors of the *Quebec Mercury*, who kindly published them. They have given great satisfaction in the city of Quebec, and particularly among the friends of the late lamented Dr. Hébert. On hearing of his death, these young men met, and spontaneously offered this graceful tribute to the memory of a young and esteemed Professor. This action does credit both to the head and the heart of the six young Canadians now completing their professional studies at the University of Edinburgh. I am sure they will be read with equal satisfaction by the readers of the *Canada Medical Journal*.

R. H. RUSSELL, M.D.,

Edinburgh.

Quebec, 28th Dec., 1869.

UNIVERSITY OF EDINBURGH,

11th December, 1869.

At a meeting, held on the 11th December, at the Royal Infirmary, by the late Laval medical students, now completing their studies at the University of Edinburgh—Mr. J. G. D. Douglas presiding, and Mr. H. Russell, B.A., acting as Secretary,—the following resolutions were unanimously adopted :

Moved by Mr. J. D. LeMesurier, seconded by Mr. H. de M. Pentland,
Resolved,—That the late Laval medical students have learned with deep regret the premature death of Dr. O. A. Hébert; and they feel that the University of Laval has lost in him one of their most esteemed and distinguished Professors, who was always beloved by those who knew him and shall ever be gratefully remembered by those who received the benefit of his instructions.

Moved by Mr. J. M. LeMesurier, seconded by Mr. F. LeM. Grasset,
Resolved,—That the Secretary be requested to communicate to the family of the deceased the heart-felt condolence and sympathy of his late pupils.

J. G. D. DOUGLAS,
President.

H. RUSSELL, B.A.,
Secretary.

We need hardly say that we heard of Dr. Hébert's death with feelings of the most profound regret. At Toronto, in September last, he was one of the most active and enthusiastic workers present at the meetings of the Canada Medical Association, and it is said that he there contracted the cold which eventually caused his death; We cordially extend our sympathy to his relations and friends.—*Eds. Journal*.

AN INSTITUTION FOR THE RELIEF AND EDUCATION OF
THE BLIND OF ONTARIO.

We are much gratified to observe that the Ontario Government has made an appropriation of \$75,000 for the establishment of an institution for the blind. It is not yet known where the location of the building will be made, but for the interest of the blind, who can hear, it should be in some large city where many advantages present themselves in the way of lectures: and where employment may more readily be obtained for those capable of doing certain kinds of work. Moreover it must be remembered that many affected with blindness may be susceptible of medical treatment, and consequently should be in the neighbourhood of an Ophthalmic Hospital.

Canada Medical Journal.

MONTREAL, JANUARY, 1870.

REPORT OF THE MEDICAL SUPERINTENDENT OF THE PROVINCIAL LUNATIC ASYLUM, TORONTO.

We have to acknowledge, with thanks, the receipt of the very able report for the year ending 30th September, 1869, of the Medical Superintendent of the Provincial Lunatic Asylum, Toronto, and from it we learn that this institution is steadily continuing to extend its usefulness. We perceive that a certain portion of the extensive buildings has been appropriated to the use of that class of the community thus afflicted, whose friends can afford to pay for their care and treatment. Persons belonging to the Province of Ontario will be admitted at the weekly rate of four dollars, payable quarterly in advance, and those who are resident in other portions of the Dominion will be admitted at the rate of five dollars per week, also payable quarterly in advance. This arrangement is, so far, limited to female patients, but it is expected that in the course of the coming summer the west wing will be ready for occupation, a portion of which will be set apart for the same class of male patients at the same rate of charges.

Referring to the report we find that the total number admitted and treated since the first opening of the asylum in 1841, is 3535, of which number 1896 were discharged. By this, are we to understand that these individuals were restored to the industrial population? Not altogether, because on reference to another part of the report, it is recorded that 51 individuals were discharged during the year ending 30th September, 1869; of these 35 were fully recovered, 15 were improved and one unimproved. It would appear that taking as a standard the last 4 years, the average admissions have been 86 per annum. In comparing the results of treatment, the report states:—

“The discharges, compared with the admissions of the year, appear large, being almost two-thirds; but as I have frequently before pointed out, the practice of comparing the discharges with the admissions of the same year is erroneous, unless the admissions were constantly equal over a series of years. The more correct mode is to compare them with the sum of half the admissions of the present year, and of the year preceding. This sum

for the two half years is $102\frac{1}{2}$; so that 51 discharges are equal to 50 per cent. of the admissions, thus assumed."

The average residence in the asylum of those discharged who had recovered, was a little over eight months and one-half. It must be born in mind that cases of idiocy and imbecility are not admitted to this asylum, so that this institution is in reality an insane hospital intended for such cases as may reasonably be expected to be benefited by isolation and appropriate treatment, and is not a poor house, nor is it intended to be an asylum for cases of incurable mania. An institution with these benevolent objects does not in reality exist in our section of the Dominion, because, although we have a large establishment at Beauport, yet the objects of that institution are totally different. Here a large proportion of the patients belong to the incurable class, and although in Beauport cases of curable mania are admitted, yet the asylum is not specially devoted to that purpose. In this respect we certainly may with advantage follow our western brethren.

On former occasions we have adverted to the necessity of regarding mania as a disease amenable to treatment in the early or acute stage, but if, as in all other diseases, a certain period is allowed to elapse before appropriate means are resorted to, what may be at the outset a trifling derangement, will become a confirmed and incurable condition, and the sufferer will be deprived of his only chance of benefit from remedial measures. As things are with us in this Province, an individual attacked with mania is humanely (?) placed in the cells of one of our common gaols, and there permitted to remain until he becomes troublesome, when the authorities wake up to find a case of confirmed and settled disease for which there is no remedy but life-long restraint. Can there be design in this? Is it done intentionally? The plea is that there is no room in the asylums, or that the cumbrous requirements of the law have to be complied with. But to provide room, to give the poor man a chance of recovery from his malady, is no concern of our government with its surplus revenue, so long as a monopoly is permitted to sway the councils of our Local Legislature.

This is a sad subject, and we would rather not enter upon it, because we perceive that nothing definitely good will be the result. The Government of the Province of Quebec seems to shirk the responsibility, and so long as its officials carry out the roll, we will be unable to record a like result. In Toronto, one-half of the admissions are discharged within the year; of these over two-thirds are cases of recovery, the average residence in asylum being about $8\frac{1}{2}$ months. It may, perhaps, be as well to allow this matter to rest for the present, as we have not received the late

report of the Beauport Asylum, but judging from past experience, we are aware that in usefulness it falls far short of the institution in Toronto.

The mortality during the past year has been about 4.37 per cent. of those under treatment. This appears to be remarkably favourable to the sanitary condition of the institution. Dr. Workman refers to the prevalence of latent phthisis as a prominent cause of death, especially among the female patients. On this subject he says :

“ No less than 12 in our 26 deaths this year have resulted from pulmonary consumption, of which only 3 were of the *manifest*, whilst 9 were of the *latent* form. From 1st January, 1865, to this date, 4 $\frac{3}{4}$ years, 15 men and 34 women, in a total of 121 deaths, have died of consumption—or 40 per cent.

“ A very distinguished English writer, recently alluding to some of my former statements on the subject of *latent* consumption, expresses the opinion that our hygienic condition must be bad in order to produce so high a proportion of deaths from consumption. I venture to say that when *post mortem* research is carried out to the same extent in *all* English Asylums as it has been in ours, their proportion will not be found less than ours. It would be strange, indeed, that their average total mortality should be, as it is, about double of ours, and that there should exist no more potent factor of that mortality than *general paresis* among men. What is their compensative death factor among women? Open the thorax after death and see.”

There was but one case of death from *general paresis* during the year. Some interesting facts are noticed regarding the prevalence of this disease in the male sex, but we cannot do better than extract from the report :

“ The unwonted fact of only one death in the year from *general paresis*, is but another illustration of the caprices of death incidence. Next year will probable compensate.

“ Since January, 1865, 27 in 121 deaths, (or 22 $\frac{1}{2}$ per cent.), have resulted from this universally fatal disease. 24 in men, and only 3 in women. It is worthy of observation that the aggregate deaths of men and women from *general paresis* and *pulmonary* consumption combined, have in the same period been almost equal, viz:—

Men..... 39

Women... 37

Thus again exhibiting the fact noted in former reports, that pulmonary consumption in insane women appears to be the compensative death factor against *general paresis* in insane men. Whether this equalization of mortality in the sexes has any real significance, or is merely an accidental coincidence, I venture not to decide. It has been in this asylum, a most rare

fact in *post-mortem* examinations, that general paretics have laboured under any form of organic disease in the lungs, yet some distinguished European writers state the concurrence.*”

The report concludes with the details of some fatal cases with the *post mortem* examinations. Taken altogether this appears to us a most important and interesting document, and illustrates what we have on former occasions alluded to, the value of an institution, under able management, for good in affording relief to a most afflicted class of individuals.

THE DOMINION MEDICAL JOURNAL.

On behalf of the Medical Profession of the Dominion, at least the goodly number of the profession we have among our subscribers, we feel it our duty to ask what is the matter with the *Dominion Medical Journal*. We had not only the high sounding name, but the words of the editor, which promised to supply a want felt throughout the Dominion, while the Province of Ontario was to be particularly blessed by having a record of all matters pertaining to the profession. Under such circumstances we must confess our great surprise that this journal has supplied not one word to the profession about the transactions of the Canadian Medical Association; and although important and repeated meetings of the profession have been held in Toronto and other places, not a single word have we had respecting them. As we said in our notice of this journal when it first appeared, we think there is a field for two medical journals in Canada, and we regret to see this absence of all notice of current Canadian items; indeed, almost absence of editorial matter.

Since writing the above we have received the December number of the journal, which contains the communication which we published in our November number, from Dr. Marsden, as well as a short editorial thereupon. It appears that the *Dominion Journal* has a preference for everything that favours the Ontario Medical Act. But when we read the following we felt no little surprise. The editor says respecting Dr. Marsden's letter: "We felt confident that it just required of the opponents of this Bill to throw aside prejudice and *pecuniary interest*, and listen to those arguments which can be used in its favour to enable them to see clearly the great necessity which existed for the enactment of this wise measure." The only portion of this sentence to which we design to refer is the reference made in italics to pecuniary interest. We

* I have recently learned of the death, from consumption, of close relatives of some general paretics.

suppose that some specific charge is intended to be made against somebody, and we call upon the editor to distinctly state to whom he refers, and the grounds upon which he prefers his charge. In the meantime we can only express our inability to see in what way the opponents of the Act can be considered mercenary. As we understand the matter, there is a strong dislike on the part of a large and very respectable number of the regular profession to be associated with irregular practitioners. But we fail to see in this any pecuniary consideration. The Homœopaths and Eclectics were legal practitioners before, and could ply their vocation without hindrance. Will the *Dominion Journal* explain, and be good enough to publish the disclaimer of the Quebec profession as to Dr. Marsden's assertion: that, his views were shared by his confrères?

THE ONTARIO MEDICAL ACT.

ITS FINAL MANIPULATION BY THE HOMŒOPATHS.

We believe that there are some who discredited the statement made on several occasions that the Ontario Medical Act was finally amended by Dr. Campbell, a homœopathic practitioner. We were present at a meeting of the committee appointed to consider the Medical Bill recently before the Ontario Parliament, and heard Dr. Campbell exultingly declare that it was quite true that he had the final manipulation of the Bill before it passed, and shaped it to his satisfaction. Could anything be more humiliating than this? It is the result of hasty legislation initiated by a few designing and self-appointed law makers. But the crowning shame belongs to an unscrupulous partisan who loses no occasion to insult a profession quite as honorable as his own.

THE TORONTO EYE AND EAR DISPENSARY.

We have received the first annual report containing the constitution of this institution. The report of the medical officers is interesting; by it we learn that the dispensary was opened on the 20th May, 1867. The number of patients admitted during the first two years was 224: eye patients 209; ear patients 15. The number cured was 110; improved, 91; without benefit, 3; incurable, 4. "Of the eye patients when admitted, 28 were quite blind; 16 nearly blind; 50 practically blind, and 108 had impaired vision. Of the first class 8 were discharged with good vision; 8 with improved vision, and 4 unimproved. Seven were incurable, and one left. Of the second class 12 were discharged with good, and 4 with improved sight. Of the third class 33 were dis-

charged with good, and 15 with improved vision, and 2 left. Of the 4th class 43 were discharged with good, and 58 with improved vision. Five left, and in one case the result was unknown. Of the 209 eye patients, therefore, 96 were discharged with good sight (cured), and 77 with improved sight; but it should be remarked that the number of cured would undoubtedly have been much larger had not many discontinued treatment too soon from their anxiety to resume work and again earn a livelihood." While we know that diseases of the eye and ear may be, and often are, treated successfully by the general practitioner in private practice and at general hospitals, we fully endorse the following: "That diseases of the eye and ear are more likely to be successfully treated at institutions especially designed for and adapted to this treatment, than at general hospitals."

The report goes on to show that the patients come from different sections of the Province as well as from abroad, and that many of them are quite poor. Several municipal councils had assisted persons from their individual sections: and the House of Industry and the House of Providence had kindly accommodated some. Regret is expressed that there is not an Ophthalmic Hospital for Ontario: "for to this fact must mainly be attributed the rapidly increasing number of blind paupers." Hitherto the dispensary has been mainly sustained by contributions from the charitable of Toronto. The board of directors, consisting of some leading men of Toronto, have exhibited a laudable zeal in securing the interests of the Institution. The great result is, however, mainly due to the untiring energy of Drs. Rosebrugh and Reeve, who have superintended the operations and daily given their attention to the dispensary.

It is with much satisfaction that we conclude our notice of this institution by stating that the Government of Ontario has responded to the request of the directors by granting \$1000 for its sustenance.

THE DENTAL PROFESSION OF ONTARIO.

We have been no indifferent spectators of the praiseworthy efforts of the dentists of Ontario to place themselves in an elevated and dignified position. Their labours, we believe, have been crowned with a great degree of success. After procuring an Act of Incorporation with a Board of Examiners, they have proceeded to establish a Dental College in Toronto with an efficient staff of teachers. We are pleased also to see the healthy condition of the *Dental Journal*, published at Hamilton, under the editorship of W. G. Beers of Montreal, and C. S. Chithenden of Hamilton. We wish the journal every success, and commend the zeal for self-advancement manifested by the dental body.