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TITLE  
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ART. III.—*A case of Cystitis accompanied by Gangrene of the Lower Extremities.* By HENRY MELVILLE, M. D., TORONTO.

THE following report of a remarkable, and I believe unique, case is defective in many particulars, arising from the impossibility of obtaining an accurate medical history of its commencement and progress up to the period at which I first saw the patient; but such as it is I offer it to the profession as a contribution to pathological science, not altogether devoid of interest and importance.

J. G—, aged 38 years, was a native of Yorkshire, England; he emigrated to Canada when he was 8 years of age and had resided in both Provinces since; had been married 7 years and had two children, one of whom survives—a boy exhibiting the scrofulous diathesis strongly marked, which he does not apparently derive from his mother who seems to be a healthy person; he is represented to have been a stout, plethoric and active man, of a sanguine temperament and lively disposition, enjoying uniformly good health, until within the last three years; of good habits, living generously and rarely exceeding either in food or drink. His occupations have been various; for sometime past he was employed as salesman and general porter in an extensive dry goods store in this City.

About three years ago he was engaged one day lifting a stove in company with another man, while in the act of taking it down a flight of steps, his companion who was below the stove, from some cause relaxed his hold, and the whole weight was thus thrown upon him to sustain; in the exertion required to effect this he felt something

snap in the left groin, and subsequently observed a swelling, which occasioned him much pain and discomfort at the time; the inconvenience attending its presence wore off after some months, although the swelling never entirely disappeared. During this period he had frequently suffered from occasional discharges of purulent matter from the urethra, which were generally preceded by an enlargement and followed by a subsidence of the swelling, with a sense of relief of distress. He also experienced occasionally a sense of irritation about the neck of the bladder with difficulty of micturition, but not to such an extent as to occasion any suspicion of stricture of the urethra. During the early part of the past winter he complained frequently of cramps in the lower extremities, affecting principally the muscles of the left leg, and felt frequently very chilly with alternate "flashes of heat." He was also observed to become more irritable in his temper, and was the subject of occasional fits of waywardness and despondency; expressing himself as feeling wearied and less able to endure fatigue or exertion. His bowels were usually constipated and the small size of the fæces were the subject of remark to himself and wife. His appetite was capricious and he became rather more unsteady in his habits, drinking Gin with the assertion that it relieved much of his uneasiness. In the early part of March last his occupation required him to be much on his feet, standing frequently the whole day long. On the evening of the 12th he had indulged somewhat freely in company with some friends, but retired to rest at his usual hour without any additional complaint or suffering. On the morning of the 13th he rose at his usual time and dressed himself, but in stooping to pull on his boot he was seized with violent pain in the left foot, it was so intense as to render him quite faint, he staggered to a seat, and after a time was restored to consciousness by the use of stimulants. On attempting to walk however, supported by attendants, it was discovered that he had lost the use of his left leg, it was also observed that the toes and foot had become colourless, and that the extensor tendons were very rigid. Under the impression that he was suffering from an attack of rheumatism, warm and stimulant applications were applied, with some degree of relief of the pain and restoration of heat of the part. On the 14th a red spot was observed on the dorsum of the foot, the toes "withered away" and the foot and leg became gangrenous. After a few days the right foot also put on a gangrenous appearance—he suffered from occasional paroxysms of pain in both extremities—there was partial retention of urine, but he would occasionally void it in considerable quantities. Such is the history of the case I have been able to trace from the account given by his wife and other attendants; many of the particulars however not having been revealed until after his death.

On Sunday the 4th of April, I saw him for the first time. He was in the semi-erect posture in bed supported by pillows, with the body inclined to the left side, resting principally upon the left hip. His countenance extremely pale and expressive of great anxiety and distress, the latter being further evinced by groaning and sighing.

His face and hands were bathed in a profuse perspiration, he suffered from great restlessness and want of sleep, with much pain in the left thigh and right foot. His pulse was quick, small and thready, his tongue dry and brown, and his general sufferings were aggravated by excessive thirst. The left leg was lying on the outer side bent at the knee, the thigh being also flexed on the body. The toes and foot presented all the characters of dry gangrene, and the gangrenous inflammation extended to the upper third of the leg posteriorly and nearly as high as the head of the tibia anteriorly—there was a faint attempt at the formation of an irregular line of separation; below this line the limb was cold and spongy—the foot and toes being hard and dry. The thigh was very œdematous and there was an inflammatory blush extending above the popliteal space to the lower third of the thigh posteriorly. I thought I could detect a faint pulsation in the upper part of the femoral artery, but from the great œdema, this was difficult to ascertain. The right leg was placed on the inner side, was also œdematous and was in a flexed position. The gangrene of the right foot was confined principally to the under part of the toes, the sole of the foot, internal malleolus and heel, the inflammation extending as high as the middle of the leg. I ordered warm spirit lotion to this foot and a yeast poultice to the left leg. I also advised the free use of wine or porter and nourishing broths. I prescribed a mixture containing the liquor ammoniacæ, acetatis, carbonate of ammonia and camphor mixture; with five grain doses of quinine. The prognosis given to the family at his request was of course of the most unfavorable character. I confess that I was entirely at a loss to account for this extensive destruction of vitality. As on investigation I could discover no adequate exciting cause. Attributing it in the first instance to the effect of cold and exposure, I was assured that he had not been in any way subjected to their influence, as he always wore ample and warm covering to his feet and limbs. I was told that he had not been indulging to any great extent, except on the evening preceding his attack, and that then he had only taken more freely of his customary drink, but not to such an extent as to render him intoxicated. That his food had been of the best description and indeed somewhat choice for a person in his circumstances.

On the following day I expressed a desire to have a second opinion on the case and with the sanction of the family I requested my friend Dr. Hodder to visit the patient with me.

On a careful examination at this consultation, we ascertained that there was really no pulsation in either femoral artery and detected the existence of a tumour in the left iliac region, filling completely the left pelvic fossa and extending as far as the median line and as nearly as high as the umbilicus; we could trace its outline distinctly, it conveyed an indistinct sensation of fluctuation, was apparently moveable, was resilient, dull on percussion, and did not exhibit any indications of pulsation; the surface was uniform and there was no tenderness on compression. Subsequent enquiry elicited the fact that on the morning of his attack he was conscious of "something having

given way" and that then he had first discovered the increased size of the swelling in the groin.

The diagnosis was most obscure. Several of my professional friends visited the case and various opinions were formed as to the nature of this tumour. Its existence at once solved the mystery of the gangrene, and confirmed the prognosis. My own impression was that an aneurism had originally existed, the coats of which had given way and the contents become diffused and coagulated. Another thought it was a sarcomatous growth, the opinion as to its malignant nature being certainly countenanced by the general appearance and complexion of the patient, which would have indicated the cancerous diathesis under other circumstances. A third regarded it as an encysted tumour and a fourth suggested the idea of abscess. Influenced by these varied views of the case and desirous of establishing the diagnosis, in order that if practicable an attempt should be made to restore the circulation, by preventing the pressure occasioned by this tumour, either by its removal or the evacuation of its contents, it was contemplated to puncture with an exploring needle; even at the hazard, had it proved to be an aneurism, of the necessity of ligation of the common iliac or even the aorta, an extreme measure which the desperate condition of the patient might have justified. The rapid sinking of the patient however on the day when it was resolved to make the experiment, prevented the proceeding—a circumstance which subsequent revelation proved to have been very fortunate as regards what might probably have been the issue of it. One circumstance is worthy of remark, that during the period I attended him, there was no clue given to lead to a suspicion of the bladder being implicated, for although he complained occasionally of retention of urine, this was by no means urgent, and he was as frequently relieved by warm diluents, voiding considerable quantities of urine several times; and it was attributed to the constitutional irritation produced by the prominent disease. It is unnecessary to trace the progress of the case to its fatal termination—the symptoms being such as usually attend extensive destruction of the tissues—He died on the 18th of April, fourteen days after I had first seen him and fifty days from the commencement of the attack. The tumour had increased in size extending over to the right side and filling the cavity of the pelvis completely, rising at the same time as high as the umbilicus.\* I could not obtain permission to examine the body while in the house, but the opportunity was afforded of doing so in the vault of the cemetery. The inconvenience of conducting the post mortem under these circumstances prevented as full an examination as could be desired, and we were not permitted to open the head. On making the usual incisions for exposing the contents of the abdomen, the intestines presented a healthy appearance, but were pushed upwards by a tumour filling the entire pelvis and lower part of the abdominal cavity. Its contents were now readily perceived to be fluid, and it was discovered to be an enormously enlarged bladder distended

\* The constant position of the patient on his left side, will account for this mode of extension, as will be evident from the cadaveric disclosures.

with urine. It was firmly attached to the brim of the pelvis by strong adhesions of cellular tissue, binding down the aorta at its bifurcation and the upper portion of the rectum against the projecting lumbar vertebra—both illiacs and the middle sacral arteries were filled with a firm coagulum; in the left, which was traced, this coagulum extended through its divisions and along the femoral. The ureters were much enlarged, being nearly the size of a finger. The bladder was found to contain fully four pints of urine, and was not as fully distended as its capacity would admit of, a circumstance accounted for by the frequent involuntary evacuations which preceded immediate dissolution. The rectum was much diminished in size. The neck of the bladder was buried in a mass of condensed cellular tissue completely infiltrated with lymph, resembling a solid mass of diseased structure. The coats of the bladder were much thickened and soft, the mucous coat being thickened and plicated—the fundus and anterior portion of the body were free and were capable of extension.

These appearances would seem to justify the opinion that the case had been one of chronic cystitis of long standing, commencing most probably at the period of the first injury received three years before; and is an evidence of the fact that inflammation of this viscus may exist in a chronic state and be purely local in its character for a considerable time, slowly producing great changes in its tissues, unrevealed by any very prominent indications of disease. The length to which I have already extended this article, precludes me from adding more than that I have not yet found in the books which I have been able to consult, the record of a similar case, presenting the pathological conditions here detailed. There are many points of practical importance involved in its history, but these I must reserve as the subjects of reflection and future comment.

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ART. IV.—*Cases of Laryngo-Tracheitis*:—1 coming under treatment in the 1st stage, 2 in the second, *Recovery, Remarks*:—  
by JOHN CROXYN, Fort Erie, C. W.

So abundant is the present era of our professional history in the production of real or supposed novelty, and so rich appear to be the results of the labour of its members, in the development of new facts or coining of new theories, that it requires some amount of moral courage to bring before the senior members of the profession merely cases which have neither the charm of novelty nor the attraction of brilliant elucidation to recommend them. I believe it will be conceded however, that it is by no means an unprofitable task to review, from time to time, the facts we have observed and endeavour to derive from them some general rule or law by which to be guided, before the data enabling us to do so, have faded from memory. I am induced therefore to transmit for publication in your valuable Journal, the following cases, if deemed worthy a place therein; not so much to found any rule upon, as to add my mite in corroboration of a particular line of treatment.

Case 1.—Wm. D——, *Æ*, 5.—A strong healthy boy; Augt., 18, 1850, at about 10 o'clock, P. M., was, without any cognizable prodroma

suddenly awakened from sleep, with difficult breathing, cough, &c., I was soon in attendance and found all the symptoms peculiar to true inflammatory croup, in its first stage, present; his features had attained a dark purple colour and the difficulty in respiring appeared so great as every moment to threaten suffocation. He was at once placed in a hot bath, cold being applied upon the head, in a little time his breathing was somewhat relieved, his struggles in the bath, however, rendered it necessary to remove him, before the desired effect was produced by it:—*Rt. V. S. ad ℥v R. Pot. Tart. Antim. gra. iij. Aquæ ℥v iij. Solve. Sum. Cochl. parv: vij. q: semi hora vel pro re nata;* the first dose of the antimony was given in sufficient quantity to produce vomiting, with the view of relieving the stomach of its contents, which I had been told was loaded with a hearty supper; this accomplished, *gra. iv.* of calomel was placed upon the tongue and swallowed and the antimony continued; for two hours the symptoms improved, but at the end of this time, in spite of a constant state of nausea, the breathing was again becoming difficult, the cough producing its peculiar ringing sound, the pulse increased in fulness and hardness and the agitation of the child could scarcely be controlled, I removed ℥v. more of blood from the arm and followed with the administration of the antimony (as above) in frequency sufficient to keep the child under its nauseating influence; I also now commenced giving small doses of calomel and Dover's powder every 4th hour; this treatment was continued until 8 o'clock, A. M., when every unfavourable symptom had disappeared:—*Omit Sol. Antimonii et R. Hyd. Chloridi gr. 1, Pulv. Antimonialis gr. ½, Pulv. Doveri gr. 1, Miscæ Ft. Pulv. quaque 6ta Hora. Sum:—*this prescription was continued for two days, the bowels being kept freely open; all medicines were then omitted, directions were given as to care and regimen, a very rapid return to his wretched health took place.

*Case 2.—C. A.—* Oct., 3, of sanguine temperament and strumous tendency has enjoyed ordinary health until within a week or so, when she was observed to have a slight cold with dry hacking cough, but attracted no special attention:—on the night of the 14th Jany., 1852, her parents were suddenly aroused by her loud ringing cough, the hoarseness of her voice and oppressed breathing; some domestic remedy which produced vomiting, was administered, temporary relief followed and in the morning she was thought as well as before; the ensuing night brought about the same train of symptoms, only greatly aggravated, the domestic means employed were found inefficient, the child was not allowed to go to sleep and with the morning's approach, some amelioration of the symptoms took place. On the evening of the 21st I was sent for, (a distance 10 miles) and the above related to me.

I found the child with features turgid, veins of neck prominent and full, voice hoarse, respiration laboured, inspiration crowing, expiration attended with a clicking sound situated in larynx, very little cough and complains of no pain; skin hot and dry, tongue slightly furred white, bowels open, pulse 120 full and bounding. To have a

hot bath at once, warm hop poultice to neck R. Pot. Tart. Antim. gr. iij Aq.  $\frac{3}{4}$  iij Solv. ft. Sol. Coch. Parv. ij q. Hora Sum. etiam Hyd. Chlorid. gr. i Pot. Nit. gr. iij Pulv. Dov. gr. i. M. P. Pulv. q. 4ta Hora Sum. warm diluents, &c.

Jan'y. 23d — Had no paroxysm last night as on the two previous ones, after each dose of antimony vomiting occurred, much tenacious mucous was coughed up and at one time a large piece of pseudo membrane; very marked relief followed the elimination of this last and the child fell into a quiet sleep for some time; on awakening the cough was found more troublesome and clangous, voice more hoarse, but the breathing remained free, turgidity of features and fulness of vessels of neck less, skin moist, bowels open, pulse 112 and of less volume.—Cont. Med. et App. to neck, &c.

23d — Had several suffocative paroxysms yesterday evening and last night, followed by the expulsion of large casts of false membrane. Is now much better, features have their normal look, respiration quiet, yet the pressure of false membrane below the glottis is obvious, the voice clear, cough harsh but not croupy, skin moist and cool, tongue furred, bowels confined, pulse 108 soft:—Cont. Med. Antim. Sol. q. 2da Hor. Hyd. Chloridi gra. iv mustard applications to sternum and side of neck.

25th.—Improving has coughed up several pieces of false membrane; Pulse 100, good, bowels confined R. Pulv; Purg; omit Hop App; rice water and diluted milk diet, Cont; other medicines.

26th.—Reported as continuing to improve, no hoarseness of voice, cough soft, breathes freely and is playful; Antimony given less frequently since last night. R. Pot; Tart; Antim. gra. iij Acet Scillæ  $\frac{3}{4}$ . Decoct. Polygala Senega v.  $\frac{3}{4}$ ij. ft. Mistura Sum. Coch. Parv; q. 4ta Hora R. Hyd; Chloridi gra. ij. Pulv Ipecac gra.  $\frac{1}{2}$ , Pulv; Dov; gra. ij. M. Ft. Pulv; q. 6ta Hora Sum; if any difficulty of breathing should occur, increase the quantity of the mixture so as to produce vomiting.

28th.—Was more restless last night than for several nights previous, but to day appears better; slight sibilant rale at root of lungs, cough soft and expectoration copious, skin moist and cool, bowels confined, tongue covered with a brown fur, pulse 96, soft and compressible. C. nt; Mist; ut super et Pulv; q. 8va. Hora Pulv; Cathart; Appl; Sinapisms ad theoracem.

30th — Doing very well, sibilant rale gone, tho' a little hoarseness and cough with slight clicking sound in Larynx remain, tongue cleaning, bowels open, passed several worms, Pulse 100 good, Cont; Med.

Feb'y. 1st.—Reported as having had a very bad day yesterday, the antimonial mist; was increased, emesis produced and large casts of pseudo membrane discharged, much is described as being swallowed and passed per anum in conjunction with worms; Cont; Mistura R. Hyd. Chloridi gra. vi. Sodæ Bicarb; gra. xij Pulv; Dov; gra. vi. M. ft. Pulv; divide in chart, vi. una quaque 4ta Hora Sum; upper end of Sternum to be blistered with an ammoniated liniment.

2nd.—Very much improved, still a little clicking sound in Larynx, cough soft, expectoration free, bowels open, tongue clean, pulse 108 soft,—Omit; Antim; et Soda, Cont. Cal. et Pulv. Doveri q. 8va. Hora et R. Potassæ Carbonatis gra. lxxiv Vini Ipecac ʒiv. Decoet; Polygalæ Senegæ ʒviij ft. Mist; Sumat ʒiij q. 4ta Hora. Apply Liniment to side of neck to vesicate.

4th.—Larynx Trachea Bronchia appear free from rale or any other impediment to respiration; Cough very slight and soft, the vesication of neck has produced slight irritative fever for which R. Liqueur Ammon; Acet; Dil; et Nitr; Potassæ q; 4ta Hora Omit; Cal; et Pulv; Dov; Cont; Mist.

6th.—Convalescent blistered surface to be healed slowly, medicines to be omitted, bowels kept freely open, diet light and nutritious but unstimulating.

April.—Since the above this little patient has had Bronchitis from which she recovered slowly, but thoroughly and is now in about her usual health.

Case 3.—The infant son of H. L.—Æt. 6 mos., suffered in January, 1852 from an attack of Bronchitis in connection with dentition from which he soon recovered; has been very healthy until March 10, 1852, when I was requested to visit him in consequence of a croupy cough, suffocative paroxysms and fever which all the domestic remedies that were given failed to remove. I found the child with anxious countenance very restless, frequent hard ringing cough causing him to cry when it occurred, respiration hurried inspiration crowing loud tracheal rale, skin hot and dry, bowels open, tongue clean, pulse 140 wiry. The gum being much swelled over the upper incisors I freely scarified it. R. Pot; Tart; Antim; gra. iij Pot; Nitratris ʒi Liqueur; Ammon; Acet ʒv. Aq. ʒviij. M. ft. Sol. Sumat Cochil: ij parv. 3ta Hora to produce emesis et gutta; xxx q. Hora Sum; etiam Hab; Hyd; Chloridi gra. ij Pulv; Dov; gra. ʒ M. q. 2da Hora; hot salt to neck.

11th.—Is better—Cont; Med; &c.

12th.—Not so well,—Cont; Med; &c.

13th.—Reported as much better and as having thrown up large pieces of stuff answering the description of false membrane and passing still more per anum. R; Acet; Scillæ Vini Ipecac; Au; ʒij Vini Ant; Pot; Tart; ʒj, Decoet; Polygal; Senegæ ʒvii; M. ft. Mist; Sumat Cochil; Partia; q. 3a. Hora; Cont Pulv; q. 8va. Hora; Hot Salt, &c.

14th.—Not so well.—Cont. Mist. R; Hyd. C; creta gra. vi.

Sodæ Bicarb; gra. vi. M. ft. Pulv; et divide in chart; vi. una q. 4ta Hora Sum. foment chest with infusion of hops as hot as it can be borne.

15.—Much better—Cont; Mist, q. 6ta Hora omit Pulv.

18.—Convalescent.

REMARKS.—In Case 1, is exemplified the fact, that recovery in cases of croup happen in proportion to the early adoption of medical measures, therefore if we are called to the case early, our only difficulty

will be in the selection of these measures. Among the endless specifics it would be folly to look and it would be tedious to compare the relative value of the modes of treatment recommended by the best authorities; all admitting, however, the necessity for antiphlogistic treatment and the greater number agreeing upon the utility of blood-letting and tartar emetic, Drs. Cheyne, Stokes, Mr. Porter, &c., it would be but reasonable to expect favourable results from these means, early and energetically employed.

In Case 2, a more intractable stage of the disease presents itself in a very bad subject. Were the active measures of the first case admissible here? To the extent of abstracting blood, I thought not, notwithstanding the state of the circulation: for it struck me, that though the more urgent symptoms might be more readily mitigated by bleeding, the extent of false membrane already formed, the exhaustion consequent upon the tediousness of its elimination, and in the progress of the case, the almost certain occurrence of Bronchitis, contraindicated it in any way. I therefore trusted to the administration of tartar emetic, as strongly urged by Dr. Cheyne in the second stage of croup, to the deobstruent effects of mercury, to the reputed absorbent action of alkalis. Sir B. Brodie (Mr. Hird in *Med. Gaz.* Dec. 4, 1846.) and to expectorants and counterirritation, every care being taken to supply a sufficiency of nourishment, the result has been fortunate though tedious; would it have been the same or would the recovery have been expedited had I had recourse to blood-letting general or local or both? I think the solution of this question of the greatest importance to the country Practitioner, who is invariably only called upon to treat this or any other disease when the domestic pharmacopœia is exhausted, he is consequently more likely to find croup in the second stage than in the first:—of the truth of this only see case 3, which occurs under similar circumstances, but fortunately in a better subject and recovery takes place more rapidly.—In as much as croup is a common and frequently fatal affection in Canada. The individual experience of the Profession upon the most efficient mode of treating it, would, it appears to me, confer a lasting advantage.

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ART. V:—*On the Winter of 1851-2 in Canada, by CAPTAIN J. H. LEFROY R. A., F. R. S.*

THE impression that the past winter was one of a character almost without a precedent, if not in the actual severity of the cold, yet in its long and steady continuance, appears to have been so general throughout Canada and the United States, that it is worth while to examine how far, upon such a subject, fading impressions may be brought into comparison with vivid and recent ones, and whether the winter in question has really surpassed in severity any thing included within the

memory of the present generation. I am not acquainted with sufficient data for extending the inquiry further back than the winter of 1831-2, but for the twenty-one winters embraced between that year and 1851-2, the observations of the Rev. C. Dade, made in or near Toronto, and published in that most valuable work Scobie's Canadian Almanac for 1851, together with those of H. M. Observatory, furnish two series which can be easily connected for the purpose, provided no permanent instrumental or local difference has existed between them. In order to ascertain this point, I have compared the mean values for S. A. M. for each winter in or the during six years in which the observations were contemporaneous.

They were as follows: one summer month is added for comparison.

TABLE I.

YEAR.	JULY.		NOV.		DEC.		JAN.		FEB.		MARCH.		APRIL.	
	Dade	Obs.	Dade	Obs.	Dade	Obs.								
1841.....	67.7	61.3	34.3	34.1	27.8	27.4	23.0	21.3	20.0	18.2	26.8	24.6	39.8	38.3
1842.....	67.0	63.3	31.6	31.4	24.0	23.0	25.0	21.7	25.8	24.3	35.9	33.9	43.0	41.2
1843.....	66.8	62.9	31.5	31.7	30.8	29.5	26.6	26.6	13.5	11.3	20.0	19.1	40.5	39.2
1844.....	68.6	65.2	33.3	32.8	27.5	27.2	19.0	18.0	24.2	24.1	31.4	29.3	47.6	45.6
1845.....	67.2	67.3	35.0	35.1	19.6	19.0	23.8	25.3	21.6	24.0	33.7	34.3	42.7	41.4
1846.....	71.8	69.1	...	...	...	...	24.7	23.9	18.8	16.7	33.2	32.6	43.0	43.4
	63.18	65.35	33.11	33.02	25.91	25.22	23.63	23.38	21.15	19.77	30.17	29.02	42.77	41.52

These observations were made at Mr. Dade's present place of residence, near Oakville, about 18 miles S. W., from the Observatory and I believe somewhat more distant from the shore of Lake Ontario, nevertheless the Observatory mean temperature is lower than that shewn by his register in almost every instance, sometimes as much as 2°. on the average of thirty-five months 0°.8 lower. In the summer the difference is very considerable, if however the large body of open water, having necessarily, a temperature higher than the mean temperature of the air, must mitigate the cold of winter, to some sensible extent, in its immediate neighbourhood; we might expect that during the summer it would temper the heat, and thus in part account for the latter circumstance; that such is the effect of the great Lakes to the North and West of Upper Canada there can be little doubt, or that it influences the whole climate of the region, but as Lake Ontario is immediately supplied from Lake Erie, the summer temperature of which from its position, and its shallowness, must be very high, and

the neighbourhood of Toronto must doubtless be influenced by the prodigious body of water poured out from the mouth of the Niagara River, it may be questionable whether its surface temperature is not higher rather than lower in summer than the mean temperature of its northern shore: and in effect it appears by a monthly observation made for eleven years from the extremity of the Queen's wharf, at the entrance of Toronto bay, and about 500 feet from the shore, that the surface water *alongside the wharf* has a mean temperature of 70°, in July, that of the air being only 66°·3 I am not satisfied however with this evidence; to get the temperature of the water correctly, it should be observed at a greater distance from any radiating surface than circumstances have hitherto permitted; in fact from a boat at some distance from the shore: the point is worth the attention of persons residing near the shore. I am inclined to attribute the difference in summer to the great care with which the thermometer at the observatory is protected from direct and indirect radiation, and placed in an artificial shade more complete than is usually thought requisite, although admitting a free circulation of air from W. N. and E.: in the winter in addition to this cause it may be partly due to extreme temperatures sometimes falling on the Sunday mornings, which have been recorded in the one case not in the other.\* To whatever cause due the *average* difference is not sufficiently large to preclude comparison, and the observations in the earlier years of the series, to which alone I shall have to recur, having been taken at the Upper Canada College in Toronto, would probably differ considerably less than these.

Mr. Dade's observations are given for 8 A. M. only; to reduce them to the true mean of the 24th. We must apply the following corrections derived from ten years observations:—

In January, add 2.02.	In July, subtract 0.14.
February, " 3.08.	August, add 0.18.
March, " 2.09.	September " 0.77.
April, " 1.15.	October, " 1.55.
May, " 0.30.	November, " 1.65.
June, " 0.21.	December, " 1.98.

The exceptional character of the diurnal curve of temperature for the month of February, or more probably that of January, which instead of being colder than February is in Canada slightly warmer, is a peculiarity worth notice, but is established by every year of the series, with one exception. The following are the mean temperatures for each of the winter months, in the whole series.

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\* An instance of the narrow limits within which considerable differences of actual temperature may occur, is given by Mr. Glaisher, who noted at temperature of zero at his own house, at Lewisham, on the 11th Feb., 1845, at 7.25, A. M., that it had been — 1.5, while at the Royal Observatory, Greenwich, two or three miles distant, at the same hour, the temperature was 8 S., and on the Thames — 10.5. Upon this occasion, a thermometer placed on the snow, and freely exposed to the open sky, fell to — 11.2, a temperature which few Canadian readers are prepared to hear of, as occurring in the neighbourhood of London, under any circumstances.

Comparison of mean winter temperatures for twenty-one years at Toronto. Mr. Dade's observations with the foregoing corrections down to 1840, inclusive.

TABLE II.

	Nov.		Dec.		Jan.		Feb.		March.		April.		MEAN OF SIX MONTHS.
	Sa.m	Mn.	Sa.m	Mn.	Sa.m	Mn.	Sa.m	Mn.	Sa.m	Mn.	Sa.m	Mn.	
1830-1.....					17.4	19.4	12.4	15.5	33.2	35.3	41.8	42.5	.....
1831-2.....	33.4	35.0	12.6	14.6	19.0	21.0	16.7	19.8	28.0	30.1	38.0	39.1	26.60
1832-3.....	34.6	35.6	28.7	30.7	25.5	27.5	14.6	17.7	33.9	36.0	43.7	44.8	32.05
1833-4.....	30.9	32.5	28.8	30.8	16.4	18.4	27.3	30.4	30.6	32.7	43.0	44.1	31.48
1834-5.....	33.5	35.1	23.6	25.6	20.5	22.5	14.4	17.5	27.2	29.3	39.0	40.1	28.32
1835-6.....	31.0	35.6	21.4	23.4	22.0	24.0	10.9	14.0	20.2	22.3	37.4	38.3	26.26
1836-7.....	30.7	32.3	23.7	25.7	15.7	17.7	19.5	22.6	22.3	24.4	37.0	38.1	26.80
1837-8.....	35.7	37.3	26.0	28.3	25.4	27.4	12.8	15.9	32.2	34.3	35.0	36.1	29.88
1838-9.....													.....
1839-40.....	33.0	34.6	27.0	29.0	15.0	17.0	26.5	29.6	32.0	34.1	42.3	43.4	31.28
1840-1.....	31.6	35.9	22.3	24.3	21.8	25.1	18.2	22.6	24.6	27.8	38.3	39.2	29.15
1841-2.....	31.1	35.3	27.4	29.7	24.7	27.5	24.3	27.5	33.9	36.2	41.2	43.0	33.20
1842-3.....	31.4	33.1	23.1	25.3	26.6	28.5	11.3	15.0	19.4	21.7	39.2	41.0	27.43
1843-4.....	31.7	33.1	29.5	30.6	18.0	19.9	24.1	27.3	29.3	31.7	45.6	47.6	31.70
1844-5.....	32.8	34.8	27.2	28.8	25.3	26.3	24.0	26.8	34.3	35.9	41.4	42.1	32.45
1845-6.....	35.1	36.7	19.0	21.5	23.9	16.1	16.7	20.8	32.6	33.7	43.4	43.9	28.78
1846-7.....	39.4	40.8	24.5	27.7	21.9	22.9	19.7	22.5	24.6	26.7	39.1	39.8	30.07
1847-8.....	37.4	38.7	28.4	30.6	26.2	27.8	24.0	27.0	26.8	29.1	40.7	41.3	32.42
1848-9.....		34.3		29.6		18.5		20.0		33.9		39.4	29.28
1849-50.....		12.3		26.9	27.2	29.1	23.1	26.4	28.3	29.6	36.9	38.2	32.08
1850-1.....	36.5	38.7	20.6	22.5	22.2	25.6	26.5	28.3	30.4	33.1	40.4	41.5	31.62
1851-2.....	31.0	32.7	20.1	21.6	16.7	18.4	21.1	23.8	25.7	27.8	37.3	38.3	27.10
Mean.....		35.7		26.3		22.8		22.4		30.7		41.0	29.89

It will be seen that the mean for the *six months* compared is actually the lowest since the winter of 1836-7; and although slightly exceeded in severity by that winter and two earlier ones in the series, the difference in its favor is so trifling, both in that case, and as compared with the winter of 1831-2 that it might possibly disappear, if, instead of deducing mean temperatures, from one observation daily, which in individual months leaves a liability to error to the extent of about one degree, we possessed it from observation. This remark does not apply to the winter of 1835-6, which is said, however, to have the most severe in North America since 1779-80, and was decidedly more severe than that of 1851-2.

So far therefore, the winter taken in its popular extent, maintains its character, but this results chiefly from our having excluded October, and included April. October 1851 was unusually warm and genial, having had a mean temperature of  $47^{\circ}.8$  which is  $3^{\circ}.3$  higher than the mean for the same series of years, while April, 1852 has been one of the coldest in it.

It is also remarkable that the lowest mean temperature of the series does not occur in any one month of the past winter, and is only approached by two, November and January: there was no individual month in it nearly so extreme of its kind as December 1831, January 1833, February 1835, and February and March 1843. The first of these is so very remarkable that but for the privilege Mr. Dade has kindly given me of consulting his original journal, I should have suspected an error. It appears that in this year the cold set in on the 28th November, and with such severity that the mean temperature at 8 A.M. for three weeks, from the 30th November to the 18th December inclusive was only  $10^{\circ} 0$ —lower than the mean for the same hour for any one winter month at Montreal.

We may next refer to the meteorological winter, or months of December, January, and February: the mean of which is given in the following table, together with the lowest temperature at 8 A.M. in each season—the lowest at any hour, and the number of observation which indicated at that hour temperatures below zero, and from zero to  $20^{\circ}$  in the three months.

TABLE III.

Winter.	Mean Temp.	Lowest		No. of Ob'ns at 8, A.M.		Winter	Mean Temp.	Lowest		No. of Ob'ns at 8, A.M.	
		at 8 A.M.	at any hour.	B'low Zero.	Zero to 20.			at 8 A.M.	at any hour.	B'low Zero.	Zero to 20.
1830-1		-16.	"	2	38						
1831-2	17.8	-20.	"	6	61	1842-3	22.9	-6.1	-11.0	2	28
1832-3	25.3	-6.	"	2	37	1843-4	25.9	-7.5	-8.5	5	16
1833-4	26.5	-2.	"	1	35	1844-5	27.3	-3.6	-5.5	2	16
1834-5	21.9	-15.	"	6	40	1845-6	19.5	-9.5	-16.2	5	31
1835-6	20.5	-20.	"	10	43	1846-7	24.3	1.1	-2.2	0	33
1836-7	22.0	-7.	"	5	39	1847-8	28.5	-11.8	-12.0	1	19
							(m)				
1837-8	23.5	-2.	"	1	"	1848-9	22.7	-15.2	-15.2	6	27
1838-9	"	"	"	"	"	1849-50	27.5	2.7	-5.4	0	18
1839-40	25.2	-8.0	-19.2	7	"	1850-1	25.5	-12.8	-12.8	2	25
1840-1	24.0	-2.0	-8.3	1	34	1851-2	21.3	-10.6	-14.8	3	31
1841-2	28.2	2.3	-0.2	0	11						
at 7, a m.							24.15				

We see that taken in its meteorological sense the past winter was less severe than those of 1831-2, 1835-6, and 1845-6, but ranks decidedly among the coldest of the series. In respect to the lowest temperature recorded it has been often exceeded. The winter of 1831-2 appears to have been the most exceptional of the whole, and it may be mentioned in this connection, on authority of Mr. Paine's observations at Boston, that the winter of 1827-8 was the mildest of the last 27, it is stated that the Hudson River did not close at all in that winter.

Toronto Bay was frozen over on the 13th December, 1851, and within a day or two of that early date was crossed in sleighs from the neighbourhood of the Queen's Wharf; as to the date, it has been frequently frozen as early, in 1835 it was frozen on Dec. 1, in 1845 on the 3rd, and in 1840 on the 6th December, but in most, if not at all of these cases broke up again; this was not the case in 1851, when it was so solid that as early as December, 18, the steamboats found it necessary to land their passengers at the edge of it, half a-mile or more beyond that point, and at one time were reduced to landing them with great difficulty and some danger, upon the south side of the Peninsula, by boats, indeed the ice extended in a solid state considerably beyond the new Garrison, and with a broken margin nearly to the east point of the Humber bay, thus presenting a solid surface almost as far as could be seen from the city; all which are circumstances of very rare occurrence. Although the closing and opening of the bay are affected by accidental circumstances and an uncertain criterion of the character of the winter, the following memoranda on the subject may be interesting, the dates previous to 1840 are extracted from Mr. Dade's valuable notes, and for the subsequent years derived chiefly from memoranda kept for his own information by Serjeant J. Walker, Royal Artillery.

## BAY FIRST FROZEN.

1832,	
1833,	
1834,	
1835,	December 1,
1836,	"
1837,	December 14,
1838,	"
1839,	"
1840,	December 6,
1841,	December 18,
1842,	"
1843,	December 13,
1844,	December 18,
1845,	December 3,
1846,	December 15,
1847,	December 26,
1848,	December 25,
1849,	December 26,
1850,	December 13,
1851,	December 13,

## BAY OPENED.

1833,	April 4,
1834,	March 14,
1835,	March 30,
1836,	April 25,
1837,	April 16,
1838,	April 2,
1839,	"
1840,	March 28,
1841,	April 12,
1842,	March 17,
1843,	April 23,
1844,	"
1845,	"
1846,	April 8,
1847,	April 19,
1848,	March 31,
1849,	March 29,
1850,	April 3,
1851,	March 24,
1852,	April 17,

There is one circumstance, in addition to the state of the thermometer, which very much affects the impressions derived from the senses as to the severity of a winter, namely the occurrence of high wind with a low temperature; such was the case on many of the coldest days of the past season, particularly in December and January when a long continuance of searching westerly gales enhanced the sufferings of those badly provided with fuel, food or clothing to a distressing extent. The following are a few examples:—

TABLE IV.

1851-2.	TEMPERATURE.			VELOCITY OF WIND. IN MILES		
	Mean	Below the average.	Lowest.	Mean per hour.	Above the average.	Highest hour.
December 25 .....	10.00	15.2	-14.8	8.94	2.74	12.8
“ 16 .....	4.78	21.4	-3.2	10.53	4.38	16.1
“ 17 .....	4.93	21.2	1.8	12.27	6.07	17.0
January 20 .....	0.85	21.8	-3.8	13.47	6.73	17.8
“ 19 .....	1.37	21.2	-10.6	10.17	3.44	18.3
“ 15 .....	3.75	8.9	-6.2	7.42	0.68	18.0
“ 17 .....	6.77	15.8	2.0	7.59	0.85	14.2
“ 22 .....	8.08	14.5	-0.6	10.26	4.52	14.1
“ 13 .....	10.75	11.9	7.0	9.08	2.34	11.2

On every one of these very cold days we have a high wind. With regard to direction, the mean direction, and mean velocity for each of the above months, from five years registration by Robinson's anemometer, and the mean of the same months in the past winter, are given below:—

	MEAN OF 5 YEARS.		1851-2.	
	Direction.	Velocity.	Direction.	Velocity.
November	W. 31 N.	4.87,	W. 37 N.	4.70,
December	W. 33 N.	6.20,	W. 8 N.	7.37,
January	W. 31 N.	6.74,	W. 30 N.	7.67,
February	W. 39 N.	6.65,	W. 16 N.	6.42,
March	W. 53 N.	6.45,	W. 83 N.	5.81,
April	W. 71 N.	6.96,	N. 23 E.	6.68,

There was an unusual prevalence of westerly wind to December and February, of northerly in March, and of easterly in April, the other months offer nothing unusual, nor is the quantity of wind excessive in any other month than December and January.

It does not appear from Table III. that any very distinct alternation of mild and severe winters is to be recognized in the period covered by the comparison; on the whole, however, we find that of the last nine winters, six were warmer than the average, and, of the previous nine, six were colder than the average;—this latter period again, as there is reason to think, was preceded by a series of mild seasons, so that there are some grounds for supposing that we may now expect a succession of the opposite character; but, it is evident, that a very cold winter frequently occurs in a warm series, and a mild one in a cold series. Of the former character may have been that of

1809-10, which by this rule should fall in a warm group, although it will long be remembered by the old inhabitants of Canada, for the memorable *black night*, the 18th January, 1810, in which the temperature changed in a few hours from a high thermometer, with rapid thaw, warm and genial sunshine, to the most intense frost, producing distress and devastation unparalleled in their recollection. There are probably in existence some precise notes taken on this remarkable occasion, but I have not been able to hear of them.

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ART. VI:—*On the White Globules of the Blood in Disease.* By JAMES BOVELL, M. D., Toronto.

IN the twenty-third and twenty-fourth numbers of *Brathwaite's Retrospect*, Prof. Bennett has called attention to the increased presence of the white globules of the blood, as indicative of a diseased condition, and he proposes to apply the term *Leucocythemia* to this morbid state, merely, however, "as expressing the simple fact, or a pathological state, and involving no theory." He has also ascertained that "the blood may be loaded with a multitude of cells *exactly resembling those of pus*; that such blood may circulate in the human subject for months or even years, without destruction to life, and that this condition is always associated with disease in those organs, the functions of which have hitherto been involved in the greatest obscurity, constituting facts which seem calculated to exercise an important influence on many views that have been long agitated in science." The condition of the blood, as observed by Dr. Bennett, is as follows:—

"On examining the blood of living persons (by pricking the finger with a needle, and examining the drop between glasses in the usual way under the microscope), the yellow and colourless corpuscles are first seen rolling confusedly together, and the excess in number of the latter over the former is at once perceived. This, however, becomes more evident after a short time, when the coloured bodies are aggregated together in rolls, and leave clear spaces between them, which are more or less crowded with the colourless ones." Instances of *Leucocythemia* have been noticed by previous observers, and it may be useful to refer to them, with a view of shewing both the importance of the subject, and the extent of our obligations to Prof. Bennett, for his truly valuable papers.

"That the colourless corpuscles are really present in increased numbers in the blood in disease, says Mr. Hassall, is attested by the evidence of numerous observers: thus, Gulliver, Davy, and Ancell have observed them in unusual quantities in inflammatory affections, and especially in such as are attended with suppuration. Donne has recognized them in increased quantities in disease, and Mr. Addison in the base of boils and pimples, and in the skin in scarlatina, and in most cutaneous affections. In inflammatory diseases, observes Mr. Gulliver, especially when attended by suppuration, whitish globules, which I have elsewhere described, as those of pus, may be found in

unusual numbers in the blood: and Mr. Ancell in his valuable lectures has mentioned several interesting observations in illustration of the fact; thus, as he remarks 'in one of the early numbers of the *Philosophical Transactions*, a case of this kind is recorded' as milk coming from the veins; and Hewson describes this diseased serum as sometimes having the appearance of whey, with white streaks swimming on its surface like cream, and now and then being white like milk, whilst the coagulum is as red as usual, and that when examined under the microscope, it is found to contain a number of globules which are never seen when it retains its transparency: they are smaller than the particles of the blood, and spherical in shape, agreeing more nearly with the globules of milk than with the blood corpuscles. A well marked case occurred in the wards of St. Georges's Hospital, under Dr. Wilson, in a female with general anasarca; the serum resembled milk, and had a low specific gravity. Mr. Lane examined it microscopically, and found that it contained a great quantity of globules, as described by Hewson, but resembling *chyle granules* very closely, and *not the milk globule*. In the *Lancet* for October, 1839, Mr. Lane has published some very curious observations on the '*Pus Globules*,' as seen in the blood, wherein he says, 'in the first place, to add my testimony to the truth of the most prominent facts brought forward by Mr. Gulliver, but principally with a view to facilitate similar inquiries, by explaining a very simple method of not only detecting (by aid of the microscope) the presence of the pus globule in the smallest drop of blood taken during life, but also of preserving the specimen for future reference. In this way a series of observations may be made with facility on the appearance of the blood corpuscles in various diseases, and of any addition to them of pus, or other visible material, whether the product of disease or of healthy function, as of the admixture of the chyle granule with the blood. The method which I have adopted consists simply in procuring a drop of blood by puncture with a needle in the extremity of the finger, or by using a lancet in some less sensitive part. The drop of blood is to be received upon a piece of glass, which should be immediately placed upon its edge, so that the blood in gravitating may leave a single layer of the corpuscles at the upper part. Any superimposed layer will tend greatly to obscure the blood corpuscles themselves and will entirely conceal the less frequently occurring particles.—The glasses thus prepared will enable the observer at once to detect *the pus globule* (white globule?) which will generally be found interspersed amongst the blood corpuscles especially near the margin of the specimen. For the purpose of illustration I will select two out of many specimens of blood thus prepared for microscopical observations. The first marked No. 7 was taken from a patient labouring under Phthisis with purulent expectoration. With the  $\frac{1}{2}$  inch object glass which takes in a field of the 1 16th of an inch in diameter as many as one hundred of the so-called pus globules, may be enumerated, and with the  $\frac{1}{8}$  of an inch object glass, sixteen pus globules may be distinctly seen. In the 2nd specimen marked No. 10, the blood was taken from a man suffering from suppuration in

the fore arm, after diffuse cellular inflammation; and as if to confirm the fact that these bodies seen by Mr. Lane were really the white globules of the blood and not Pus he adds that "It is necessary to state that in the blood taken from the human subject and from animals apparent'y in health the pus globules though few in number, may be detected in almost every instance." Mr. Paget in his lectures on inflammation has also stated the general circumstances under which we may expect to find an increase of the white globules, and observes:—"I therefore cannot but accord with the opinion often expressed by Mr. Wharton Jones and Dr. Hughes Bennett, that especial abundance of white corpuscles i. e. *rudimental blood-cells*, in the vessels of an inflamed part, is neither a constant nor even a frequent occurrence; and I believe that when such corpuscles are numerous in an inflamed part, it is only when they are abundant in the whole mass of the blood. Now as already stated they are thus abundant in some cases of inflammation, especially, I think, in those *occurring in people that are in weak health*, and in the tuberculous. We thus perceive from the testimony of several observers that under circumstances as narrated by Prof; Bennett, we may expect to discover Leucocythemia

Having lately had the opportunity of making a few observations on this most interesting diseased state of the blood confirmatory of Dr. Bennett's views they are with much diffidence submitted in proof of his position. In the month of April 1851 the General Lying-in Hospital Toronto was for the first time visited by infectious disease. The first case admitted was that of a large masculine woman who came in late one evening from the village of Markham and under the plea of fatigue and destitution, prevailed on the excellent matron to allow her to remain until the next day, when as she was near her confinement she hoped to be confirmed in her admission by the visiting physician. On the following morning however she was found too ill to rise, complaining of general malaise, shivering and acute pain in the right ankle joint.

(To be continued.)

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ART. VII:—*Remarks on the Meteorological Register, by* CAPTAIN F. H. LEFROY, R. A., F. R. S.

THE form in which the observations of the Barometric pressure and the temperature of the air, are given this month (April 1852) is one which requires explanation, and being impressed with a conviction that it offers several advantages over the ordinary practice of printing the actual observations of the Barometer and Thermometer. I am desirous of making it as intelligible as possible to all who may consult the register.

The object of printing meteorological observations is two-fold,—first to determine certain physical constants and supply the necessary data for comparing different regions in respect to climate, and to all those atmospheric influences by which animal and vegetable life are

so materially affected,—secondly, to supply materials for tracing out the laws of storms, the progress of the seasons, their greater fluctuations and various other interesting enquiries. It might perhaps be added to these reasons, that they are published to satisfy a rational curiosity which seems inherent in the natives of all climates subject to much variation, and is justified by the daily increasing importance of the subject. Such then being the rationale of a practice which is sometimes rather irreverently regarded, it is evident that the first class of enquiries involves almost exclusively *mean values*, and scarcely requires, except for authentication, the publication of details; the second class on the contrary depends principally on details, and only involves mean values as fixing or defining the fluctuations of the individual observations. At the same time it is desirable that the means, when referred to for this purpose, should be as accurately determined as for the other, otherwise all conclusions will be affected by a constant error.

The present register is an attempt to satisfy one enquiry, while promoting the other. All the mean results are given as heretofore, but instead of giving the individual observations in the case of the two elements in question, the value given is *the difference of the atmospheric pressure and temperature at the time of observation from its normal value*, for the same hour in the case of the Barometer; for the same day and hour in the case of the Thermometer. The mean Barometric pressure has been derived from seven years' hourly observations, giving for the hours of 6, A. M., 2, P. M. and 10, P. M. respectively, in the month of April, at a point about 108 feet above the level of Lake Ontario, the values which are entered under the denomination "Normal Mean" at the foot of the table. The actual observation at any particular hour is in this case recovered by simply applying the quantity entered for that hour, to this quantity, with its proper sign. Thus having for 6, A.M. on the 1st April — 0.270 inch of pressure, and the normal mean 29.659 inches, we see in a moment that the actual observation at that hour was 29.389.

In the case of the thermometer, the matter is a little, and but a little less simple. We cannot here take temperatures observed at any period of the month as comparable with the mean temperature for the month at the same hour, as the latter in strictness is true only for the middle of it.

The mean temperature appropriate to the beginning and end of the month will be obviously different. The following is the method, which has been here adopted. The mean temperature for each day of the month was first assigned from all the observations on that day in nine, ten or eleven years, as the case may be, the omission of Sunday causing a difference: the whole were previously reduced, if necessary, to standard. From the mean of these we have a true mean for the month, which in the case of April was  $41^{\circ} 2$ , similarly it was found to be  $30^{\circ} 5$  for March, and approximately  $52^{\circ} 2$  for May. These values show that from the 15th March to the 15th April the mean temperature increases at the rate of  $0^{\circ} 35$ . per day, and at the rate of

$0^{\circ} 36$ . from 15th April to 15th of May, consequently if  $n$  represent the interval between any given day in April and the 15th of the month, the true mean temperature for that day, if in the earlier half will be

$$t=41^{\circ} 25-0^{\circ} 35. n.$$

if in the latter half, will be

$$t=41^{\circ} 25+0^{\circ} 36. n.$$

In this way a normal mean temperature was determined for each day, and the difference between these values and the observed mean temperature of the day, is the quantity entered in the column of mean. With respect to the individual readings of each day, they were also first referred to the normal mean for the day, and the differences then corrected for the horary fluctuation, or difference between an observation at that hour and the mean of the twenty-four hours, determined by seven years of hourly observations, all which may be done in less time than it takes to describe the process.

To recover an actual observation apply the mean horary fluctuation for the hour of observation, to the quantity

$$t=41^{\circ} 25-0^{\circ} 35. n \text{ or } t=41^{\circ} 25.+0^{\circ} 36. n$$

as the case may be, the sum is the appropriate mean for the date and hour in question, and this value added to the value in the table (paying regard to sign) will be the value observed. Thus, we have at 6 A.M. on the 1st April  $+2^{\circ} 1$ . The true mean for that date is  $41^{\circ} 25.-0^{\circ} 35 \times 15=36^{\circ} 4$ , and the mean for 6 A.M. in April is  $5^{\circ} 5$ . lower than the true mean for 24 hours. The normal mean for the observation was therefore  $36^{\circ} 4-5^{\circ} 5=30^{\circ} 9$ . and the quantity entered being  $+2^{\circ} 1$ , the observation was  $33^{\circ} 0$ . As it rarely happens that actual observations are referred to, with purposes which require the absolute scale value, little inconvenience can result from the apparent length of this process. The extremes of the month are given as heretofore.

April 1852 was remarkable for the steady prevalence of low Barometric pressure, giving the lowest mean value for the month which has ever been observed at Toronto, it will be seen that the Barometer rose above its mean value on four days only, in the whole month. The temperature of the air was also generally below the mean, especially during the day time; a circumstance attributable to the unusual prevalence of cloudy weather—and did not attain by  $14^{\circ}$  the average maximum temperature. It will be noticed also that so large a quantity of snow has not fallen in the same month in 13 years, all of which circumstances point it out as a remarkably dull and backward spring month.

[*Note by Ed.*—Without attempting to establish a connection between the remarkable meteorological conditions here given by Captain Lefroy and the sanitary state of this City during the same month, it is nevertheless worthy of observation that the type of all prevailing diseases was peculiarly asthenic and congestive. In many instances where accurate examinations were made of the characters of special cases of disease, as exhibited by the blood, a clear indication of

deficient vital power was manifest, in the general faulty quantity and ill condition of the blood corpuscle and the general anæmic state of the viscera and tissues; the rapid prostration occasioned by even the most ordinary attacks of disease was a circumstance noticed by every one. This may be considered a mere coincidence; but it is by a multiplication of coincidences that general laws may be established:—here then we have a satisfactory proof of the value of contrasting observations of this nature with those of meteorological phenomena.]

ACKNOWLEDGMENTS.

Dr. Richardson, Toronto; Dr. Chewett, Toronto; Dr. Rolph, Toronto; Dr. Stratford, Toronto; Dr. Duncomb, Richmond Hill; Dr. Courtland, Bytown; Professor Hind, Toronto; Dr. Herrick, Toronto; Dr. Langstaff, Richmond Hill, 2 years; Dr. Dickson, Kingston; Jos. Morrison, Esq., M. D., Quebec; Dr. Jones, Lloydtown; Dr. Widmer, Toronto; Dr. Clarke, Belleville; Mr. Jarron, Dunville; Dr. McKelcan, Hamilton.

ERRATA.

In MR. JARRON'S paper on ENDEMIC FEVER, published in the last number of this Journal.  
 page 3 line 23 for "serious and complicated typhus" read "types."  
 page 3 line 38 for "spending an hour" read "a few hours."

PUBLICATIONS RECEIVED.

Dublin Medical Press. 4 Nos.  
 Nelson's Northern Lancet. April and May.  
 Canada Medical Journal. May.  
 Second Report on Observations of the Aurora Borealis for 1850-51. by J. H. Lefroy, Captain R.A.F.R.S.  
 Dr. Gregory's Letter on Animal Magnetism. American reprint. T. McLearn, Toronto.  
 The "International Journal."

With a view to supplying in the registers of this year, not only an epitome of the principal meteorological characters of each of the past twelve years, but also information calculated to facilitate meteorological observations and in some cases supersede the necessity of reference to the volumes in which those at H M Magnetic Observatory are or will be published at large; the following table of thermometric reductions is given. It contains the quantities by which the mean temperature at the hours named, differs in excess or defect from the true mean, and which are therefore to be subtracted in the one case, and added in the other, to reduce means derived from observations at any one or more of those hours, to true means. They are derived from hourly series for seven years, and are probably sensibly correct for the whole of Canada and the Northern States.

Month.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	Noon.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	8 p.m.	9 p.m.	10 p.m.
March -	4.75	3.93	1.89	0.25	4.15	5.15	4.67	3.92	2.35	0.03	1.00	1.63
April -	5.43	3.22	1.09	1.01	4.66	6.16	5.91	5.12	3.42	0.66	1.73	2.59
May -	5.40	2.43	0.06	2.11	5.87	7.21	7.17	6.80	5.05	0.12	2.31	3.29

## MONTHLY METEOROLOGICAL REGISTER, at

Latitude: 43 d. 39.4 m. N. Longitude: 79 d 21 m. W.

Mgt.	Day.	Barom. at tem. of 32 deg. abv. or blw. the mean.				Temperature of the air. abv. or blw. the mean.				Tension of Vapour.			
		6 A.M.	2 P.M.	10 P.M.	mean.	6 A.M.	2 P.M.	10 P.M.	mean.	6 A.M.	2 P.M.	10 P.M.	mean.
c	1	0.279	0.230	0.063	0.179	2.1	9.7	6.0	4.5	0.159	0.172	0.117	0.112
c	2	0.100	0.031	0.012	0.033	3.9	11.6	6.1	8.2	133	140	139	133
c	3	0.129	0.157	0.163	0.166	6.1	11.0	7.8	9.6	111	111	094	110
d	4	0.152	0.097	—	—	11.1	9.8	—	—	105	148	—	—
d	5	0.179	0.311	0.163	0.318	0.6	14.4	3.2	6.2	117	153	189	163
b	6	0.469	0.215	0.069	0.213	2.8	9.9	3.4	5.9	162	160	181	169
a-c	7	0.027	0.000	0.019	0.015	13.1	4.8	2.3	6.4	099	208	137	151
c	8	0.067	0.117	0.108	0.098	6.3	5.4	1.0	4.4	124	160	135	139
c	9	0.137	0.083	0.005	0.068	3.1	3.1	3.0	3.6	118	103	139	131
c	10	0.023	0.003	0.020	0.005	3.9	1.6	3.5	2.5	137	163	131	142
c	11	0.073	0.115	—	—	8.3	6.2	—	—	122	141	—	—
c	12	0.236	0.207	0.215	0.217	1.6	0.1	2.6	0.4	117	195	153	177
c	13	0.152	0.096	0.116	0.110	0.9	6.0	0.9	2.9	192	221	212	202
b	14	0.323	0.376	0.401	0.373	0.7	1.8	4.1	0.2	203	270	156	213
c	15	0.150	0.451	0.333	0.112	1.3	4.8	2.3	2.3	140	202	235	199
b	16	0.217	0.203	0.209	0.219	3.0	1.2	5.6	1.8	170	211	217	216
b	17	0.292	0.231	0.218	0.255	5.9	2.0	5.6	2.5	181	218	274	221
c	18	0.352	0.333	—	—	4.5	2.4	—	—	229	279	—	—
a-d	19	0.317	0.331	0.367	0.345	6.9	1.1	6.1	4.3	252	239	241	241
f	20	0.416	0.416	0.604	0.170	6.7	3.2	3.2	1.1	258	219	271	229
f	21	0.611	0.761	0.560	0.757	4.3	2.9	6.1	4.2	209	252	306	257
f	22	0.719	0.655	0.357	0.554	2.7	6.9	1.2	3.1	207	160	189	185
e	23	0.361	0.267	0.171	0.253	7.7	12.9	7.5	10.4	137	171	166	158
d	24	0.082	0.078	0.079	0.080	6.7	6.4	5.2	5.9	129	186	161	163
c	25	0.112	0.141	—	—	6.3	11.0	—	—	139	121	—	—
c-b	26	0.309	0.377	0.232	0.323	1.9	9.9	5.2	6.1	196	239	171	202
c	27	0.231	0.231	0.209	0.239	6.3	8.5	6.6	6.9	156	140	163	155
b	28	0.150	0.167	0.135	0.157	7.7	5.1	9.2	6.8	141	137	169	145
c	29	0.147	0.128	0.110	0.120	5.3	1.0	2.7	2.8	136	193	161	155
c	30	0.105	0.126	0.279	0.176	0.1	6.0	1.6	2.1	136	152	222	152
	31												
Nrml.	Mean.	29.659	29.639	29.610	29.611					0.162	0.186	0.123	0.177
Obsv.	Mean.	29.112	29.409	29.430	29.116	31.29	12.53	37.10	33.29				

Highest Barometer - 29.822, at 12 p.m. (midnt.) on 3rd. } Monthly range :  
 Lowest Barometer - 28.773, at 12 p.m. (midnt.) on 21st. } 1.044 inch

Highest observed temperature 53.8, at 4 p.m. on 29th. } Monthly range :  
 Lowest registered temperature 19.8, at 6 a.m. on 7th. } 34.0.

Mean of highest observed temperature - 42.82, }  
 Mean registered Minimum temperature - 32.66. } 10.76.

Greatest daily range, 13.5, from 2 p.m. on 15th to 6 a.m. on 16th.

Warmest day, 21st. Mean temperature, 47.53 } Difference : 20.10.  
 Coldest day, 3rd. Mean temperature, 27.45 }

The present "Means" are derived from six observations daily, viz:—at 6 a.m.; 2, 4, 10, 12, p.m.  
 Ica totally out of Toronto Bay on 17th April.

(a) A marked absence of magnetical disturbance.

(b) Unimportant movements,—not to be called disturbance.

(c) Marked disturbance,—whether shown by frequency or amount of deviation from the normal curve,—Lat of no great importance.

(d) A greater degree of disturbance,—but not of long continuance.

(e) Considerable disturbance,—lasting more or less the whole day.

(f) A magnetical disturbance of the first class.

H. N. Magnetical Observatory, Toronto, C. W.—March, 1850.

Elevation above Lake Ontario, 108 feet.

Humidity of Air.				Wind.			Rain in inches.	Sn. in inch.	WEATHER.
6	2	10	M	6 a.m.	2 p.m.	10 p.m.			
85.93	77.79	s b w	s b e	w b n	-	-	0.7	Clouded; snow slty. 2 p.m.; halo round moon at 10 p.m.	
92.50	89.41	Calm.	w e w	w b s	-	-	0.2	Overcast; snowing slightly from 8 a.m. to 2 p.m.	
80.75	61.72	w s w	w	Calm.	-	-	-	Clouded a.m.; aurora lt. at 10 p.m.; halo rd. m. at midn.	
91.70	-	Calm.	e b n	e n e	-	-	-	A.m. clear and fine; p.m. overcast.	
78.97	100.92	e n e	e b n	n e b e	-	-	8.0	Densely clouded; very heavy snow storm from 1 p.m.	
97.50	100.93	n e b e	n n e	n w b w	-	-	0.5	Snowing and drifting most of the day.	
89.86	71.51	Calm.	s w	w s w	-	-	-	Generally clear; fine, a few light clouds dispersed.	
84.67	69.70	Calm.	s w b s	n w b n	-	-	-	lt. clds. dsprsd. generally clear, fine; faint aurora midn.	
83.37	72.65	n n w	n w b n	n w b n	-	-	-	Unclouded; very fine day. aurora from 8 p.m.	
82.53	69.63	n w b n	w b s	n	-	-	-	Unclouded; do. aurora from 9 continuing most of ngt.	
86.50	-	Calm.	e b s	e n e	-	-	inapp.	A.m. clear and fine. p.m. light clouds dispersed.	
69.62	90.71	Calm.	s	e b n	-	-	-	Mostly clear, fine; faint aurora from 8.30 p.m.	
91.89	97.92	e n e	s	Calm.	0.110	-	-	Overcast all day, foggy, slight rain from 2 to 11 p.m.	
55.90	6.53	Calm.	s w	n e l n	-	-	-	Slt. ra. at 6 a.m.; dense fog p.m.; aurora lt. 10.50 p.m.	
61.53	97.71	n	n n w	n w b n	-	-	-	Light clouds dispersed, fine, aurora from 7.42 p.m.	
90.62	79.77	n w	s w	Calm.	-	-	-	A.m. clear and fine, overcast. lt. clouds and haze 6 p.m.	
69.71	91.76	e b n	e n e	e	0.430	-	-	Densely overcast, constant rain from 5 p.m. to 11 p.m.	
93.90	-	e	e	e b n	inapp.	-	-	Slight rain 6.15 a.m., afternoon dull and gloomy.	
82.67	79.76	e b n	e n e	n e b e	0.100	-	-	Overcast, dgll; slight rain from 2 p.m.	
90.71	82.90	e n e	e b s	n e b e	inapp.	-	-	Slt. spiting r. at 6 a.m.; d. daisy overcast. ft. au. st. 19 a.m.	
79.63	96.79	n n e	n n e	n w b n	0.225	-	-	Densely overcast, slight but constant rain from 1 p.m.	
82.66	78.71	n w b n	n b e	n w b n	-	-	-	Overcast. lt. clouds and liz., aurora fm. 8 p.m. to 1.15 a.m.	
79.78	82.82	n w b n	n w b n	Calm.	-	-	inapp.	Particles of snow 6 to 6 a.m.; day densely clouded.	
71.65	76.70	n w	n w	n e	-	-	-	Clear save a few lt. clds. dsprsd. at 2 p.m. very fine d. & n.	
71.65	-	n e b n	e b s	n b e	0.100	-	-	Light clouds a.m.; rain 3.50 p.m. to 5.50. slt. & h. 6.30.	
87.93	78.56	e n e	n e	n w b n	inapp.	-	-	Slt. r. till 8 a.m.; foggy dull gloomy d., drizz. r. ocly.	
80.51	73.69	w b n	w n w	n w	-	-	inapp.	Dense masses dthcd. clouds passing, slt. sn. 1 & 2 p.m.	
78.41	80.62	w n w	n w b n	s w b s	-	-	-	Mostly clear; a few clouds dispersed, fine day.	
67.52	63.69	n w	s	Calm.	-	-	-	Unclouded; very fine day.	
63.48	95.61	n n e	e s e	e b s	1.025	-	-	Cds. a.m., c. from 4 p.m., r. from 9.10 p.m., l. & t. 10 to 1.	
81.69	81.76	Miles.	Miles.	Miles.	1.990	9.4			

Sum of the Atmospheric Current, in miles, resolved into the four Cardinal directions.

North.	West.	South.	East.
2063.61	1435.83	416.71	2124.45
Mean velocity of the wind—6.63 miles per hour.			
Maximum velocity — 21.7 miles per hour, from 5 to 6 p.m. on the 5th.			
Most windy day—5th: mean velocity—18.42 miles per hour.*			
Least windy day—13th: do. do.			
Most windy hour—1 p.m.: do. 9.37 do.			
Least windy hour—9 p.m.: do. 4.96 do.			
Mean diurnal variation—4.41 miles.			

\* This is the highest average for one day at Toronto since 1817.

COMPARATIVE STATEMENT.

Year.	TEMPERATURE.				Rain.		Snow.		Wind.		
	Mean.	High.	Low.	Range.	Days.	Inches.	Days.	Inches.			
1810	42.33	65.9	25.3	40.6	14	3.420	2	} No record	Miles.		
1811	39.25	62.0	22.1	40.8	3	1.370	3				
1812	43.02	89.5*	21.6	67.9	8	3.740	2				
1813	41.01	70.0	25.1	54.9	7	3.185	3				
1814	47.63	74.5	17.2	57.3	10	1.615	1			inapp.	
1815	42.10	66.0	14.8	51.2	11	3.290	4			1.6	
1816	43.93	79.4	21.4	58.0	10	1.302	2			1.3	
1817	39.81	65.6	8.4	57.2	8	2.870	2			4.0	
1818	41.26	63.4	26.5	38.9	5	1.455	1			0.6	4.89
1819	39.39	70.9	23.2	47.7	10	2.655	2			1.7	7.50
1820	38.17	63.2	18.3	44.9	7	4.720	2	1.1	7.64		
1831	41.49	59.2	25.8	33.4	11	2.295	3	1.2	8.07		
1852	38.23	53.8	19.8	34.0	6	1.990	4	9.4	6.68		
Mn.	41.36	68.13	20.19	47.95	8.5	2.600	2.4	2.1	6.96		

\* A very remarkable rise of the thermometer took place between 1 and 2 p.m. on the 23rd April, 1812, and lasted several hours.

## Review.

### *The Progress of Comparative Anatomy.*

Many of our professional brethren may not have ready access to the London periodical press, and therefore we make no apology for drawing largely, for their benefit from the last Quarterly Review, for an able exposition of this subject constructed upon the works of OWEN. Nor is it uninteresting to mark the manner in which the labours of that philosopher are prominently brought before the lay portion of the public, by a publication not usually supposed to be partial to, or very familiar with Medical Science either directly or in its collateral departments. This review is the more acceptable from the admirable manner in which it opens up the whole question of this valuable portion of scientific investigation, the relation of which to every department of human knowledge is so intimate. Opening with a just and well merited tribute to the memory of JOHN HUNTER, the reviewer introduces Mr. Owen to the attention of his readers by stating that the impression likely to be produced on perusing the catalogue of his works, fifteen of which are enumerated, these being only the larger books, would be that of a man of age, whereas Mr. Owen is comparatively a young man. Having been at an early period of life in the Navy, he at the close of the last American war, commenced the study of medicine with the hope of being shortly again employed in the same branch of service. It was under the eminent Dr. Barclay of Edinburgh that his love for comparative anatomy was confirmed. From Edinburgh he went to Bartholomew's, and there attracted the attention of ABERNETHY who encouraged him to look for a permanent position in that school. Being frustrated in this design and expectation by the nature of the regulations, which gave strict precedence to the hospital apprentices, he availed himself of the interest which he still possessed, and having obtained the promise of an assistant surgeons'hip he called on his excellent but eccentric friend to bid him farewell.

“ ‘What is all this?’ said Abernethy—‘Where are you going?’

‘Going to sea, Sir.’

‘Going to sea—going to the devil!’

‘I hope not, Sir,’

‘Going to sea! You had better, I tell you go to the devil at once’—reiterated glorious John—dwelling on the temptations, the difficulties, the loss of time and fame that must be the result of so rash a step, and insisting on another interview after the pause of a week. Owen revisited his rough but downright friend at the expiration of that time, when Abernethy proposed an appointment in the College of Surgeons. This was accepted:—our youthful anatomist and him-

self happily associated in congenial labours with one of congenial mind; and so the Navy lost a good officer, and science gained one of her brightest ornaments.' "

After glancing at the state of the Hunterian Museum in 1826, and the singularly responsible position in which Mr. Clift was placed, when put in charge of that national monument of great mental victory in an unknown field unassisted by the powerful aids of modern science, and the difficulties opposing the formation of a long desired catalogue, we are led to examine the results of the combined exertions of these two congenial spirits in the mastery of these difficulties and in the promotion of the science itself.

The great difficulty encountered in arranging and classifying the Hunterian collections, was to ascertain the species of animals dissected by the founder, some general remarks on the subject of the preparations or the particular physiological principles to be illustrated by them, being all that remained from the pen of Hunter. Owen who had acquired a knowledge of the principles of zoology at Edinburgh, now resumed the study of the external characters and affinities of the animal kingdom, with the aid of Mr. Broderip. From this time we find him employed in the preparation and publication of the catalogues of the various departments of the museum. In the introduction to the volume containing the nervous system and organs of sense, the connective and tegumentary systems and peculiarities, is embodied a remarkable manuscript of Hunter, illustrative of his application of the facts of comparative anatomy which he had ascertained, not only to the establishment of sound theories as to the functions of the different organs, but to the natural distribution of animals into classes according to their affinities. The two concluding volumes of the 'Descriptive and Illustrated Catalogue' called for acknowledgment on the part of the council of the College of Surgeons.

'The unremitting labour which has been for many years bestowed on this work by Mr Owen, one of the Conservators, and now Hunterian Professor of Comparative Anatomy and Physiology to the College, to whom its publication has been exclusively confided.'—vol. v. p. xv.

Mr. Owen truthfully says, with reference to the labours of his great prototype.

'The period which has elapsed before these general laws began to be appreciated in the country where they were first detected, affords, perhaps, one of the strongest indications of the great advance which Hunter had made in physiological science.'

The idea of progressive development was somewhat obscurely pointed out in Hunter's manuscript on the "progress and peculiarities of the chick" from which we may perceive says Owen, "that his mind

was oppressed with both its novelty and vastness," and he adds "men's minds require to be familiarized with propositions of such generality before their exact limits and right application be appreciated."

Some idea may be formed of the vast mass of anatomical labour involved in the illustration of the works of his great predecessor, by perusing the following:—

'It is impossible,' he says, 'to reason correctly upon the structure of a detached organ, unless the condition of the rest of the organisation, and the habits and mode of life of the species be known; but to this end the name of the species from which the detached organ was derived is indispensable; without this fact, the contemplation of the most elaborately dissected specimen can yield little satisfactory information, and to determine it became, therefore, the first and most essential step in the formation of the catalogue of the physiological specimens. This part of their history has, in most cases, been effected by a comparison of the Hunterian preparations with recent dissections.'—*Phys. Cat.*, v. xiv.

From the sponge to the man no form of animal life has escaped his researches, and he seems to have thrown new light on each subject. In the memoir on the *Lepidosiren* is given the first account of one of the most extraordinary of vertebrated animals, if that can be so called which vertebræ has none; he establishes by a train of most beautiful anatomical evolutions the true piscine character of the animal. In regard to that form of quadrumanous mammal which makes the nearest approach to man, and of which Curvier appears to have entertained obscure ideas, from the fact of his being acquainted only with the immature characters of both the Orang and Chimpanzee, Owen communicated the required knowledge at a time when the revival of the hypothesis of the transmutation of species began to agitate the scientific world. Most of the characters which were supposed to bring the Orang and Chimpanzee in disagreeable proximity to man are shewn to be transitory and peculiar to the immature animal, whilst yet retaining the deciduous teeth. His investigations of the several species *Pithecius* and *Troglodytes* from Borneo, and the Gaboon River have been of the most startling and elaborate nature. It would, indeed, be futile to analyze even in the briefest manner the subjects of his numerous works and minor contributions; nor can we contemplate the wonderful amount of admirable labour they display, without being struck by the power and energy of him who has done so much for fame and for science before he has passed the prime of intellectual life! His merits and name are universally known, and he is recognized throughout Europe as the Cuvier of England.

We shall proceed to consider the effect of his labours on the classification of the animal kingdom.

(To be continued.)

## Correspondence.

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*To the Medical Profession of Canada West.*

TORONTO, *May 14, 1852.*

GENTLEMEN,—

Many circumstances connected with the progress of this country, have hitherto conspired to keep the Profession to which we belong, and by which we live, in a comparatively subordinate place in the social scale. It appears to me that the greatest obstacle to our attaining the position to which we are entitled from every consideration, is the absence of unanimity among ourselves—an evil engendered by the ignorance in which we live, not only of each other personally, but of our mutual wants, opinions, and acquirements.

To remove this barrier must be the desire, I am sanguine enough to believe, of every conscientious and enlightened practitioner,—I, therefore, invite you, as many as can conveniently attend, to meet in this city, on Thursday, the 1st day of July, for the purpose of taking such counsel together as may lead to a course of action calculated to place the Profession on a proper footing.

I make this appeal to you, because I feel deeply interested in the welfare of a Profession of which I have been for many years an active member in this country and elsewhere, and because I believe I am one among the oldest of the practitioners in this Province. I invite you to meet here, because it is the capital of this Province, easily accessible at that season from all parts of the country, and because a point of centralization is necessary in every undertaking of this nature.

Should it be considered a more convenient mode of proceeding, I suggest that each county should assemble, and elect a number of delegates who would represent the views of their constituents. Permit me to make one request in connection with this point, should such a plan be adopted: banish from your minds every other consideration but the interests of your Profession, and select men of experience, education, and enlightened views.

I am, Gentlemen,

Your most obedient servant

And sincere well-wisher,

C. WIDMER.

*To the Members of the Medical Profession.*

GENTLEMEN,

“Whoever has thoughtfully considered human life, as it exists in this stage of man’s progress, will hardly require personal experience to be convinced that, in any large body of men, there must, of necessity, be a certain proportion who, for some reason or other, fail to attain or to preserve that social position which can, at all times, secure to themselves and families the means of independent support, suited to their station; or even the means essential to the maintenance of bare life. And the slightest observation of what passes around them in the world, will leave no doubt on the minds of medical men, that the actual state of things regarding the members of their own class, affords a sad illustration of the truth of the general proposition.

From manifold causes, avoidable or unavoidable, springing from individual and personal sources or depending on more external relations of a professional or social kind, hundreds of medical men, their wives and children and other near relatives naturally dependent on them, are known to be in great distress, from the failure of that source of support on which they are necessarily dependent. Many of the causes of these misfortunes lie on the surface, and will be recognised by all. Of this kind may be mentioned:—Original deficiency of means requisite to gain a firm footing in practice; failure from over-crowding of the professional field, generally, or in particular localities; failure from other unavoidable causes; loss of friends who were kindly assisting the struggler in his early path; loss of fortune from accidental circumstances; and, above all, and most especially, loss of health in manhood, the infirmities necessarily accompanying old age, and finally death, which, sooner or later, must terminate the exertions of all.

It is altogether unnecessary to enter more fully into the sources, nature, or extent of the great and manifold evils now adverted to. Every one has only to question his own memory, or to look abroad on the field of his individual labours, to know and to feel, that the outline here sketched comes, every way, within the limits of reality. The inquiry is not—Do the evils exist? or, What is their amount? but—How shall we best relieve them and remove them, now and hereafter?

It is a principle universally recognised by men qualified to judge of human affairs, and especially by those who have devoted themselves to the cure of the social maladies of these latter times, that the only safe and sure mode of relieving and removing the distresses and difficulties of men dependent for support on their own exertions is, the Union and Co-operation of the individuals themselves, with the direct purpose of meeting and overcoming the evils to which their particular lot is especially obnoxious. Such is the providential arrangement of human affairs, and such the harmonious relations of events bearing on these, that a system of UNIVERSAL COMPENSATION is found to prevail, whenever men take pains to seek for and to involve it. By means of this principle, most of the inequalities of lot among

mankind at large might be successfully coped with, if men made a proper use of their reason, under the guidance of philanthropy and benevolence. In particular classes of men of limited extent, united by special ties and having all their great interests in common, these individual inequalities might, for the most part, be easily met; and, much to the honour of our own times, in a great many cases they are so met. All that is requisite to effect this most desirable result is, that the individuals of the co-operating body shall consent, during their *ordinary or average state*, to make a trifling sacrifice of present means, a mere fractional deduction from some of their present superfluities or indulgences, or, at most, of their dispensable comforts, in order to provide that *general compensating medium*, to which they may look in the event of their falling below this ordinary or average state. Those who are so fortunate as not to require such compensation, have, by this arrangement, the gratification of knowing and feeling that they had prepared against the contingency which was as likely to be their lot as another's; while, at any rate, they have administered to the necessities of their less-fortunate brethren who, in a reversed state of things, would have been the benefactors and not the benefited. Money being now the universal representative of things relating to man's material wants, it is, of course, by means of it that the co-operative and compensative principle is carried into practical effect. It is in this point of view, that a mere trifle deducted from the weekly, monthly, or annual income of any set of men—scarcely at all missed at the time—may be made to return to them, in the day of their necessities, multiplied a thousandfold; and stand to them as strength in their weakness, health in their sickness, competence in their poverty, vigour in their old age, and even take the form of blessings to those nearest and dearest to them, when they themselves have paid the great debt which all must pay.

In all these arrangements of the co-operative or mutual kind, this essential quality, this crowning excellence, is never to be overlooked, namely, that while they stimulate and gratify the active feelings of benevolence and brotherly love in all who contribute to the general stock, they entail no sense of dependence, much less any obligation of charity, on those whose lot it is to draw from it. What they gave they gave voluntarily for the good of all; what they receive they receive as a right, not as a boon; or, if a boon, only such a boon as the best and most independent of men ought to be happy in receiving from their fellows, in recognition of the common weakness of their common humanity. So far from being a burthen on either party, such aid is, assuredly, of the kind that is "twice blessed, blessing him that gives and him that takes." Unlike eleemosynary relief, or charity in the common sense of the word, this mode of ministering to man's wants, so far from degrading the receiver or encouraging a slavish spirit of dependence, cherishes feelings of independence, excites the noble pride of self-reliance, engenders habits of moderation and prudence, and checks the tendency to imprudence and thoughtless extravagance so common to us all. Such an arrangement teaches even the young to look before and after, and forces every one to take that sober and

practical view of life which becomes all who have entered upon its active duties and incurred its manifold responsibilities."

Such are the eloquent and incontrovertible statements of the Board of Directors of the "BRITISH MEDICAL FUND," a Society which has existed for some years in England, and whose object is to unite the members of the profession into one body for mutual support and defence, on the common ground of humanity and professional brotherhood. The Society was first founded and conducted by Edward Daniell, Esq., at Newport Pagnel, but finding his original plan defective in some of its parts, and encountering much difficulty in working it in the country, he relinquished the direction of the Society in 1849, at a public meeting of the subscribers called for the purpose of placing it on a firmer and more scientific basis. The Society now numbers over 300 members, and is under the direction of such men as Sir B. Brodie, Sir James Clarke, Dr. Johnstone, Dr. Locock, Mr. Fergusson, Sir Charles Hastings, Mr. C. Hawkins, Dr. Golding Bird, Dr. Symonds, Sir John Fife and Drs. Babington and Forbes; the last named gentleman being the Chairman of the Directory. These names are I think a sufficient guarantee for the character of the Society. The following plan of the objects and constitution of the Society will I hope be sufficiently explicit.

#### PLAN AND OBJECTS OF THE SOCIETY.

This Society which is strictly confined to members of the Medical Profession, is divided into two separate and distinct Branches, a PROVIDENT BRANCH and a RELIEF BRANCH; its object being to afford the members every facility for providing for themselves and their families, by means of provident savings, sure resources against the infirmities of advanced age, and those evils arising from the contingencies of ill health, shortened life, or loss of fortune, which beset the path of all professional men.

All members of the Medical Profession throughout the United Kingdom, and who shall be duly qualified by law to practice, are eligible to become members of this Society. The terms of membership to consist in an annual subscription of One Guinea, or a Life Subscription of Ten Guineas.

#### I.—THE PROVIDENT BRANCH.

The Provident Branch is strictly a self-supporting fund, dependent on the premiums of the members subscribing to it; but a member having subscribed to the Provident Branch, may cease to subscribe to the Relief Branch.

The following are the different forms in which it purposes to carry out its objects:—

1. *Deferred Annuities to the members themselves*, varying from £50 to £100, to commence at any specified age, from fifty to seventy.
2. *Annuities (of like amount) to the Widows of Members.*
3. *Annuities (of like amount) to the Children of Members individually.*
4. *Family Annuities (of like amount) to the whole Children of a family conjointly.*
5. *Allowances of from £10 to £100 per annum, during Sickness or other incapacity, temporary or permanent, to commence, at any age, on the occurrence of the incapacity.*

6. *Fixed Sums (not exceeding £200), payable on the death of the subscribers, to their heirs, on the ordinary principles of Life Assurance.*

Before reversionary Annuities can be granted to any one, the number of Subscribers to Forms 2, 3, 4, must conjointly amount to 250.

Before allowances under the Sickness Fund can be granted, the number of Subscribers to this branch must amount to 200.

THE RELIEF BRANCH.

This branch is strictly auxiliary to the Provident Branch. All sums paid to the Society under the name of Annual, or Life Subscriptions, Donations, Legacies, Bequests, &c., &c, belong to it. Its benefits are entirely restricted to members and their relatives. The Directors are invested with a discretionary power in granting relief to claimants; but the following are some of the most distinguished and special modes of appropriation contemplated by the Society.

a. To grant advances or to afford other assistance to such Subscribers for Annuities, Sickness Allowance, or Life Assurance, as might otherwise be unable, from sickness or other causes, to pay their premiums when due.

b. To make donations to members who may be disabled by disease, or otherwise.

c. To grant relief, under similar circumstances, in special cases, to the widows and orphans, or other near relatives of members.

d. To augment, by annual grants, the annuities of widows and orphans, when, from particular circumstances, they are found inadequate.

e. To grant loans to members of a certain standing at low rates of interest, or even without interest, under special circumstances.

I have been in correspondence with Mr. Hawtayne the Secretary of the Society who has most kindly put me in possession of the necessary documents, tables and information required for the working of the Institution, and these can, with a very trifling correction be made to apply to this country, where the higher rate of interest obtained for money, will ensure a somewhat lower rate of premium and more certain success.

Having made myself familiar with the details of the system of this Society, I am prepared to submit a plan for the formation of a similar Society in this Province, and shall embrace the opportunity of the meeting called by the Honble. Dr. Widmer, or at such other time as may be most convenient for the majority of those who may signify their intention to operate in its establishment.

I may add that in all the departments, the rates of premium do not appear to be as high as the usual rates of ordinary Life Assurance Companies.

I shall be most happy to receive communications containing the name and address of those who feel disposed to join in this attempt to introduce a good and successful institution from the Mother Country.

I have the honour to be,

Gentlemen,

Your obedient servant,

HENRY MELVILLE, M. D.

TORONTO, MAY 15th, 1852.

AN IMPORTANT MOVEMENT.

WE solicit an earnest compliance with the invitation contained in the letter of the Honorable Dr. Widmer, which is given under the heading, correspondence. We cannot refrain from expressing our conviction that if there should be a good attendance of the Profession on this occasion, the most important steps will be taken to place its members on that footing throughout the Province, to which they are justly entitled, and from which they have been hitherto debarred. The notice given is ample—the time chosen very favorable—and the place selected is, under all circumstances the most convenient and appropriate for the purpose. We therefore hope to see a full attendance upon that occasion. We have reason to know that it is only after mature reflection and some degree of hesitancy arising from personal considerations, that Dr. Widmer has formed the resolution of appealing to the Profession; let not the appeal be in vain; his age, his acquirements, his standing in the Profession and in society and the prominent part he has filled in the history of the Country, entitle him to what we know he fully enjoys, the respect and confidence of the Profession and the Public generally.

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NOTICE TO CORRESPONDENTS.

“MEDICUS.”—From the description you give of the case, there can be little doubt that it was one of “Purpura.” The treatment we have generally found most successful, has been *tonic* and mild diuretics. We refer you to Cazenave, Willan and Bateman, Wilson cum multis aliis. In almost every periodical for the last twenty years you will find cases recorded of a similar character. Will Medicus say why he has departed from the general rule of giving his real name to the Editor?

MR. JARROX's letter and enclosures are thankfully acknowledged, his hints will be attended to.

DR. KELLOGG's communication in our next.

DR. MCKELCAN's communication shall appear in our next issue. His suggestions, as far as practicable, will be complied with,