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CANADA

Medical and Surgical Journal.

EDITED BY

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CANADA
MEDICAL & SURGICAL JOURNAL.

ORIGINAL COMMUNICATIONS.

On Adulterations.—A Lecture delivered before the Pharmaceutical Association of the Province of Quebec. By G. P. GIRDWOOD, M.D., M.R.C.S., England, Professor of Practical Chemistry, McGill University.

The notices of this meeting state, under the head of business of the evening, Lecture on Adulteration, by myself. When asked to give a lecture, I felt a difficulty in finding a subject which I thought would be acceptable. I selected my present subject as being one on which all present would be able to express an opinion, and in the hope that it would lead to a discussion, which would probably be more advantageous to all parties than the few remarks which I may offer, and which you have kindly dignified by the title of Lecture. You have all heard or read of the Adulteration of Food and Drug Act, as it is called in the old country, and of its working, and doubtless have been led to the now celebrated Citrate of Magnesia case which has recently formed a subject of very lengthy discussion in the public print.

I will, firstly, try and define the meaning of the word adulteration, for on the meaning of the word everything in the shape of argument depends. I doubt not you have all a ready answer to the question, What constitutes an adulteration? and every man in his own mind has a vague idea of what he means when he uses the term.

In its derivation from the Latin, "ad to" and "alter

another," we have a definition, in its strictest sense it is the admixture of one thing with another.

Dr. Johnson, in his Dictionary, says:—

"To adulterate," to corrupt by some foreign admixture, to contaminate.

"Common pot ashes, bought of them that sell it in shops, who are not so foolishly knavish as to adulterate them with salt-petre, which is much dearer than pot-ashes."—*Boyle*.

"'Adulterate,' adj. 2nd. Corrupted with some foreign mixture. It does indeed differ no more than the maker of adulterate wares does from the vendor of them."—*Government of the Tongue*.

"They may have all their gold and silver; and may keep their adulterate copper at home."—*Swift's Miscellanies*.

"Adulteration," the act of adulterating or corrupting by foreign mixture; contamination.

"To make the compound pass for the rich metal, simply is an adulteration or counterfeiting; but if it be done avowedly, and without disguising it, it may be a great saving of the richer metal."—*Bacon's Natural History*.

"The state of being adulterated or contaminated, such translations are like the adulterations of the noblest wines; where something of the colour, spirit, and flavour will remain."—*Felton on the Classics*.

These quotations from standard authors show the sense in which the word has been used so far as connected with my present subject; but still this definition does not altogether please me; it is difficult exactly to give a definition that meets the meaning of the word as used at the present day; for the meaning of words is constantly undergoing change, and that, perhaps, may be the reason for a definition of the word being left to the magistrates to decide, by the framers of the Imperial Act.

As in this country the Legislature copies the Acts of Great Britain, when it can, we may expect some such Act

will, ere long, be brought forward here. In fact the thin end of the wedge is already driven in, in the late City bye-law about the adulteration of milk, and the question is just now again brought up by the butter frauds which have lately occurred.

It will, therefore, be well to look into this subject, so that when the time comes a reasonable and intelligent Act may be passed if it become necessary.

As a matter of course, those articles which affect us immediately will be the first to which attention will be paid—food and drugs. Food will only affect you as a member of the community, but drugs, and I may add chemicals, affect your business particularly.

I have not been able to obtain a copy of the Imperial Act, and, therefore, can only judge of its working by the reports which are contained in the journals to which I have access.

It will be well now to go back to a history of the conditions which brought about the need of this law. That it has been the custom for men to enrich themselves at the expense of others is evident, and this lies at the bottom of all adulterations, properly so-called, and I will here add what I take it is wanting to complete Dr. Johnson's definition, it is that, the admixture of foreign substance must be made not only to corrupt, but it must be made purposely with intent to increase the profit and thereby to deceive.

The earliest adulterations were probably practiced in the noble metals, as being least easy of detection and as producing the largest results, and the earliest laws on the subject, apply to silver and gold, where we find the terms "sterling" and "standard" in common use, denoting a certain value of either metal, not denoting that the metal is pure or fine, as it is termed, for by law all silver and gold wares are permitted to be adulterated with some baser metal, the added metal being termed "allay" or "alloy" from "a la loi" to the law, and the whole is term-

ed "standard" or "sterling." The word Sterling, Camden, in writing of Stirling Castle, says:—

"They are much mistaken who think that our good and lawful money of England commonly called sterling money, takes its name from hence; for that came from the Germans, who were termed Easterlings by the English, from their living eastward, and who were first called on by King John to reduce the silver to its due fineness, and such money in ancient writings is called Easterlings."

This admixture with baser metals is necessary to the due working of the gold and silver; and is thus noticed in "The Touchstone of Gold and Silver wares." "Our forefathers considering that silver in its finest degree would be too soft for use and service (for the finest silver is almost as soft as lead) did consult together to reduce or harden the silver (by allaying it with baser metal) to such a degree that it might be both serviceable in the works and also in the wearing keep its native whiteness."

We have also the authority of Hudibras —

"For fools are stubborn in the way
As coins are hardened by th' allay."

Therefore this depreciation by admixture of a baser metal is not an adulteration, but is made really to give to the fine metals a durability they do not possess of themselves; and at as early a date as Edward the First, laws were passed regulating the amount of alloy to be used in the manufacture of silver and gold wares. Similar laws are still in force in England to the present day.

"Ale was known and made by the Egyptians 404 B. C. It is mentioned by Xenophon in 401 B. C. The Romans and Germans made it from corn. Ale houses are mentioned in the laws of Ina, King of Wessex, A.D. 688. Booths were set up in England in 728, under law, and various laws were subsequently passed. One in the reign of Henry the Eighth, to prevent the use of hops, which were first introduced from Flanders; and the City of London petitioned the Parliament against two anuisances. These were, New-

castle coals, in regard to their stench; and hops, in regard they would spoil the taste of drink, and endanger the people." So here we see that what was considered an adulteration in the days of Bluff Harry, is now no longer an adulteration.

Passing by other things I come to our own time, when we find that it was customary to mix all sorts of things with something else, either to produce an artificial colour not indigenous to the substance itself, or to add a flavour, or by adding something cheaper to make the substance pass muster as what it purported to be. These practices would more properly come under the head of adulterations. This state of things at last reached such a point that the London *Lancet* called public attention to the subject by its "Analytical Sanitary Commission," wherein the editors sought to point out the extent of the practice, by purchasing articles at different shops throughout the metropolis, and giving an analysis of these samples to the public.

I have now stated what, I believe you will all agree with me, is an adulteration, and I have traced up the practice from early days to our present time. Let us for a few moments examine into the causes which lead to adulterations, and lastly consider the best means of preventing them.

As to cause, I should say it is manifold. First, cupidity on the part of the merchant, manufacturer, or tradesman, who either manufactures an adulterated article, or who adulterate a pure article and resell it again, or who still further adulterates an already adulterated article.

The desire of the manufacturer, merchant, or tradesman to undersell his neighbour. And lastly, the vitiated taste of the public who has been taught to prefer the adulterated article to the pure, or the desire of obtaining inexpensive (not cheap, for the cheapest are often, after all, the worst and dearest) articles for consumption, regardless of quality.

If we come to ask what are the articles that are commonly adulterated, I would answer almost every article

sold is more or less the object of adulteration. The old colloquy between the sanctified grocer and his apprentice, has become proverbial: "John. Yes sir. Have you dusted the pepper? Yes sir. Have you floured the mustard? Yes sir. Have you sanded the sugar? Yes sir. Then come to prayers," typifies the retailer who tries to make his wares do duty for a larger amount of money than they should. Besides these articles which have been proved to be largely adulterated, may be mentioned in this trade, anchovies and anchovy paste mixed with red lead, to give them a brilliant colour. This I saw done in one of the largest manufactories in London, and, on asking, was told, "Oh yes, we make pure anchovy paste, but it has but a very small sale, the public think it adulterated." In pickles copper is constantly added to give a fine green colour. I once was out in the backwoods eating lunch at a country inn, with a friend, to whom I remarked that the pickles looked suspicious, and taking a three-pronged steel fork I set it in the pickles, and in a few moments it was covered with a beautiful copper covering. The old landlady admitted they were home made, and she had put in a little "werdigrease to give um a colour." To mention coffee and chicory would be stale to you, and roast beans for chicory.

Tea with dried second hand tea leaves, dried leaves of other plants, faced with gypsum, soapstones, prussian blue, yellow ochre, iron filings, and sand, and in this particular article we find not only merchants in the country, importers, and retailers adulterating and selling such mixtures, but John Chinaman, either setting the example or imitating his barbarian customers, manufactures his lie tea out of plaster of Paris most ingeniously rolled up to represent tea. Indigo made up of prussian blue and plaster of Paris. White lead made up of zinc white and sulphate of barytes. Wooden nutmegs and hams, etc. In drugs, opium adulterated, in Turkey, with dirt and seeds and leaves that do not belong to it. Oils of various kinds essential and fixed.

Wines, bread, etc., in fact everything where the ingenuity of man can devise a fraud on his neighbour, so as to make a little more profit. Some of these adulterations are harmless, except pecuniarily. Others, however, are injurious to health. The former may be left to be dealt with by the ordinary laws, but where health is concerned it is another matter. Then the law should step in and say this must not be, and should appoint persons to carry out that law.

As to the best mode of preventing adulterations, I would suggest, a more enlightened and extended education, on all points, moral as well as physical and intellectual.

Moral education will prevent a man from defrauding his neighbour, physical will make him ashamed of such an act, and intellectual will enable him to detect it in others, and now gentlemen, more especially my younger hearers, I would advise you for this purpose to study hard at chemistry, and I cannot better close my remarks than by reading a portion of Mr. Stanford's address to the Glasgow Philosophical Society, Chemical Section, Dec. 8, 1873.

“ It had at last been admitted that the three R's did not *entirely* qualify a boy for society, and that even Latin and Greek, however well caned or birched into him, were not a *perfect* mental training. We had awakened at last to the belief that he ought to know *something* about the air he breathes, the food he eats, and the fluids he drinks. Some sanguine individuals had thought that even the earth he lives on should not be in every sense beneath his notice. Physical science as a mental training must sooner or later be recognized. Even with very young boys there could be no more valuable study than qualitative analysis; he knew of nothing which so easily brought out the powers of observation and reasoning, and these powers would retain their influence on the mind long after the problems of Euclid had faded from the memory; Humboldt says: “To behold is not necessarily to observe, and the power of comparing and combining is only to be obtained by education. It is much to be regretted that habits of exact

observation are not cultivated in our schools: to this deficiency may be traced much of the fallacious reasoning, the false philosophy, which prevails.

“The late Dr. Guthrie, in his “Autobiography,” did not lament the accident which made him substitute the study of physical science for that of mathematics. Faraday’s discoveries showed that the former was much more useful practically than the latter, and the minds of these two men in their breadth, and their depth, and their fulness, showed the value of science teaching. We might look confidently for a large spread of this teaching in the present century.

“The Adulteration Act would, when it was properly amended, and made universally compulsory, give increased employment to a large number of chemists, and even now the appointment of Medical Officers of Health in many places showed that the right men could not be got in sufficient number, or that the qualifications for the office were entirely misunderstood. Of all analysis there was nothing so difficult as the detection of adulterations; it required the very highest qualifications—not only the most consummate facility in ordinary analysis, but a large experience of trade, and a perfect knowledge of *Materia Medica*, and of the sources or manufacture of all our necessities.

“Unfortunately, it had hitherto been mostly in the hands of microscopists; but now, when we were to punish the delinquents, we must have exact chemical quantitative evidence. In many cases the methods to attain this had yet to be discovered.

Case of Double Mammary Abscess occurring ten days after delivery. Syphilitic History.—Use of drainage tube. —Recovery. By T. JOHNSON ALLOWAY, M.D., L.R.C.S.E.; L. R. C. P. EDIN; late H. M. Royal Navy.

The subject of the following case, an apparently healthy young English woman, aged 24, was attended in her confine-

ment by me, on the 3rd of January last, giving birth to a full-termed, healthy child. This was her second child, the first was still-born, at seven months maturity. On the 11th January I was unexpectedly called away from town and on my return, on the morning of the 13th, I found a message awaiting me, to attend as soon as possible. On my arrival I found her out of bed, lying upon a sofa, suffering intense pain in both breasts, which were greatly enlarged and so tender that she would scarcely allow me to examine them. From the left breast a purulent discharge was freely oozing through a small ulcerated opening, about half an inch above the nipple. There was no opening on the right one as yet, but distinct fluctuation could be felt exactly in the same position, viz., just over the nipple. I, at once, passed a bistoury into the opening of the left breast, enlarging it and allowing a free discharge of creamy pus, which when evacuated amounted to about oz. iv. I then opened the abscess in the other breast, in its most pendent part, which was just above the nipple, obtaining from it about oz. iii. of pus. She was now placed in bed, with hot, carbolised poultices applied and ordered to be changed every four hours. Ordered iodide of quinine, with 6 oz. of wine daily, and bowels justly regulated.

During the following six or seven days I removed, by gentle pressure, large quantities of pus, at the morning and evening visits. Her pulse continued very high throughout, ranging from 140 to 150. An opiate was occasionally administered at bed time, to relieve pain, etc.

On the 20th, fresh abscesses began to appear and point at the most pendent part of both breasts, when Dr. Roddick kindly assisted me in placing her under chloroform and passing a drainage tube transversely through the sub-mammary areolar tissues of each breast, by which we obtained a large quantity of pus. From each of the openings made for the tubes, communications could be obtained with the first formed and superior opening, traversing the centre of each breast in several directions, showing that

the organs were broken down very extensively by the suppurative process, and that the gland structure itself was much involved. Poultices were now applied as before, iron, quinine, pot., chlor., and digitalis ordered with oz. ii. brandy, to be increased to oz. x. daily. From this date up to the 25th, both breasts continued to improve, the discharge diminishing, pain, swelling, and all inflammatory symptoms disappearing daily. But in the upper and outer part of the left breast, fresh abscesses began to appear, involving the glands of the axilla, and causing a good deal of pain. These abscesses seemed to be as yet but sub-mammary and local in character. I wished, therefore, to open them at once, but she would not allow me, fearing that she would faint from her weakened condition. Dr. Roddick again assisted me, when I freely incised three more abscesses, under chloroform, obtaining about oz. i. of pus in all. Drainage tubes were now removed, and poultices continued. For the next few days she continued very low, from the exhaustive drain her system had suffered. Her pulse remained all the time very high but full and strong, due, I imagine, to the influence of proximal irritation upon the heart itself, and to the exhaustive drain acting upon the nervous system generally, I may here remark that although she was taking *m. xx.* doses of the tinct. digitalis every four hours, the heart's action, which sometimes ran as high as 165, was not in the slightest degree influenced by the drug.

28th.—Discharge from both breasts now almost ceased, appetite returning. Pulse still very high. Applied carbolic lotion dressing to both breasts. Tonic mixture continued, with wine, brandy omitted. Ordered small doses of green iodide mercury, the reason for which will be seen hereafter. The principal food she had taken throughout consisted of beef tea and milk, occasionally with an egg beaten up in the latter. By the end of the first week in February, she had sufficiently recovered to walk out and resume her household duties.

In connection with this case there is an interesting fact I may here state, viz. : A syphilitic history. The patient states that about three years ago, just before the premature birth of her first child, a rash broke out over her body which formed into "boils," then dried up and fell off in scabs, with the exception of several large ones on the anterior tibial aspect of the right leg, which coalesced and formed an ulcer somewhat larger than a walnut; this was probably rupia. Nocturnal pains troubled her a good deal, her appetite failed, she lost flesh, and became very miserable, so much so that her friends thought she was consumptive. Up to January, 1873, when she came to me for the first time, she had applied several remedies to the ulcer, but obtained no relief. She then also told me the very important fact that her husband had an ulcer on his leg, which had existed for some time, but for the relief of which he would seek no treatment. On questioning him, I satisfied myself that he was the subject of syphilis. I at once completely cauterised the ulcer on her leg with the acid nitrate of mercury, followed by linseed poultices, and placed her on hyd. iodid virid, potass iodid, tinct. cinchonae, etc. Next day carbolic oil dressing (1-40) well protected by oiled-silk, was applied, leg bandaged and dressing changed twice a day. On the third day the green iodide affected her bowels, when I added small doses of tinct. opii., which at once counteracted that tendency.

On the fifth day she stated that she had rested comparatively well the previous night, and felt altogether much relieved.

The ulcer from this time began to improve and rapidly heal, and was completely closed on the twelfth day. She now discontinued the iodide mixture, and in its place I ordered hydrg. c. cretae gr. iii. terdie, which she continued for about ten days, when she began to gain flesh and spirits, and considered herself well. I saw her no more until the present confinement trouble.

In conclusion, I wish to draw attention to one or two important facts in connection with this case.

Firstly, That the woman had contracted syphilis from her husband, through the medium of the child-bearing process; the disease appearing in the form of secondary manifestations.

Secondly. That she obtained a *cure* of that disease, so far as enjoying complete immunity from its outward effects for twelve months. From this it will be seen that I wish to impute to syphilis, as a blood disease, one of the links of the chain of causation, in the production of this double mammary affection; and this is evident for the following reasons:—

Firstly. Because the disease set in simultaneously in both breasts, and with very unusual severity, which we rarely see in uncomplicated cases. The converse application of this argument is the same as that used by Mr. Campbell De Morgan in his paper on cancer, read before the Pathological Society of London, by which he proves cancer *not* to be of necessity a blood disease.

Secondly. Because there was a return of the old nocturnal pains, headache, etc., shortly after the confinement and with the setting in of the mammary trouble. These two circumstances, it will be seen, form strong bases for the supposition of there being traces of the syphilitic poison still lurking in the system, and that the mild, specific course of treatment she had undergone twelve months previously had not eradicated, but merely rendered latent the disease for a time, awaiting, as it was, the opportunity of some slight exciting cause to make itself manifest again. This is what we now know to be the case. According to the late teachings of Mr. Jonathan Hutchinson, the system can be freed *completely* or *partially* from the poison of syphilis through the agency of the antidotal properties of mercury, the result depending upon the mode of administration and length of the course to which the patient is subjected. This is but one of the many examples we see of the peculiar and unexpected phases in which syphilis is capable of showing itself in an indirect manner.

Whether it is through the agency of a pathological cause or the revolutionary changes produced in the system by a physiological process, with excited functional activity in a part, is, in all probability, a matter of accident.

In the above case I could find no local cause whatever to account for the result, prior to the ordinary symptoms of deep seated inflammation, beyond the fact that the mammary glands were in the usual state of high functional activity, thus rendering them the most likely seats of election for any retrograde or morbid action to attack; favoured by a constitutional bias or state of lowered vitality induced by the presence of a specific poison, which we know to be resident in the system at the time. I remember well a case which struck me forcibly when in medical charge of Lisbon Royal Naval Hospital, during the winter of 1871, of a marine, admitted with symptoms of phthisis. His history told that he had been under treatment nine years previously at Haslar R. N. Hospital, Portsmouth, for secondary syphilis, contracted in China, where some of the most virulent forms of the disease occur. During the three or four weeks prior to his admission he had several attacks of hæmoptysis, which first originated from a slight cold, caught while on deck at sentry duty. He was a very powerfully built man, well nourished, and with no family history whatever of tuberculosis. His conduct papers showed, however, that he had been a very hard drinker from the time of his enlistment up to three years previous to his present illness, during which time he had been a total abstainer. He remained in hospital under treatment for about four weeks, when, finding he was getting stronger and better, due principally to change of air, he expressed a wish to be sent home to his friends. He went home, was surveyed and invalided as unfit for further service. After this he was, of course, lost sight of. The question here is, "Would so serious a pathological result as hæmoptysis have occurred from so slight a cause, had the system not been in some way under the influence of a specific blood poison?" *I think not.*

I remember another case of a fine young blue-jacket, who fell from aloft to the deck of a ship in Portsmouth Dockyard, sustaining a simple fracture of the left thigh. He was conveyed immediately to Haslar Hospital, where every possible care was taken of him, notwithstanding which sloughing over the site of fracture set in and in a short time a large slough came away, converting the simple into a compound fracture of alarming magnitude. Large pieces of necrosed bone were cast off from time to time. At last, after two or three weeks, the wound began to granulate and everything was doing well, when, quite suddenly, he began to cough and spit blood, all the symptoms of phthisis following rapidly one upon the other until he died at the end of about four months illness. After death it was found that very imperfect union had taken place in the fracture.

On examining this man's papers, it was found that he had been under treatment for secondary syphilis, two and a half years previously at the Royal Naval Hospital, Plymouth.

There are many other cases of a similar nature I could call to memory, but I hope these will be sufficient for the present.

313 ST. ANTOINE STREET,
MONTREAL, April 16.

Congenital malformation of male urethra. External Urethrotomy. By G. STARK, M.D., Milwaukee.

On the 7th of April, 1874, I delivered Mrs. S., after a somewhat tedious labour, of a healthy male child. On visiting her on the following day, I was told that the infant had not made water since its birth; and on making an examination, I ascertained that the prepuce was attached to the glans penis in such a way, that the raphe was to the left of the median line. A depression marked the spot at which the meatus urinarius should have been, but no open-

ing existed. Having satisfied myself that there was no opening, and having secured the consent of the parents to an operation, I went home to procure the necessary instruments, and returned to the house.

Thinking that the malformation was probably membranous, as is usually the case, I tried for some time to overcome the occlusion, but was not successful in striking the urethra. As I was then satisfied that the malformation was not membranous, I determined to perform the operation of external urethrotomy. The child being placed upon the nurse's knees, with the thighs fixed upon the abdomen, and the feet firmly held, I made the skin tight with the finger and thumb of my left hand, and made an incision about an inch long in the line of the raphe, midway between the scrotum and the head of the penis. By pinching the skin over the dorsum of the penis, I made the wound gape; and then cut down upon the urethra, keeping exactly in the middle line, and then having bent the penis on the dorsum, in order that the urethra might be made as tense as possible, I placed the point of the knife upon the urethra and cut into it. I then passed a large-sized sewing-needle, with its head first, forward, and found it was arrested fully half an inch from the depression which took the place of the meatus urinarius. I then cut down on the head of the needle from the depression, passed the needle through, and having threaded it, I returned it, leaving the thread as a guide. I then sent for a No. 1 gum elastic bougie, and cutting a piece about three and a half inches long, I passed it into the urethra past the external cut, but not into the bladder. Just before I passed it the child made water. I directed the bougie to be left in five or six hours, and I brought the external wound together by a suture. From this time the child did well, and continued to pass water by the artificial passage. The bougie was kept in for a few hours each day, for three or four days, after which it was discontinued. The wound is now quite healed, and the child doing well.

Correspondence.

THE CANADA LANCET AND MEDICAL ETHICS.

To the Editor of the Canada Medical and Surgical Journal :

SIR,—Will you do me, and many other medical men, the favour to publish the following letter which the *Canada Lancet* declined to insert. It explains itself.

This *Globe* like conduct on the part of the *Lancet* is a striking commentary on the arrogant demand that it should be the universal organ of Ontario medical men.

Respectfully,

ETHICS.

Toronto, 9th June, 1874.

To the Editor of the Canada Lancet.

SIR,—I desire to express my strong dissent to the position you have assumed with regard to the question of medical writers in the public press in connection with legislation upon medical matters. In my former letter I spoke only of the general principle involved. You have raised another question—"Did the communication which appeared in the public press during the recent Parliamentary action have any influence one way or the other?" On this point I have no hesitation in declaring my belief that had it not been for these public letters Baxter's bill would at least have met with far greater opposition, not only from the members of the Legislature, but from the medical men throughout the Province.

With respect to the general principle, I must again express my astonishment at the doctrine that a medical man ought not to write, or if you prefer "figure," in the general press, even though that press is engaged in misrepresentation of his profession. Notwithstanding the

fact that the Legislative Assembly, elected by the public, has before it a measure affecting the welfare of the profession, and efforts are being earnestly made to defeat that measure, the medical man must not write in the daily press lest, forsooth, some censorious person will believe the writer is trying "to exalt his own personality." No matter that the *Globe*, the organ of the dominant political party, a widely circulated paper, and the principal source of information for a large number of the members of Parliament, commences a warfare against the Medical Bill and against the whole profession. It is true what is written in the *Globe* will be read by thousands who never see a medical journal; but never mind, they must not have an opportunity of reading both sides of the question lest the medical writer should thereby "exalt his own personality." I venture to use the strong words that this is a monstrous doctrine which does not obtain in relation to other professions, nor in the medical, in any part of the world.

But I wish to go further, and affirm my belief that when a question arises between the medical profession and the public, the secular press is the only channel in which a public discussion can be conducted. A medical journal is unsuited for that purpose, whether its circulation be large or limited, its arguments forcible or foolish. For a medical journal to arrogate to itself the exclusive right to promulgate the views of the profession upon matters pertaining to its public standing, and to "send marked copies to non-medical persons, allows one to intimate that it looks a little like an effort to exalt his own personality." Some would object to this outside circulation of medical literature and *anatomical plates* on other grounds.

It was unnecessary to send such information to the medical members of Parliament, for there were plenty of coals at Newcastle, while the other members were far more likely to be guided by what appeared in the morning papers which they invariably read, than by anything in a medical journal which might be merely glanced at.

If the foregoing be true, it follows that with respect to the recent legislation the public papers exerted mostly all the influence effected by the Fourth Estate. Had there not been a probability of accomplishing something the *Globe* would not have led the attack against the bill, and suppressed communications it found inconvenient to refute. And, moreover, it must be remembered that the hostility of the *Globe* had to be promptly met. The Committee—the Parliament—would hardly wait, perhaps a month, to see what some writer in *The Lancet* had to say in reply to statements circulated by the *Globe*.

In conclusion, I beg to say that I would prefer to have my communications returned than have them published in any way mutilated.

Yours, &c.,

ETHICS.

Toronto, May 18, 1874.

A case of Mania, with Atrophy of the Brain, etc. By J. LOCKHART CLARKE, M.D., F.R.S., etc., Physician to the Hospital for Diseases of the Nervous System.

Mrs. G., aged 76, was exceedingly emaciated, and had for many years suffered severely from asthma, for which a seton had been inserted, fifteen years back, in the left arm. The paroxysms of asthma gradually diminished in strength and frequency, and for the last two or three years had almost disappeared, so that the seton was removed. Some months after the removal of the seton, she fell down without losing consciousness, but was unable to get up, or to speak, during the space of half an hour. After this attack, she frequently complained of giddiness and loss of memory. Some months later, the giddiness increased; she became weak and thin, and was somewhat excited, but suffered no headache whatever. One morning she fell down immediately after getting out of bed, and was quite unable to raise herself, but she retained consciousness. She soon got better, and continued to improve for a few months, when she suddenly became

extremely excited, sitting up in bed and throwing about her arms or wringing her hands in apparent mental distress or despair, although, as I ascertained from her family, she had no actual grounds for any feelings of the kind. When I asked her what she wanted, she replied that she wished to die, that she had been wicked, and frequently she concluded by saying that she did not know what she wanted. On every other subject she was perfectly rational. She scarcely ever slept for long together without opium. This state of excitement lasted about two months, and was succeeded by greater weakness, by further loss of memory, and by giddiness. About six months later, another period of mental excitement commenced. During the whole day and night, except when she happened to fall asleep for a short time, she would try to get out of bed and wander about the house, or would sit up in bed throwing about her arms and turning up her eyes as if in despair, and crying frequently aloud—"Oh dear, what shall I do?" She was wholly unable, however, to give any definite or intelligible account of her mental suffering. Morphia and chloroform procured her some sleep at night. At the end of about three weeks, she became impressed with the notion that the house was on fire, and would frequently get out of bed and attempt to go downstairs for the purpose of escaping from the supposed danger; but, when prevented from so doing, she would sit on the side of her bed and repeat, almost uninterruptedly, from morning till night, the following statement: "It is as I tell you; it's fire; it is as I say." On all other points she was quite rational, and knew every one that approached her. This state of excitement was subdued for a time by the inhalation of chloroform, which was used every night, but without inducing complete unconsciousness. About half an hour or an hour after the inhalation, she would fall soundly asleep until about five in the morning, when the same excitement returned, and she would then pass the day in repeating the same expressions. This state continued for about a month, during which time she frequently refused

to take food declaring that she was unable to swallow ; so that she was reduced to a state of great emaciation. Then she became quiet and comparatively calm, but still very uneasy and distressed in mind. For the first time, she complained of pain, all over her body. Her tongue was parched and dark brown ; her pulse rapid and extremely feeble. After remaining for about a week in this condition, she gradually and quietly sank.

Post Mortem Examination Forty Hours after Death.—April 15th, Weather not warm. Along each side of the falx cerebri, the membranes were closely adherent to each other, and firmly attached to the side of the falx and to the skull a little beyond it. The entire brain was very small and particularly globular in shape. The veins on its surface were full of dark-coloured blood, and several large clots were found in the longitudinal sinus. Beneath the arachnoid, a quantity of fluid was found in the sulci between the convolutions, which in some places were extremely atrophied. At the vertex, over a somewhat circular area of about an inch and a half in diameter, on each side of the longitudinal fissure, the convolutions were so atrophied, that the spaces between them were in some instances three quarters of an inch in breadth. It was over this space that the membranes were adherent to each other, as well as to the falx and skull. The quantity of fluid which ran out from beneath the arachnoid was about two ounces and a half. The substance of the hemispheres was not at all soft. When sliced, the grey portion presented its normal colour and consistence, and was not unusually vascular. The lateral ventricle contained a small quantity of fluid. The right optic thalamus was decidedly smaller than the left, and somewhat soft. The corpus striatum on the left side was decidedly small, soft, and altered in shape, being bent, as it were upon itself. The pons and medulla oblongata were very small.—*British Medical Journal.*

The relation between Arterial Tension and Albuminuria.

By F. A. MAHOMED, ESQ., Resident Medical Officer to the London Fever Hospital.

I do not desire to enter into a controversy with Dr. Johnson on the much vexed question of "capillary power"; for, although he naturally adheres to his theory of the stop-cock action of the arterioles, still I am not singular in believing in the existence of such a power; and Dr. Johnson must surely allow that the transudation of hæmoglobine, which is associated with high arterial tension, but absent in venous congestion, together with other facts brought forward in my paper and previous article, are strong proofs of its presence. They at least prove the occurrence of high pressure in the arterial capillaries; and he does not attempt to explain them otherwise, or to contradict them.

Dr. Johnson, however, not only mistakes my theory of the pathology of Bright's disease, but he lays down a rule and a challenge, to which I gladly respond. He says that "a true theory must be consistent with all ascertained facts"; and he then instances the high arterial pressure existing in cases of contracted kidney, and the small amount of albumen discoverable in the urine, as a condition that cannot be explained by my theory. Not only have I found my views to be "consistent with all ascertained facts," but I have solved by their assistance many problems which, when regarded from Dr. Johnson's point of view, are difficult of comprehension; such for instance, as intermittent albuminuria, rupture of capillaries and appearance of blood in the urine, the immediate relief afforded by purgatives, the production of dropsy, and the transudation of hæmoglobine.

With regard to the slight degree of albuminuria, accompanying contracted kidney, it may be explained as follows. The changes which precede and accompany cirrhosis of the kidney are peculiarly insidious in their commencement, gradual in their development, and prolonged in their existence. There is, therefore, at first a slight but gradually increasing want of relation between blood and tissue; this

produces a correspondingly slight, but also gradually increasing, condition of high tension in the arterial system. This increase of tension is too slight and too gradual to produce an albuminuria ; but it nevertheless, if allowed to continue and to increase, produces a thickening of the arterial walls, a hypertrophy of their muscular coats, and a hypertrophy of the heart. I believe it is this condition (when accompanied by a particular excretion by the skin or bowels, affording relief to the kidneys) that give rise to those changes described by Sir William Gull and Dr. Sutton as "arterio-capillary fibrosis," and stated by them occasionally to exist without marked change in the structure of the kidney. When at last this very gradual increase of pressure, which may require years for its development, reaches that degree which, in an acute case with healthy vessels, would give rise to a copious transudation of albumen, the walls of the capillaries and arterioles are so thickened that it is far more difficult to force through the albumen. For the same reason, the hæmoglobine is absent from the urine of these patients, in whom the high arterial tension is invariably well marked, but whose urine may be free from albumen. In such cases, slight constipation or chill (by arrested excretion) will produce that temporary existence or increase of albuminuria which is so characteristic of cirrhosis ; or a more severe constipation or chill will immediately give rise to the symptoms of the acute form of Bright's disease.

Again, Dr. Johnson states that he has been unable to discover any hypertrophy in the muscular walls of the arterioles of the lung, produced by the existence of high pressure from the passive engorgement of these organs ; but, on the other hand, I have constantly seen thickening and endarteritis of the pulmonary vessels, demonstrated by Dr. Moxon as the result of "strain" from high pressure in these vessels, due to this cause.

Dr. Johnson considers a similar "unity of action" to exist between the heart and muscular arterioles, as between the detrusor urinæ and the sphincter vesicæ, or between the

muscular walls of the rectum and the sphincter ani. I, however, am unable to perceive the resemblance; for while, in the former case, according to Dr. Johnson, the heart and arteries are simultaneously contracting and acting in opposition, in the two latter instances, while the expulsors contract, the sphincters are relaxed, and *vice versa*.

Finally, Dr. Johnson has entirely misapprehended my theory of the production of the pathological changes; he has omitted the most important step in the process. Given the predisposing condition of blood-poison and high tension, from capillary obstruction, I do not believe that any acute kidney-change would be produced without the occurrence of another most important condition—namely, arrested action of one of the excretory organs, either bowels or skin. This throws increased work on (and produces, therefore, congestion of) the kidney, and subsequent cell-proliferation—a somewhat different sequence of events from that described by Dr. Johnson as entailed by my theory.—*British Medical Journal*.

Fissure of the Anus in a child one year and a half old. By
J. HYDE HOUGHTON, Surgeon to the Guest Hospital,
Dudley.

On February 16th, 1874, I saw Nellie D., now one year and three-quarters old, a delicate small child, who had been dry-nursed since she was one month old. She had been inclined to be costive since infancy, but in May last the costiveness became aggravated, at which time I was consulted. The various ordinary means of regulating the bowels were had recourse to—aperients, diet, and enemata—but up to November 1873 no essential relief to the symptoms was afforded, and for some time past she never had a motion without aperients or enemata. She frequently went two or three days without relief to the bowels, and each act of defæcation was attended by violent pain, screaming, and crying. She would do all in her power to prevent

the action of the bowels, writhing about and screwing her knees together. She was in great pain for an hour after each motion, and the discharges were costive and sometimes streaked with blood and mucus. In November, I attempted to examine the anus, but, from her restlessness, it was impossible to get a fair view of the part, though I fancied I could see a small crack on the verge. On November 27th, I put her under chloroform and discovered a small fissure, and through this I at once made a superficial incision. The relief was immediate and permanent. From the day of the operation, all the symptoms entirely vanished, and her bowels have acted regularly and easily ever since. It need hardly be added that her health has greatly improved since the operation. I put this case on record, both on account of its rarity, and, as I hope, of its importance. I am not aware of any similar recorded case, and no author that I know of alludes to fissure in children. Bryant describes it as a disease of adult life, and Curling as a disease of middle life; whilst Erichsen, Hilton, and Quain make no allusion to it in childhood. I am induced to hope that the case will prove important in reference to the treatment of constipation in children. Every one who has seen much of the diseases of children, must be aware of the difficulty which exists in the treatment of constipation, and have been baffled in dealing with it. It is not my intention to enter upon that subject; the object of this short communication being simply to draw attention to the existence of one cause hitherto overlooked, in the hope that relief may be afforded to, at least, a few of these troublesome and painful cases.

P.S.—I met my little patient with its mother a few days ago, and was informed that there had not been any difficulty with the bowels since the operation had been performed.—

British Medical Journal.

Remarkable Case of Heart Disease: Septum Ovale open, and Inferior Vena Cava opening into Left Auricle; no Cyanosis. By ARTHUR E. T. LONGHURST, M.D., 4th Batt., 60th Rifles.

The subject of this very singular case was a man with a well built frame, good muscular development, and 5 ft. 4 in. in height. At the age of nineteen he enlisted into the 60th Rifles, having been for seven years previously in the Royal Navy, and was in possession of the Baltic medal for services on Board H.M., frigate *Nile* during the Crimean war. He embarked with his battalion for Canada in June, 1861; and without being habitually intemperate, he kept up his habits of sea life, taking stimulants pretty freely. His father died young, cause of death unknown; but he said his family were healthy, and his mother, who was with him constantly for some time before his death, was certainly a very healthy-looking old woman. He enjoyed good health in Canada being always considered a strong muscular little man, ready for anything, and was for three summers employed as one of a boats' crew on the river St. Lawrence and Lake Ontario in the service of the General Officer commanding. He had a mild attack of syphilis in 1868, not treated by mercury, and not followed by secondaries; and returned to England with his battalion in the summer of 1869, in good health, going through field days at Aldershot and the autumn manœuvres for three seasons without inconvenience. Was tapped for hydrocele in 1872, and in December of that year was in hospital for gout in the right foot, being at times dyspeptic, but never had acute rheumatism.

He came to hospital on October 16th, 1873, complaining of extreme weakness amounting at times to syncope. He looked very ill, was deadly pale, respiration rapid and laboured, heart's action extremely quick and extended, with regurgitation into the veins at the base of the neck; legs œdematous. Auscultation revealed pulmonic congestion, especially of the left side, and extensive valvular disease of the heart, the exact nature of which could not be at once determined

owing to the very rapid action—144 a minute, with weak and irregular rhythm. Having for some months been employed as clerk in the battalion orderly room, he had not been called upon to undergo much exertion and fatigue, but said that for the last few months he had been subject occasionally to dyspnœa, and that since arrival at Portland, in June, the dyspnœa had increased with increasing debility, making it difficult for him to ascend the hill to the citadel, a height of nearly 500 ft. from the sea level. He was ordered a purgative, counter-irritation to back of the left lung, diaphoretic and digitalis. The symptoms were relieved; and on the 18th, two days later, a systolic bruit was heard just below the nipple, carried downwards, and very extensive cardiac hypertrophy was diagnosed, dulness extending towards the xiphoid cartilage and epigastrium, with giddiness and a confused, uncomfortable feeling in the head. Urine acid, depositing lithates, and slightly albuminous.

Oct. 24th. Pulse irregular, three rapid beats and then a pause; respiration 24, easy; no cough nor expectoration, but some gouty pain in the knee.

25th.—Had a sudden attack of extreme dyspnœa, passing into a state resembling the clonic stage of an epileptic fit, but ending in coldness and exhaustion; and was considered due to pulmonary embolism. Ordered brandy and digitalis, under which the symptoms subsided to some extent; and on the 26th the pulse intermitted less frequently.

28th.—Sounds of the heart distinct and without bruit; impulse forcible, and widely extended upwards and to the right.

A fortnight later the pulse was down to 100; the sounds of the heart were clear and without bruit, but intermitting, three rapid beats and then a pause in length of two beats; the pulse at the wrist not corresponding to the heart in number of beats.

At the end of a month the rhythm was still irregular, pulse 132, respiration 32, the dropsy increasing. Digitalis continued. By Dec. 6th the frequency of the pulse fell to

74, but the intermission continued about every third beat. The digitalis was omitted, and the pulse again rose from 100 to 144.

On Dec. 15th the sounds of the heart were rather muffled and running into each other, but there was no bruit. On the 20th the sounds were quite regular, but there was a roughness with the diastole, and the pulse was 140.

From this date the general symptoms advanced rapidly, especially the dropsy, necessitating paracentesis abdominis on Jan. 4th, 1874, when two gallons of clear yellow serum were drawn off, with much temporary relief: but the abdomen soon refilled, with an accession of all the symptoms. No marked change, however, occurred in the heart sounds, which continued regular, quick, and feeble, without bruit. The operation of paracentesis was three times repeated with relief, but the patient grew weaker, and sank on Feb. 9th, four months from date of admission, his age being thirty-six.

Autopsy, twelve hours after death.—Body of a marked icteric hue, not at all blue or venous in appearance; upper half wasted, lower half œdematous. Abdomen much and uniformly distended, but without enlarged veins.—Thorax: Muscular coverings wasted; cartilages of ribs ossified. Right lung forced upwards, much congested, and intimately attached to the side by old adhesions. Left lung in a similar condition, but atrophied, and occupying only the mere apex of the thoracic cavity; the remainder of this space being occupied by an immensely hypertrophied heart, enlarged from above downwards, the shape of a distended stomach with a slight constriction across the left third, weighing, with adherent pericardium, attached vessels, and blood-clots, 2 lb. 9½oz., and clear of these 2lb. 1½oz. The right auricle, being laid open, was found extremely dilated and full of dark jelly-like clots. The superior vena cava opened into the appendix, and was also dilated; the foramen ovale was only partially closed, there being three crescentic openings, the size of a pea, in the lower border of the sep-

tum, each having a raised and well-defined margin, giving to the septum at this point a cribriform appearance. The opening of the inferior vena cava was absent; the coronary vein was extremely enlarged; the Eustachian and Thebesian valves were well marked, and the diameter of the auriculo-ventricular opening was 1.67 in.; the lappets of the valves were thickened, puckered, and imperfect. The left auricle was dilated, full of jelly-like clots, and having in addition to its ordinary opening, that of the inferior vena cava, and at a point posteriorly and inferiorly and on the same plane, but posterior to the mitral orifice; the direction of this opening being clearly towards the cribriform septum ovale whilst the pulmonary veins opened into the auricle superiorly, and their direction was towards the mitral orifice, the diameter of which was 1.45 in., and its valves were normal. The right ventricle was full of the same jelly-like clots, but did not offer any point for special notice; diameter of pulmonary artery, 1.18 in. The left ventricle formed the greater part of the entire weight of the heart; its apex being prolonged through a wide mouth into a large sacculated aneurism, the size of an ordinary orange, which was filled with layers of laminated fibrine; the external ones honeycombed and dense, the interior ones lying next the cavity of the ventricle being softer masses and without determinate form and character. The ventricular walls were slightly thickened, but prolonged for a short distance into the aneurismal walls, the limiting membrane of the main dilatation being composed of the adherent and thickened pericardium, on the outer edge of which was a bony plate or spicula, the results of a tissue degeneration. The aorta was thin and flabby; no atheroma observed. Diameter of aortic opening, 1.03 in. Valves healthy. No fibrinous clots in the heart or great vessels.—Abdomen: Liver rounded and contracted on its surface; capsule densely thickened; weight 2 lb. 7½ oz.; tissue presenting an excellent example of Cirrhosis. Kidneys small and contracted; two cysts in the cortical substance of the

left, lined by a distinct membrane, and containing a serous looking fluid, with a depressed, yellow, cheesy-looking spot, found on section to extend inwards to the base of the pyramid, its exact nature being uncertain, but like the remains of the wall of a cyst such as that noted on the surface. Some serum and flaky lymph in the cavity of the peritoneum. Intestines distended and inflamed, and some of the intestinal convolutions glued together by recent lymph.

Remarks.—A consideration of the following points in this very remarkable and apparently unique case will, I think, be full of interest, and perhaps enable us the better to understand it.

1. The changes in the anatomy of the heart: (a) congenital; (b) structural, as the result of disease, or of both causes combined.
2. The changes in the adult circulation.
3. Perfect health and vigour up to thirty-five years of age.
4. The absence of cyanosis.
5. Absence of physical signs of congenital change.
6. Their comparative significance and variableness during the last few months of life, whilst under observation.
7. The determining cause of the aneurism.

1. The congenital changes, then, were as follows:—(1) Superior vena cava opening into the appendix of the right auricle, which, together with the auricle itself, was extremely dilated. (2) Absence of the inferior vena cava from the right auricle. (3) A cribriform condition of the septum ovale. (4) The extremely large size of the coronary vein. (5) The inferior vena cava opening into the left auricle, in the position and manner detailed.

The disease changes were:—(1) Adherent pericardium. (2) Dilatation of cavities of the heart. (3) Thickened and puckered state of right auriculo-ventricular valve. (4) Thickening of left ventricular walls, which were prolonged for a short distance into (5) a large aneurism of the ventricle. (6) Increase in weight of heart, to 2 lb. 1½ oz.

2. The changes from the ordinary course of the adult cir-

culatation were as follows:—The blood of the lower half of the body brought by the inferior vena cava, instead of passing into the right auricle direct, was carried first into the left, thence probably through the cribriform septum ovale into the right auricle, establishing thus a double current in the left auricle, composed of (a) venous blood, brought by the inferior cava for passage through the cribriform septum ovale into the right auricle, there to mingle with the stream from the superior cava passing into the right ventricle, thence into the lungs; and (b) arterial blood brought from the lungs by the pulmonary veins for passage into the left ventricle, thence to the aorta.

A consideration, then, of the above two conditions—viz., the changes in the anatomy of the heart, and the changes in the course of the circulation—may help us; but for a full and clear explanation of the case we must revert to the conditions of foetal life.

It is, I think, evident that a communication between the two auricles through the septum ovale was a necessary consequence of the inferior cava opening into the left, otherwise the two currents of venous and arterial blood must have mixed freely. Again, the points of openings of the vessels and their directions, the alteration in the size of the chambers, &c., would materially influence the currents—e. g., the site of opening of the inferior cava and its direction towards the cribriform septum, and the openings of the pulmonary veins in a direction towards the mitral orifice, might enable the blood currents in the left auricle to pass each other, without very greatly commingling; there must however, have been some slight admixture of venous and arterial blood in the left auricle, although apparently very small, from the absence of cyanosis; for granting that the blood currents from the inferior cava passed into the right auricle through the septum ovale, yet, on the contraction of the right auricle, some venous blood must have regurgitated through the opening into the left auricle, although the major part of it may have gone into the ventricle in the ordinary course.

I have said, however, that we must look to the conditions of foetal life for a complete understanding of the case, and those conditions will, I think, render it pretty clear ; for we know that during the very early development of the foetal heart there is but one auricle, which subsequently becomes divided by the development of a septum ; and that though for a time the inferior vena cava does open direct into the left auricle, yet that with increasing growth and development the septum rises up on the left side of the entrance of the vein, and thus causes it, together with the superior vena cava, to open into the right auricle. We see therefore, that the peculiarity in the present instance is really a remnant of very early foetal life, yet that during that stage of foetal development the course of the blood was from the right to left auricle ; whilst in the case under consideration, in adult life, the course of the stream was reversed. That such a condition should have continued into adult life, and that the subject should have enjoyed perfect health and strength, is not the less remarkable and more than that the course of the circulation, thus altered should have flowed so evenly.

With regard to the conditions Nos. 3 and 4 noted, and referring to the health and constitutional vigour enjoyed by the subject, and the absence of cyanosis, it is, I believe generally considered that the imperfect development which results in a direct communication between the two sides of the heart gives rise either to palpitation, dyspnœa, and an enfeebled existence, or to very early death ; yet the subject in the present case was unusually strong and muscular, as stated, being known amongst his comrades as the little lion of the battalion, of free habit of life, and always ready for anything ; and that he should have exhibited no sign of cyanosis is equally remarkable, unless the fact of the inferior cava opening into the left auricle in a line with the apertures in the septum, and so directing the current of the blood, may be sufficient to explain its absence ; whilst we cannot here fail to be struck with the infinite power, wisdom,

and skill by which Nature adapts herself to circumstances ; or, in other words—if, indeed, we may venture to consider her as capable of error—how easily, having got into a difficulty, she rights herself ; for surely, as above suggested, having put the inferior cava into the left auricle, she then left the septum ovale open, intending thereby, or in that way, to complete her form of creation, and to fit the creature for the work of life.

A consideration of points 5 and 6, as to absence of physical signs of patent septum ovale, is also surprising, a loud superficial murmur being usually heard over the site of the communication : but in the various examinations through which this subject has passed from time to time during a period of fifteen years' service nothing abnormal was ever detected, whilst its absence seems to prove that the passage of the blood through the cribriform septum into the right auricle was tolerably smooth and even, and the variableness and comparative insignificance of the physical signs of disease whilst under observation during the last few months of life was singular enough.

The physical signs on admission into hospital indicated a diseased condition of the tricuspid valves allowing of regurgitation, whilst percussion declared the hypertrophy, and both these conditions were realized in the post-mortem examination. As disease progressed the pulse became irregular, that at the wrist not corresponding to the beats of the heart either in force or frequency, whilst the tricuspid bruit disappeared entirely ; and the fits of dyspnoea, with symptoms apparently due to pulmonary embolism at times observed, seemed fairly attributable to the altered condition of the heart and its valves as the result of disease quite irrespective of the congenital changes.

Lastly, as regards No. 7, the determining cause of the aneurism. Was it a strain in rowing, or some other act of over-exertion ; tissue degeneration in the muscular structure of the ventricle in a man of free habit of life, of a gouty diathesis, having a bony plate or spicula on the limiting

wall of the aneurism; or could it be at all of a congenital nature, originating partly in deficiency, more or less, of the muscular layers at the apex, or to changes in the force or direction of the blood-currents, consequent on the patent foramen ovale and other congenital irregularities?

The microscopical examination of the structure of the left ventricle walls by Dr. Welch, Assistant Professor of Pathology at Netley, and who, in conjunction with my valued friend and brother medical officer in the battalion, Dr. Harman, has so kindly aided my attempts towards a clear report of this very interesting and unusual case, failed to detect syphilitic or other precise tissue degeneration. Hence Dr. Welch is disposed to attribute the aneurism to some congenital deficiency in the muscular layers at the apex of the ventricle, where they are always the thinnest; but I incline to the belief that, with any congenital defect there, adult life would not have been reached, or if reached, the subject of such defect would not have been what he was in the present instance.

Consequently, though the microscope did fail to detect tissue degeneration, as there was an ossified state of the ribs, a bony plate on the pericardium, a diseased tricuspid valve, cirrhosis of liver, and contracted and diseased kidneys, showing that tissue change had for some time been going on in the ribs and other viscera of a man who had been addicted to the free use of spirits for years—itsself always so pregnant a source of tissue degeneration,—both Dr. Harman and myself are disposed to attribute the aneurism, to a strain in rowing, or some other violent exertion, by which a weak point in the ventricle was established, and which eventually yielded to subsequent pressure and tissue degeneration, and that at most the congenital condition of the ventricle and the anatomical changes in the heart were only secondary causes in operation.—*Lancet*.

Verne Citadel, Portland.

*Poisoning from Corrosive Sublimate Generated in the Mouth
from Amalgam Plugs in the Teeth.*

Having been invited by an eminent gentleman of the medical profession to attend a convention of the State Medical Society to submit to its consideration a matter of vital importance to the human family, and being unable to comply with the invitation, I have written this article to lay the matter before the medical profession and ask its co-operation.

The matter which I wished to bring to the notice of the profession is the poisoning of thousands of people all over the world, from corrosive sublimate generated in the mouth from amalgam plugs in the teeth. Neither Asiatic cholera, nor smallpox, nor any malarious disease, is doing half the mischief in the world that is being done by this poisoning. Every medical man of any considerable practice has undoubtedly had numerous cases of it, but never knew what it was. The symptoms are so numerous and varied in different cases that it would be impossible to give them all in this short article, but I will say that a person poisoned in this way is liable to be treated for dyspepsia, neuralgia, paralysis, consumption, and numerous throat diseases. The patient gradually wastes away as if going into a decline, and no medicine will afford any relief. In many cases the difficulty steals on so gently as not to excite the least alarm, and continues very gradually for a number of years till the patient becomes a total wreck; while in others the attack comes on violently, and the friends and the attending physician think the patient is dying; but he will again rally, and again be prostrated.

There is such a resemblance in the symptoms to nearly all the diseases to which human flesh is heir that the physician is led to treat the patient for some disease which seems to be a very clear case, but his patient gets worse. In more than twenty cases that I have had, nearly all had been pronounced by some physician as having consumption. In nearly all the cases there are at times a very bad

cough, eyes sunken, and haggard expression and deep blue or dark color under the eyes, invariably a metallic taste in the mouth, water flowing from the mouth in the night while asleep so as to wet the pillow, and in most cases extreme prostration.

I have not time now to detail the manner in which the corrosive sublimate is formed in the mouth, further than to say that the quicksilver in the plugs is driven off by the heat of the mouth in very minute particles, and, combining with the chlorine in the fluids of the mouth, or any saline substance, such as our food, passes into the stomach, and produces slow poisoning. If the State Medical Society will appoint a committee to visit this place, I will show them several cases that will place the matter beyond controversy.

There are some twelve thousand dentists in the United States doing a wholesale business at this poisoning, and I ask the co-operation of the State Medical Society, as guardians of the public health, to assist in getting an act of Congress passed making it a penitentiary offence to place any poisonous substance in teeth that will injure the people.—*F. Payne, D. D. S. in Chicago Medical Journal.*

Practical Notes on Cutaneous Subjects. BY TILBURY FOX, M.D., Lond., F.R.C.P., Physician to the Department for Skin Diseases in University College Hospital.

SCABIES IN PRIVATE PRACTICE.

It is important to remark that scabies often differs very much in aspect, according as it occurs in hospital or in private practice. Amongst the poor, and especially the uncleanly, the burrowings of the acari in the skin are attended with the formation of papules, vesicles, pustules, wheals, &c., in abundance. But amongst the well-to-do, and particularly those who observe great cleanliness, the ordinary results of the irritation produced by the acari may be almost, if not entirely absent. So that if a student were to be guided by the ordinary descriptions given in books of

scabies, he would certainly not be able to diagnose the scabies present. The disease would not answer in description to papular, pustular, or vesicular scabies, and yet true scabies might be present. I have seen several cases lately in which patients complained of itching intensified at night, in different parts of the body, and in whose skin nothing could be detected but a few cuniculi about the hands, or the penis, and an apology for a vesicle here and there. I have seen a multitude of acarian furrows about the hands and other parts in a case of scabies, and nothing else. In other cases I have observed just a few very fine, delicate, pale, flesh-coloured papules, the result of irritation set up by acari present in the skin, and nothing more; and those, which were lichenous papules, were difficult to make out. In all cases in which a patient complains of itching aggravated at night, even though there be none of the ordinary evidences of scabies present, yet a diligent and active search for cuniculi should be made about the hands and penis. I have known patients treated with powerful internal remedies for "prurigo," lichen, and the like for weeks, whilst scabies, which existed, was wholly unsuspected because there were no papules and pustules present. Papules, pustules, and vesicles are indeed accidental accompaniments of scabies, which should be looked upon as consisting essentially of the acari in their furrows (cuniculi)—i.e., the real scabies, and the phenomena of irritation (papules, pustules, &c.) super-added, which, under certain circumstances, may be entirely absent.

SCABIES OF THE PENIS.

Two or three cases of scabies limited to the penis have recently come under my notice. In all of the cases careful search detected cuniculi. In two, suppurating buboes were produced by the irritation, and the disease was thought to be syphilitic. The diagnosis was rendered easy by the absence of any decided induration about the scabies spots; their vesico-pustular origin, pruritus intensified at night, the presence of cuniculi, and the absence of any concomitant evidence of syphilis.—*Lancet*.

CANADA

Medical and Surgical Journal.

MONTREAL, JULY, 1874.

CANADIAN MEDICAL ASSOCIATION.

At the meeting of this Association held at Halifax, Nova Scotia in September last, it was unanimously determined that the annual gathering this year should take place at Niagara Falls, on Wednesday 5th August, 1874. We understand that recently Dr. Canniff of Toronto, chairman of the Committee of Reception, with Dr. Mullen of Hamilton, proceeded to the Falls and made arrangements with the well known proprietors of the Clifton House, Messrs. George M. Colburn & John H. McOmber, who, with accustomed liberality have manifested their interest in the success of the meeting by offering to entertain the members of the Association, and their wives and daughters at reduced rates. This generosity is the more noteworthy when it is considered that the month of August is generally selected by Tourists to visit the renowned scenery of Niagara Falls and when the Hotels are generally well filled with guests. Every exertion will be put forth by the Committee to entertain their guests and to acquaint the members of the Association of the reception they may expect.

We hope there will be a large gathering as subjects of importance to the profession throughout the Dominion, will be submitted to the meeting, and which, if calmly and judiciously entered upon will do much to allay the feeling of irritation which generally prevails, especially in Ontario, in view of recent legislation. The Medical Association should be more than merely a social gathering,

although we should regret to see the apple of discord thrown in amongst its members. Sooner than that should occur it would be more preferable to drop medical politics altogether.

These meetings of the various sections of our country generally bring together representative men, and afford an excellent opportunity for united action as well as a free expression of the wants and requirements of each division of the Dominion. We hope to see a full meeting and an earnest desire on the part of all who attend to work harmoniously, as it will be for the benefit of the profession as a body. Medical legislation has hitherto been attended with doubtful results. In Ontario the profession have certainly a Medical Act which is in many respects highly beneficial; we should gladly see an attempt made to legislate for the Dominion, so that the anomaly should exist no longer of Registered Practitioners in one section of the country being denied the right of practising their art in any other section, without being forced to submit to further tests of proficiency by examination, and of paying high fees for the privilege.

There should exist among us as a profession an honorable rivalry to advance the tone and character of our calling; rivalry in elevating the quality and method of teaching in our schools. A high standard of preliminary education is exacted both in Ontario and Quebec, and is beginning already to show fruit in the sending forth of a better class of general practitioners. We may hope for the dawn of that period when our profession will assume that position in the scientific world which it lacks at the present day. It may be argued, and with some truth that the Canadian Medical Association was established purely and only for the purpose of bringing together members of the Profession from all parts of the Dominion purposely to discuss subjects connected with the scientific advancement of our profession, and that medical politics should not be broached. This is perhaps in the main true, but in the

present crude state of matters, it is greatly to be desired that a uniform system of examination should be secured. The question of a central examining board is one which has long engaged the attention of earnest thinkers, and it could, we believe, be carried, or at least an expression of opinion emanating from such a body as the Canadian Medical Association in favor of such a board, would go far to aid in its ultimately becoming the law of the land.

We hope and trust the subject will not be forgotten, or allowed to drop—and above all if it is discussed, we trust it will be taken up in all earnestness of purpose, but with temperance, prudence and brotherly love.

TRIENNIAL MEETING OF THE COLLEGE OF PHYSICIANS AND SURGEONS, L.C.

The Triennial Meeting of the "College of Physicians and Surgeons of Lower Canada," was held at the town of Sherbrooke, P.Q., on Wednesday, the 8th July inst.

The following gentlemen were present:—Drs. Scott, Howard, Peltier, Rottot, Robillard, Millette, F. W. Campbell, Hingston, Brigham, Gibson, Duchesneau, Russell, Rinfret, Tessier, Belleau, Marmette, Tetu, Pelletier, de St. Georges, Landry, Gilbert, Hamilton, Worthington and G. E. Fenwick. The attendance was small when it is considered that the profession is represented by upwards of 150 members of the College—each of whom are, or should be, interested in the success of the institution, and in the election of reliable men to carry on the important affairs of the Corporation.

Precisely at 10 o'clock A.M., the President, Dr. W. E. Scott, took the chair, and called the meeting to order. The Secretary for the District of Montreal, Dr. Rottot, read the minutes of the last Triennial meeting, which were duly approved.

The President then gave a synopsis of the proceedings of the College during the past three years. After which

the following gentlemen being licentiates of over four years, were proposed and seconded in due form; and the ballot having passed, were declared elected members of the College, viz.: Drs. John Reddy, W. Gardner, E. H. Trenholme, R. A. Kennedy, M. Millette, P. de St. Georges, F. X. Perrault, and D. T. Scholfield.

Two of the above named gentlemen being present, took their seats as members of the College.

Twenty-seven proxies were handed in, making the total number of votes represented, fifty in all. The following gentlemen were appointed a committee to examine the proxies, viz.: Drs. Marmette, Rinfret, Gibson, and the Secretary.

On motion, N. Mercer, Esq., of Montreal, representing the Pharmaceutical Association of the Province of Quebec, was invited to take a seat at this board.

Mr. Mercer submitted to the College the draft of a Bill to amend "the Act of Incorporation of the Pharmaceutical Association of the Province of Quebec, and to regulate the sale of Poisons," with a view of obtaining the concurrence of this College to the terms of the Bill.

A BILL

To Amend the Act of Incorporation of the PHARMACEUTICAL ASSOCIATION OF THE PROVINCE OF QUEBEC, and to Regulate the Sale of Poisons.

WHEREAS it is expedient for the safety of the public that all persons engaged in the sale of Drugs and Poisons, and the dispensing of Medicines; should possess a competent, practical knowledge of Chemistry, and other branches of useful knowledge; and whereas certain persons desirous of advancing Chemistry and Pharmacy, and of promoting a uniform system of educating those who should practice the same, formed themselves into a Society called the "Pharmaceutical Association of the Province of Quebec," which said Society was in the year of our Lord one thousand eight hundred and seventy incorporated by Her Majesty, by and with the advice of the Legislature of Quebec, whereby it was provided that the said Corporation should consist of persons to be called "Members," such persons being Chemists and Druggists who were and had been established in business on their own account prior to the passing of the Act of Incorporation, or who should have been examined in such manner and on such subjects as the Council of the said Corporation should deem proper, or should have been certified to be duly qualified for admission as Members; and also another class of persons called "Associates," who were clerks or apprentices of Chemists and Drug-

gists, who at the date of the passing of the Act of Incorporation, were Associates of the Montreal Chemists' Association, all Associates admitted after the passing of the Act, having first to be duly examined as to their skill and knowledge in such manner as the Council of the said Corporation should deem proper; and whereas, for the purposes of extending the benefits which have already resulted from the said Charter of Incorporation, it is desirable that additional powers be granted for regulating the qualifications of persons who may carry on the business of Pharmaceutical Chemists, or Chemists and Druggists, and for the regulation of the sale of Poisons, and for other purposes connected with Pharmacy, be it enacted by Her Majesty, by and with the advice and consent of the Legislature of Quebec:—

1. That the said Charter of Incorporation granted to the said Association and known as "The Pharmaceutical Association Act of 1870," save and except such part or parts thereof as are hereby altered, varied or repealed, shall be, and the same are hereby confirmed and declared to be, in full force and virtue, and shall be as good and effectual, to all intents and purposes, as if this Act had not been passed.

2. The Council of the said Pharmaceutical Association shall be, and the same are hereby authorized and empowered to alter and amend the By-laws of the said Association made and established under or in pursuance of the said Charter of Incorporation, and to make or establish such new or additional By-laws as they shall deem proper or necessary for the purposes contemplated by the said Charter or by this Act.

3. That the name of the Association shall be changed from that of the "Pharmaceutical Association of the Province of Quebec," to that of the "College of Pharmacy of the Province of Quebec."

4. That all persons in business on their own account as Dispensing Chemists or Apothecaries prior to the passing of this Act, or who have acted as Superintendents of a Chemist and Druggist's business for not less than 7 years, and being of full age, shall, upon producing evidence of the facts, be entitled to be placed upon the Register, and to be certified as "Licentiates in Pharmacy."

5. That all clerks who have been more than three years in the trade shall, after producing satisfactory evidence of the fact, and after undergoing a modified examination, be entitled to be placed on the Register, as "Certified Clerks."

6. That all clerks and apprentices who have not been three years in the trade shall go through the required curriculum of study and pass the examinations before they can be registered as "Certified Clerks."

7. That every youth, before he is taken as apprentice by a Licentiate of Pharmacy, shall produce satisfactory evidence of a good moral character, and pass a preliminary examination in the English, French and Latin languages, and Arithmetic, after which he shall be registered as a "Certified Apprentice."

8. That in addition to the preliminary examination for apprentices, there shall be two other examinations. The first to be called the "Minor Examination," shall be passed by all Certified Apprentices before they can take the position and become qualified as "Certified Clerks." The candidate shall be

examined in the Translation and Dispensing of Prescriptions, Pharmacy, Chemistry, especially the Chemistry of Poisons, Posology, and Materia Medica. After passing this examination the candidate shall be registered as a "Certified Clerk."

9. The second examination shall be called the "Major Examination," and shall embrace the same subjects as the "Minor Examination," but a knowledge of Botany and a more extended knowledge of Materia Medica and Pharmaceutical Chemistry will be required. The candidate must also produce evidence that he has served at least four years in a drug store and attended two courses of lectures on Materia Medica, two courses on Chemistry, and one course on Botany. After passing this examination, and producing the required Certificates, the candidate shall be registered as a "Licentiate of Pharmacy."

10. All the examinations referred to in the previous clauses—viz., the Preliminary Examination, the Minor Examination, and the Major Examination—shall take place and be regulated by such rules and regulations as may be in force at the time such examinations are held, and all candidates for any of the said examinations shall pay such fees as may be imposed by any such rules or by-laws.

11. The Council of the said Corporation for the time being, by themselves or such other competent persons as they should think fit to appoint, shall examine and decide upon the admission of Licentiates, certified Clerks and Certified Apprentices of the said Corporation, and grant such certificates or diplomas as they shall think proper to the persons whom they shall deem qualified to be such Licentiates, Certified Clerks, or Certified Apprentices respectively.

12. The Board of Examiners for the time being shall have power to dispense with the examinations herein provided for, and to accept in lieu thereof, authenticated certificates of examination in Pharmacy by duly appointed Medical or Pharmaceutical Boards, accompanied by certificates of good moral character, and subject to such other regulations as may be imposed by by-law.

13. The Registrar shall from time to time make out and maintain Registers of: 1st, Licentiates in Pharmacy; 2nd, Certified Clerks; and, 3rd, Certified Apprentices respectively; and shall grant on application, certificates of such Registration on payment of such fee as may be fixed by By-Law; and the said Registrar shall make new Registers for each year, and omit therefrom the names of persons deceased or transferred from one Register to another.

14. The Annual General Meeting of the College shall be held alternately in the Cities of Montreal and Quebec, on the second Tuesday in the month of June in each year, or such other day near thereto as shall be determined by the Council.

15. On and after the First day of May, 1875 it shall be unlawful for any person except a registered Licentiate or Member of the College of Physicians and Surgeons of Lower Canada, to keep open any store for the retailing, dispensing, or compounding of the Poisons enumerated in Schedule A, or to sell or dispense the said enumerated Poisons, or to engage in the dispensing of prescriptions, or to assume or use the title Chemist and Druggist, or Chemist

or Druggist, Apothecary or Pharmaceutist, or Pharmacist or Dispensing Chemist, within this Province, unless he be registered in accordance with the provisions of this Act as Licentiate in Pharmacy; and it shall be unlawful for any such Druggist, Chemist, Pharmaceutist or Pharmacist, to employ any clerk or apprentice in any shop or store for the sale of such Poisons or in the dispensing of Medicines, except such clerk or apprentice be registered as required by this Act.

16. Any person offending against the provisions of the preceding section, shall incur a penalty not exceeding _____ to be recovered before any Magistrate, together with costs; which said penalty and costs, in default of immediate payment, shall be enforced by distress; and in default of sufficient distress the defendant shall be liable to be imprisoned in the common gaol of the district for a period not exceeding ninety days, unless such penalty and costs be sooner paid; such penalty to be paid to the Treasurer, and to be applied to the general purposes of this Act.

17. If any person shall falsely represent by any name, title or description, that he is registered under this Act, or falsely represent the class or grade of his registration, or engage himself as a certified clerk, not being registered as such, he shall upon conviction before a Magistrate, be liable to a fine for, every such offence not exceeding _____ together with costs; which said penalty and costs, in default of payment, shall be enforced by distress and in default of sufficient distress, by imprisonment as provided by the preceding section; and no person competent to be a witness in any suit or prosecution in which the Corporation may be engaged, shall be deemed incompetent by reason of his being a member or officer of the said Corporation.

18. It shall be unlawful to sell any of the Poisons named in Schedule A, unless the box, bottle, vessel, wrapper, or cover in which such poison is contained, be distinctly labelled with the name of the article and the word "Poison," and with the name and address of the seller of the poison. And it shall be unlawful to sell any poison to any person unknown to the seller, unless introduced by a person known to the seller; and on every sale of any such article the seller shall, before delivery, make or cause to be made an entry in a book to be kept for that purpose, stating in the form set forth in Schedule B to this Act the date of the sale, the name and address of the purchaser, the name and quantity of the article sold, and the purpose for which it is stated by the purchaser to be required, to which entry the signature of the purchaser, and of the person, if any, who introduced him, shall be affixed; and any person selling Poison otherwise than is herein provided, shall, upon conviction before a Magistrate, be liable to a penalty not exceeding _____; and for the purposes of this section the person on whose behalf any sale is made by any apprentice or servant, shall be deemed to be the seller.

19. The several articles named or described in Schedule A shall be poison, within the meaning of this Act, and the Council of the said Corporation may, from time to time, by by-law, and with the concurrence and approval of the Board of Governors of the College of Physicians and Surgeons, declare that any article named in such by-law be deemed a poison within the meaning of

The Bill was read to the meeting, and several important suggestions were made to which Mr. Mercer agreed. It was not deemed advisable to discuss the Bill clause by clause, inasmuch as the College expressed a desire that the Pharmacutists should obtain for themselves Legislative authority to regulate their own curriculum. The following report was handed in and submitted to the meeting. The Committee on the Bill to amend the Act of Incorporation of the Pharmaceutical Association of the Province of Quebec, and to regulate the sale of Poisons, beg to report that at a meeting held on the 6th July instant, there were present as representing the College—Drs. Scott, Fenwick, Robillard, Peltier and Rottot, and on the part of the Pharmaceutical Association:—N. Mercer, and Henry Lyman, Esqrs., and that they concurred in the adoption of the said Bill as proposed by the Association with the following amendments:—

“That it shall be rendered compulsory for Students in Pharmacy, to qualify them for examination, to attend one or more courses of Lectures on Botany, Pharmacy, and Practical Chemistry, also that clause 15 of the Bill be amended as follows—After the words any person in the first line—there shall follow—except a registered Licentiate or Member of the College of Physicians and Surgeons of Lower Canada.

(Signed)

W. E. SCOTT, M.D., Chairman,
J. P. ROTTOT,
G. E. FENWICK,
E. ROBILLARD,
H. PELTIER.

It was then moved by Dr. Howard, seconded by Dr. Hingston, that the report be received and adopted—
Carried.

The next subject for discussion was the notice by the Hon. Dr. Ross, of Quebec, seconded by Dr. Dubé, of Riviere du Loup (*en bas*.)

“That at the next Triennial Meeting of the College, he

will propose amendments to the law concerning the Study and Practice of Medicine, Surgery, and Pharmacy; and that a Committee composed of Drs. Scott, Landry, Jackson, Ross and Dubé, be named to enquire into such amendments, and report at said meeting."

It was decided that in the absence of both the proposer and seconder of the above motion, and also inasmuch as no report from the Committee above named was forthcoming, that the subject would have to lie over for the present. The Committee reported that the following gentlemen had sent their proxies, and that they were entitled to vote having paid all dues, viz: Drs. G. W. Campbell, Craik, MacCallum, Drake, Schmidt, W. H. Taylor, Desjardins, Dagenais, Austin, Marsden, Roddick, G. Ross, A. G. Fenwick, J. P. Russell, Hon. J. J. Ross, Reddy, Weillbrenner, Girdwood, Church, Chamberlin, Gardner, Trenholme, Kennedy, Godfrey, F. X. Perrault, A. Brosseau, and D. T. Scholfield. The next business of the college was the election by ballot of 36 Governors to serve during the ensuing three years. Drs. Rinfret, Gibson, and G. E. Fenwick, were appointed to act as scrutineers, and the ballot having been taken, the members adjourned to allow the scrutineers time to make up their report. After re-assembling the following gentlemen were declared duly elected Governors for the ensuing three years:

For the city of Montreal, — Drs. Scott, Howard, Peltier, Rottot, Godfrey, Hingston, Robillard, and G. E. Fenwick,

For the District of Montreal.—Drs. Chamberlin, Weillbrenner, Brigham, Gibson, Church, Duchesneau, and F. X. Perrault.

For the city of Quebec.—Drs. J. E. J. Landry, R. H. Russell, Jackson, Tessier, Rinfret, Robitaille and Rousseau, and Belleau.

For the District of Quebec.—Dr. Michaud, L. J. E. Desjardins, Marmette, Dubé, Tetu, P. Pelletier and St. Georges.

For the District of St. Francis. — Drs. Worthington, Gilbert and Hamilton.

For the District of Three Rivers.—Drs. J. J. Ross, A. G. Fenwick and Landry.

The Governors elect then proceeded to chose by ballot the officers for the ensuing term of three years, with the following result :

President, R. H. Russell, M.D., Quebec ; Vice-Presidents, Drs. R. P. Howard and Marmette.

Secretary for Montreal, H. Peltier, M.D.

Secretary for Quebec, A. Belleau, M.D.

Registrar and Treasurer,—E. Robillard, M.D.

A vote of thanks was passed in favor of the retiring officers. It was unanimously decided that the next Triennial meeting to be held in July 1877, should take place in the town of Three Rivers, of which due notice will be given in the usual way by advertisement. The thanks of the College were proffered to the authorities of the Court House for the use of the Court rooms. No further business being before the college, the meeting was declared closed.

PERSONAL.

Dr. R. A. Stevenson, a graduate of the University of McGill College, of 1871, passed through Montreal last week on his way to England, where he intends to spend some time in attending the various London Hospitals. Dr. Stevenson has been practicing in Strathroy, Ont., and has secured by his gentlemanly address and professional skill not only a flourishing practice but also a numerous circle of friends. On his departure from Strathroy he was entertained at a supper by his friends, and presented with a purse of \$150, with which he was to purchase in England, a set of instruments, as a mark of the respect and esteem in which he is held by his fellow citizens.

We wish Dr. Stevenson all success in his visit to the mother country, and we are sure that he will derive not only pleasure but profit, from a view of the medical and surgical practice of the great lights of our profession in the old world.

ABSTRACT FOR THE MONTH OF APRIL, 1874.

| DAY. | THERMOMETER. | | | | | Mean. | BAROMETER. | | | | | Rain and Sleet. | Snow. Melted. | Constant + 0.10° used in all Barometer Readings. | |
|------------------|--------------|---------|---------|-------|-------|-------|------------|--------|---------|---------|---------|-----------------|---------------|--|-------|
| | a. m. | 3 p. m. | 9 p. m. | Mean. | Max. | | Min. | Range. | 9 a. m. | 3 p. m. | 9 p. m. | | | | Mean. |
| 1 | 8.5 | 24.5 | 17.5 | 19.5 | 25.5 | 0.5 | 25.0 | 30.330 | 30.145 | 30.087 | 30.181 | | | Coldest day. Greatest range ther. 35. | |
| 2 | 24.7 | 43.0 | 27.5 | 35.1 | 33.7 | 8.0 | 35.0 | 29.875 | 29.765 | 29.715 | 29.755 | ..... | 0.07 | | |
| 3 | 30.5 | 32.2 | 23.5 | 23.7 | 23.7 | 3.7 | 23.5 | .698 | 7.03 | 7.76 | 6.91 | ..... | ..... |  |  |
| 4 | 11.6 | 21.0 | 15.8 | 15.4 | 21.5 | 6.0 | 15.5 | 30.948 | 30.887 | 30.866 | 30.890 | ..... | ..... |  |  |
| 5 | 24.2 | 33.2 | 16.0 | 29.8 | 34.1 | 12.0 | 22.1 | 30.170 | 30.115 | 29.685 | 30.073 | ..... | ..... |  |  |
| 6 | 31.7 | 43.5 | 31.5 | 33.3 | 36.5 | 27.5 | 11.0 | 29.628 | 29.620 | 29.525 | 29.791 | | | Aurora midnight. | |
| 7 | 34.7 | 43.5 | 37.5 | 38.5 | 38.5 | 5.9 | 16.8 | .288 | 8.45 | 8.76 | 9.29 | ..... | Inapp. | | |
| 8 | 35.2 | 30.5 | 30.5 | 30.0 | 31.8 | 28.5 | 11.0 | 30.055 | 30.018 | 30.025 | 30.032 | ..... | 0.17 | | |
| 9 | 28.5 | 38.3 | 30.8 | 31.8 | 37.8 | 26.8 | 11.0 | 29.190 | 29.085 | 29.185 | 29.117 | ..... | ..... |  |  |
| 10 | 26.0 | 38.3 | 30.4 | 29.8 | 31.2 | 24.8 | 9.5 | 29.840 | 29.840 | 29.840 | 29.841 | | | Highest Barometer. | |
| 11 | 31.8 | 36.2 | 26.0 | 31.3 | 42.0 | 24.5 | 17.5 | .785 | 9.43 | 10.425 | 9.609 | ..... | 0.15 | | |
| 12 | 18.0 | 38.2 | 25.0 | 25.0 | 32.0 | 10.2 | 22.1 | 30.385 | 30.258 | 30.425 | 30.413 | | | Warmest day. | |
| 13 | 42.5 | 40.5 | 33.7 | 31.4 | 43.0 | 20.7 | 21.3 | .458 | 4.87 | 1.32 | 2.27 | ..... | ..... |  |  |
| 14 | 42.5 | 52.5 | 43.5 | 46.1 | 53.2 | 38.5 | 14.7 | 29.487 | 29.487 | 29.775 | 29.866 | ..... | ..... |  |  |
| 15 | 48.6 | 49.8 | 49.8 | 49.9 | 53.2 | 25.0 | 14.3 | .657 | 5.97 | 5.96 | 6.17 | ..... | ..... |  |  |
| 16 | 31.5 | 38.5 | 32.7 | 34.2 | 37.1 | 26.8 | 10.3 | 30.060 | 30.195 | 30.198 | 30.151 | ..... | ..... |  |  |
| 17 | 32.0 | ..... | ..... | 32.0 | 37.1 | 26.8 | 10.3 | .288 | 8.17 | 8.17 | 8.17 | ..... | ..... |  |  |
| 18 | 36.0 | 51.0 | | 36.0 | 47.8 | 21.1 | 23.7 | | | | | | | Snow, sleet and rain. | |
| 19 | 37.0 | 51.0 | ..... | 37.0 | 40.2 | 17.8 | 10.0 | 187 | 30.205 | 30.285 | 30.229 | ..... | 0.84 | | |
| 20 | 31.8 | 31.5 | 34.0 | 31.4 | 34.8 | 30.2 | 4.6 | 137 | 29.873 | 29.615 | 29.575 | ..... | ..... |  |  |
| 21 | 35.8 | 37.0 | 34.0 | 35.7 | 37.6 | 32.5 | 5.0 | 29.498 | 29.498 | 29.705 | 29.682 | ..... | Inapp. | | |
| 22 | 38.5 | 42.0 | 37.0 | 39.1 | 44.2 | 27.5 | 16.7 | .687 | .688 | .688 | .688 | ..... | ..... |  |  |
| 23 | 38.5 | 43.0 | 38.2 | 38.2 | 43.8 | 29.8 | 14.5 | 30.005 | 30.118 | 30.106 | 30.126 | | 0.11 | Snow and rain. | |
| 24 | 39.2 | 43.7 | 36.0 | 38.5 | 43.8 | 29.8 | 14.8 | 30.085 | 30.118 | 30.106 | 30.126 | ..... | ..... |  |  |
| 25 | 43.2 | 48.7 | 39.8 | 43.5 | 49.8 | 27.0 | 22.8 | 30.105 | 29.641 | 29.778 | 29.678 | | | First vessel entered port. Snow storm. Least range ther. 3.2 | |
| 26 | 43.2 | 48.7 | 39.8 | 43.5 | 49.8 | 27.0 | 22.8 | 20.615 | 29.641 | 29.778 | 29.678 | ..... | ..... |  |  |
| 27 | 32.6 | 34.2 | 34.2 | 33.9 | 35.2 | 3.2 | 3.2 | 30.015 | 30.026 | 30.015 | 30.039 | ..... | 0.67 | | |
| 28 | 41.8 | 43.8 | 38.0 | 41.0 | 44.0 | 25.0 | 11.0 | 30.075 | 30.075 | 30.075 | 30.089 | | | Lunar Halo. Snow storm. Lowest barometer. | |
| 29 | 37.5 | 32.0 | 31.0 | 31.5 | 37.2 | 4.2 | 4.2 | 29.646 | 29.646 | 29.646 | 29.646 | ..... | ..... |  |  |
| 30 | 31.5 | 38.2 | 33.8 | 35.2 | 39.0 | 26.5 | 12.5 | .886 | .886 | .428 | .885 | ..... | 0.21 | | |
| SUMME. MEANS. | 31.20 | | 33.80 | 37.59 | 39.85 | 24.93 | | | | | 37.62 | | | 1.03 | 1.44 |

ANALYSIS OF METEOROLOGICAL OBSERVATIONS BY T. D. KING FOR THE MONTH OF APRIL, 1874.

Mean temperature of the month, 37.52; mean of the maxima and minima temperatures, 32.39; greatest heat on the 14th, 54.23; greatest cold on the 1st, 0.5 above zero—giving a range of temperature of fifty-four degrees. Greatest range of the thermometer on the 2nd, 35.0; lowest range on the 26th, 3.2.

Mean height of the barometer corrected for temperature 32°, and reduced to sea level (constant applied + 0.100) 29.989; highest reading of barometer on the 13th, 30.456; lowest reading on the 30th, 29.345—giving a range of 1.111 inches.

Rain and snow fall on fourteen days; amount of precipitation when the snow was reduced to its equivalent of water, 2.47 inches. Beckoning 10 inches of snow to be equivalent to 1 inch of rain-water, the depth of the snow fall may be estimated at 1 foot 5 inches.