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THE

BRITISH AMERICAN JOURNAL.

ORIGINAL COMMUNICATIONS.

ART. XXXIX.—*The Correlation of the Vital and Physical Forces.* A Prize Thesis for the Degree of M.D., C.M. By R. MAURICE BUCKE.

PART II.

I pass on now to the consideration of the second part of my subject, and if any impression has already been made by the foregoing arguments I doubt not but that it will be materially strengthened by those now about to be adduced.

I shall speak then in this place of those cases where the physical forces pass into the vital; and conversely the vital into the physical by direct contact with the living or recently dead tissues.

It is known that to effect the conversion of one physical force into another, some special material must be used through which to act, and this material differs somewhat in the case of each instance of correlation; though at the same time many and very diverse bodies will often supply the necessary condition for the same change. Now, however, we have an entirely distinct modification of force to deal with, and it might easily have been predicted *a priori* that some special material substratum would have to be employed to effect the conversion of ordinary force into this new one. And this, in fact we find to be the case, for to effect the conversion of these forces, the one into the other, we must always have organized matter through which to act, and though this is not of necessity alive, in the ordinary acceptation of that term, yet it must be in a state closely allied to vitality, as recently dead tissue, or as in the case of the seed which is said to be in a state of "dormant vitality." And here we have as it seems to me, an almost, if not quite, insuperable bar to the doctrine of equivocal generation; which can never be received till some exception be pointed out to the law I have laid down.

It may be considered as proved by the following facts that nerve force and electricity are not identical. For (1) no electric current can be detected in a nerve along which nerve force is known to be passing. (2) By ligaturing a nerve its conducting power for electricity is not in the least impaired; while for nerve force it is destroyed. And (3) if a piece of nerve be removed and the ends thus left be connected by means of a conductor, electricity will still pass along it, but nerve force will not.*

* Lectures on Physiology by Prof. Fraser.

But it must equally be allowed that some exceedingly close relationship does exist between them, for if a current of electricity be passed along a motor nerve, even for a part of its course, contraction of the muscles supplied by that nerve is the result. If an afferent nerve be experimented upon the same way, whether a nerve of common sensation, the optic, auditory, gustatory, or olfactory, a pricking sensation is experienced, flashes of light seen, sounds heard, a peculiar taste, or a phosphoric odor perceived, in accordance with the function of the nerve operated upon.*

Now if in the case of the magnetization of a bar of iron by the passage of a current of electricity round it, a conversion of the electric force into the magnetic be conceded, such connection can scarcely be denied in these cases in which a perfect parallelism to that of the magnetization seems to exist. But to follow out the analogy—for magnetism will under the proper conditions produce electricity—the converse should hold, namely, that the nerve force will produce the electric; and this is seen in the most remarkable manner in the case of the electric fishes of which the *Torpedo*, the *Gymnotus electricus*, and the *Silurus electricus* are best known. In them a special division of the nervous system is set apart for the production of nerve force, which by means of a particular form of apparatus—supplying the special material substratum required in this case—is converted into electricity. That in this case the nerve force is in fact converted into electricity, or bears some very analogous relation to it, is as well capable of proof as that in other cases it excites the contraction of muscles, for from the electric lobe proceeds a large nerve trunk, which when it reaches its destination in the electric apparatus, divides into minute branches which ramify profusely in all directions. Now if this nerve be divided, the apparatus fails to evolve electricity; if partly divided or injured, the discharge is weakened; if the electric lobe be removed, destroyed, partially taken away, or injured, similar results follow; and if the lobe be irritated the discharge is increased. If now the nerve be divided, and the cut end belonging to the peripheral extremity be acted upon by electricity, mechanical irritation, chemical re-agents, or heat, the result will be a passage of *nerve force* along the trunk of the nerve, and an evolution of *electricity* from the apparatus.

It will be observed that by reading motor centre for electric lobe, and muscle and muscular force, or motion, for electric apparatus and electricity, all the phenomena connected with a motor nerve centre, a motor nerve trunk, and a muscle, in their relation to one another, will have been given in the above description. It is, however, probable that there is a great difference between the relation that nerve force bears to electricity in the one case, and to the motion produced in the other. For whereas in the case of the muscle the nerve force is certainly not converted *directly* into motion, but bears a more distant relationship to it, as we shall see further on; on the other hand in the case of the electric fish it is highly probable that the electricity is developed directly from the nerve force by the conversion of the latter into it, at least the extreme exhaus-

* For the facts in this paragraph as well as for several others of the same kind further on, I am indebted to Dr. Carpenter's article in the Phil. Tran. for 1850 on "The mutual relations of the Vital and Physical forces."

tion and even death of the animal after actively using the organ for some time,* and the fact that no other origin of it has been pointed out, would seem in some degree, to justify us in coming to this conclusion.†

If we pass now to heat we shall find exactly the same relationship prevail; there can be no doubt but that our perceptions of heat and cold depend upon a conversion of heat into nerve-force taking place in the peripheral extremities of the nerves which transmit such impressions. The argument for the establishment of this, and which would apply in all similar cases, would take something of this form, Given a force applied to the extremity of a nerve, and *then* a force of a different character passing along that nerve. Either (1) the subsequent force, which passes along the nerve must be generated *de novo*—i. e., created; or (2) it must have been roused from a dormant state; or (3) it is the resultant by conversion of the force which has in any case excited it. Now we have seen reasons above for rejecting the two first conclusions, it only remains to us therefore to accept the last explanation.

Heat applied to a nerve of special sense produces the sensation that is caused by a normal stimulus of that nerve through its special organ. Thus, applied to the optic nerve, flashes of light are seen; to the auditory, noises heard, and so on; applied to the course of a motor nerve it produces motion in the muscles supplied by it; in all cases, causing a current of nerve force to pass along the nerve to which it is applied as the first step in its operations.‡

Conversely, there are phenomena that make it highly probable that although we must attribute most of the heat developed in the human body to *direct* chemical action, some of it may be derived from a conversion of nerve force into it. In this way we may account for "the sudden elevation of temperature that occurs under the influence of nervous excitement, whether general or local; the equally sudden diminution that marks the influence of the depressing passions, and the rapid cooling of bodies of which the nervous centres have been destroyed, notwithstanding that respiration is artificially maintained, and the circulation continues.||"

Chemical re-agents applied to nerves in their course will produce all the effects which we have seen to follow the application of heat and electricity;§ while, as the converse of this, it is well known that nerve influence may change the chemical properties of the secretions in the most marked manner, and even probably produce chemical alteration in the blood itself, or the solid parts of the organism;¶ and that it excites chemical change in the muscles there can be no doubt.

We have a striking instance of the conversion of light into nerve force in the phenomena of sight, the mode of which conversion being a matter of little im-

* Encyclopœdia Britannica, 8th edition. Art. Electricity.

† Compare Carpenter's "Principles of Comparative Physiology," pp. 408–471.—Encyclopœdia Britannica, 8th Edition, Art. Electricity; and Carpenter on the "Mutual relation of the Vital and Physical forces," Phil. Tran., 1850.

‡ Carpenter, Phil. Tran. 1850.

|| Carpenter, "Principles of comparative Physiology," p. 401; see also his "Human Physiology," pp. 417 et seq.

§ Carpenter, Phil. Tran. 1850.

¶ Carpenter, "Human Physiology," pp. 740–746.

portance in our present inquiry. Whether we are inclined to accept Draper's* very ingenious explanations of it or not, the fact that such change does take place can scarcely be denied; the argument for the proof of this conversion would be similar to that used on a former occasion when speaking of heat.

Conversely, although most cases of animal luminosity may be fairly referred to slow combustion, or phophoresence, in the part where such effect is manifested, yet this explanation does not seem adequate to account for all instances of this kind; and it is believed that in some cases, more particularly in the cases of the marine *Annelidæ*, and some other of the *Articulata*, a conversion of nerve force into light takes place.†

The relation between nerve force and motion has been considered as being a more remarkable instance of conversion than any of those above specified.‡ But this does not seem to me at all so clear as at first sight it might appear to be. For it is certain that in the relationship existing between motor nerves and their muscles, no conversion of nerve force into motion takes place, but, as we shall hereafter see, a connection of an entirely different character obtains. However this may be the converse of it holds good; for motion in the form of mechanical irritation applied to a nerve at its periphery, or in its course, will be followed by a nervous current along that nerve and by excitation of its centre. That is to say, when applied to a nerve of common sensation it causes pain; to the eyeball or optic nerve, flashes of light; to the auditory, sounds; by striking the tongue quickly and lightly with the tip of the finger, a distinct taste is developed, sometimes saline and sometimes acid.||

I have said that the motion produced by the contraction of a muscle cannot be regarded as a continuation of the nerve force which called that muscle into action. It seems sufficient reason for this assertion that there is another, and distinct source known to which to refer for the proximate antecedent of the motion, namely, the chemical change taking place in the muscle; the relation of which to the force put forth is so well shown by the different amount of urea formed under the different circumstances of activity or rest of the muscle.§ Still that there is an intimate relation between the current in the motor nerve and the muscular contraction is well known, and also that in a certain sense a quantitative relation exists between them, the degree of contraction in the muscle being entirely dependent, *cæteris paribus*, upon the amount of stimulation or nerve force conveyed to it by the nerve supplying it. The relation then between nerve and muscular force, though intimate, is certainly not that of direct conversion, but seems to be extremely analogous to that which light bears to the force produced by the union of hydrogen and chlorine when their combination is determined by the action of its rays upon them; for the amount of nerve force, as of light, supplied in any given time, other things being equal, deter-

* Draper's "Human Physiology," pp. 392 et seq.

† Carpenter, "Principles of Comparative Physiology," p. 447. Compare Todd and Bowman "Phys. Anatomy," pp. 224 et seq.

‡ Carpenter, Phil. Tran. 1850.

|| Baly's translation of Muller's Physiology, p. 1002.

§ Draper's "Human Physiology," pp. 444 et seq. and Carpenter's "Human Physiology," p. 391.

mines the amount of chemical change in the muscle or in the mixed gases, and consequently the amount of force (Laws I. and III.) that will be put forth or evolved, but in neither case does the determining agent supply the force thus yielded. But the nerve force as well as the light, (according to the theory here advocated) must have a resultant when it ceases to exist as such, and I would suggest the possibility of that resultant being the heat, or part of it, that is always produced during normal muscular contraction.

If we consider now that on the one hand all the physical forces are mutually convertible into each other, and on the other that nerve force is considered as the highest form of power put forth by organised beings, besides being (as must be granted) probably correlated to all the rest; it must be allowed that the foregoing facts go far towards establishing the relation contended for here, between the vital and physical forces, for if each one of the two groups of force have its own forms of force convertible into each other, then it only requires one connecting link to establish the unity of all the forms of both groups. But because we cannot point out any one link that would fulfil this condition so as not to allow of any cavil, it is necessary that we should have a large number of instances of conversion, each of which should be as reliable as possible under the circumstances, so that by many probabilities, all pointing in one direction, we may establish that which cannot be shown to be absolutely true by any one direct fact.

Instances (or at least seeming instances) of conversion coming under this division of the subject might be multiplied, but it would be tedious to do so, and would serve no purpose, for if those instances already adduced are not received as cases of correlation, any others would hardly be so; and if they are so looked upon there is no need of adding to them, and it must be obvious to every one that if this view be the true one, every vital manifestation must be an example of correlation, since every vital force, in its origin as such, must proceed from a physical one. I shall, however, briefly consider muscular action for the purpose of seeing whether this theory is capable of throwing any light upon it.

Each form of cell, as we have seen above, has its own proper form of "cell force," which it evolves under certain determinate conditions; this force has for its antecedent that set free by the chemical changes going on in the cell itself, the conversion being effected by the particular form of matter (the cell) through which the force passes. Now as the cell is the form of matter (*par excellence*) through the agency of which the physical forces are changed into the vital, so each form of cell has its own form of vital force which must result from the fact of its having its origin *as vital force* in that cell.

As the proximate origin of the force liberated by each cell is to be found in chemical change, so the stimulus that calls that cell into action is something that will determine the taking place of that chemical change, and may be itself exceedingly small in quantity compared with the force which at first sight it might seem to produce.

The cells* of muscle are chemically composed of exceedingly complex bodies;

* I follow Sharpley and Carpenter (Prof. Fraser's lectures on Physiology,) in considering muscles as ultimately composed of cells: in reality it does not appear to me to be of any consequence for our present purpose whether we call them such or fibrillæ.

the affinity exercised between the elements of which seems to be very slight and their stability remarkably feeble; from which it results that their elements may easily be made to change their chemical condition (Law II.); and also that when they fall into low forms of combination in which the affinity exercised by them will be great, a large quantity of force will be set free (Law III.); and in this fact we have the reason for the great complexity in chemical constitution which obtains in tissues through which much force has to be evolved, that is, whose functional activity is great.*

This being the state of affairs what is next required is, first, another force which shall so act upon the complex bodies as to cause the chemical change, and second, a form of matter, in the passage through which this force set free shall assume the form required; these two conditions we have fulfilled in nerve force on the one hand, and muscular tissue on the other. But any other force may take the place of the nervous as when an isolated muscle is called into action by heat, electricity, mehanical irritation, etc.; and again the cell may be in some way so altered that it shall lose its property of directing the force set free into the normal vital channel, and then we shall have another form of force evolved, which in accordance with the rule, in cases of chemical combination, will be mostly or entirely heat. This aberration is seen during life in certain morbid states of the system as in pyrexia (?), and after death of course it always happens; and if the circumstances attending the death be such as to leave the elements in a more than usually unstable condition we shall have a rise in the temperature of the dead body, as is often seen in cases of cholera, yellow fever, etc.†

In health, because it would seem some little chemical change, probably connected with nutrition, must always be going on, when the muscle is at rest and therefore not liberating any of its proper force, electricity in small quantities, (for the change is small) takes its place; but as soon as the muscle is called upon to give out its proper form of energy, its evolution ceases.‡

And on these same principles we shall be able to explain the fact that irritable men of sanguineous temperament, (that is, as I understand it, men the elements of whose tissues are in a less stable condition than obtains in other people) have more of this free electricity than others.‖

Part III.

To pass now to the third and last division of the subject, namely, the nature of the influence of the physical forces, principally light and heat, upon the living plant or animal in the ordinary state of nature.

And first of heat.

All organized beings are dependent in a greater or less degree upon the temperature of the medium by which they are surrounded; but plants and cold-blooded animals are so to a much greater extent than warm-blooded, from the fact that in

* For it would seem to be a law, to which there are certainly seeming exceptions from the operation of other laws interfering with it, that the more complex a body is, the weaker is the chemical affinity exercised by its elements.

† Carpenter's "Human Physiology" p. 410.

‡ Carpenter's "Human Physiology" p. 425.

‖ Carpenter's "Human Physiology" p. 429.

them the vital forces are not derived wholly from the chemical changes going on within them, but are in part, and sometimes in great part, obtained directly from this very temperature, and the light that usually accompanies it.

It would seem that in plants, though light by its action on carbonic acid and ammonia supplies them with a great part of their food: heat is the force which, by its passage through the living tissue being changed to vital force, has to perform in great part the assimilative and nutritive functions. I say in great part, for in the union of the elements that had been set free by the agency of light, some force must be evolved, though this from the feebleness of union in the bodies formed must be small in amount (Law I) I am free to confess that I am not very clear on this point in my own mind. And here a question (alluded to above) arises of great interest and importance. In those bodies as starch, sugar, lignine, cellulose, etc., etc., which constitute the great mass of plants, and in which hydrogen and oxygen are in the proportion to form water, and where they are derived from water, are they in any degree separated? that is, has the affinity exercised by them in water been weakened when they are combined with carbon to form these new bodies.* I have no doubt that this must be answered in the affirmative, and if so the result is obvious, we must have a force to effect this decomposition beyond the force that is evolved in the formation of the new body (Law IV). If then to supply any of these needs plants are dependent upon heat, as, to fulfil their other wants they are on light, it is clear that a certain amount of heat will be required for any given amount of growth and development exhibited by the plant; that is, a quantitative relation must exist between the force supplied and the vital force put forth which depends upon it; and this is seen to be the case in the most striking manner, for according to Bousingault "the same annual plant in arriving at its full development and going through all the processes of flowering and maturation of its seed, everywhere receives the same amount of solar light and heat, whether it be grown at the equator or at the temperate zone, its rate of growth being in a precisely direct ratio to the amount it receives in any given time."

Very much the same thing is seen in the case of the lower cold-blooded animals though what is the nature of the relation existing here between the physical and vital force, I do not pretend to say; it may be that the former merely furnishes a necessary condition for the evolution of the latter from other sources; or it may be changed into it directly; or again the heat may alter its form and becoming chemical force may so pass into the vital; be this as it may, the relation exists and is well seen in the case of the *Crustacea*. For 1, the variety of their form and organization (which may be regarded as so many varied manifestations of

* A carefully conducted experiment, such as I do not know has ever been performed would readily settle this question—for if the H and O are separated, as I suppose, a given quantity of dry wood would yield more heat in its combustion than would as much charcoal as there was carbon in the wood in its combustion; but if the affinity between them is not at all lessened it would yield less, for we should have to subtract from the amount of heat evolved by the carbon, the strength of the affinity existing between the H O and the C in the wood. Is it not the union of the oxygen and hydrogen in wood, forming water, without the participation of carbon in the combustion, that constitutes the main part of the process in the formation of charcoal by suppressed combustion?

the organizing force) increase as we pass from the polar seas towards the equator the number of species thus augmenting greatly as we go southward. 2. The differences of form and organization are not only more numerous and more characteristic in the warm than in the cold regions of the globe; but they are also more important. 3. Not only are those *Crustacea* which are most elevated in the scale deficient in the polar regions, but their relative number decreases rapidly as we pass from the equator towards the pole. 4. The average size of the *Crustacea* of tropical regions is considerably greater than that of the tribes inhabiting frigid or temperate climes. 5. It is where the temperature is most elevated that the peculiarities of structure which characterize the several groups are most strongly manifested. And 6. There is a remarkable coincidence between the temperature of different regions and the prevalence of certain forms of *Crustacea*.*

The rate of performance of their functions in cold-blooded animals depends much upon the temperature in which they live. Now as the respiratory process is an exponent of the rate of life of any animal, that is of the rate of chemical change taking place in the organism, it follows from the above that should this be stopped, the length of life of the animal will be in the inverse ratio of the temperature to which it is exposed; and so we find it, for when frogs were confined in a limited quantity of water and not allowed to come to the surface to breathe

They died in	12	to	32	minutes	when	the water was	90°
" "	35		90	"	"	"	72
" "	350		375	"	"	"	50
" "	367		498	"	"	"	30

At the lowest temperature mentioned the prolongation of life was not due to torpidity, for all the functions of the animal were performed, but slowly.‡

In the production of larvæ from the eggs of insects, we see very much the same relation between heat and the vital force as in the case of plants; for the rate of development is in the direct ratio of the heat supplied, and the final transformation may be accelerated or retarded at pleasure, within certain limits, by regulating the amount of heat which they receive; but in every case—in eggs of the same insect—the same amount of heat is required, and must be supplied to effect the same transformation.||

The regularity observed in the period of gestation in warm-blooded animals, is no doubt due in great part to the regularity of temperature that they are capable of sustaining under nearly all circumstances, and which is necessary to the continuance of their vitality, and I would be inclined to think (though I cannot anywhere find it so stated) that the temperature of warm-blooded animals decreases as age comes on, from the single fact (if it be a fact) that the period of gestation is prolonged in accordance with the advance of age.

Besides the influence exercised by light in the decomposition of carbonic acid and ammonia in contact with the green leaves of plants, there is no doubt that

* Milne Edwards "Histoire des Crustaces tome iii pp. 555 et. seq. quoted by Carpenter in his article in Phil. Tran. 1850.

‡ Dr. F. W. Edwards "On the influence of physical agents on life."

|| Carpenter, Phil. Tran. 1850.

it is a force which is extensively used in the process of development, that, in some cases, at least, it determines the manner and direction of growth in a very remarkable degree. A very curious example of this kind is furnished by the experiments of Mirbel upon the gemmæ of *Marchantia polymorpha*. He found after thoroughly testing the matter, by repeated trials, that during the development of these little discs, stomata are formed upon the side exposed to the light, while root fibres grew from the under surface; and it is a matter of indifference which side of the disc is at first turned upwards, since each has the power of developing stomata or roots according to the influence it receives.*

This division of my subject might be almost indefinitely extended, but I have not attempted to do more than notice some of the more salient points belonging to it, which is all my space will admit of.

Higher in the scale of organization there are to be found such facts as the influence of light in the development of tadpoles into frogs;—multitudes of the like instances will present themselves to the mind of every one.

Finally, to test a theory we examine it in all its ramifications, and if it be found to be absolutely opposed to fact in any one case it cannot stand. So if any physical or vital force, however inconsiderable in amount, can be shown to be produced in the ordinary course of nature, as we observe its operations, which do not proceed from some antecedent physical or vital force, such theory can no longer be entitled to belief or consideration. But if, on the other hand, there are vital forces of which we do not know the antecedent force, or that they have any except from analogy, it is the business of the holders of this view to endeavour to clear up, and show the connection between such forces and their correlatives, either in the organic, or in the inorganic world; or to show, if such be the case, that none exist, and so destroy a false hypothesis.

ART. LX.—*Wood's operation for the radical cure of Hernia.* By FRANCIS WAYLAND CAMPBELL, M.D., L.R.C.P., Lond.; Member of the Royal Medical Society of Edinburgh, &c.

In the London Medical Times Gazette of June 1861, Mr. John Wood, one of the Surgeons to King's College Hospital, communicated a new method for the radical cure of Hernia, which he had performed some thirty times with very great success. Having lately been in communication with Mr. Wood, he has informed me that he has made some modifications in the operation, and in a letter to me dated June 16, 1862, describes the method he now pursues. As it may be interesting to the profession, I subjoin the letter. Those who may wish to peruse a description of the operation as originally performed, will find it, as above mentioned, or in Braithwaite's Retrospect of Medicine, Vol. XLIV. July to December, 1861.

London, 4 Montague Street, Russell Square, W.C.,
June 16, 1862.

Dear Sir.,

I must apologize for the delay in answering your note. One reason is that I have been absent from town part of the time. Another that I have

* Carpenter, Phil. Tran. 1850.

modified somewhat the operation since you saw it, and was anxious to see the result. The method I now adopt is, 1st to ivaginate the scrotum into the canal and feel for the lower border of the internal oblique,—raise this on the finger, and then you are sensible of the presence of the conjoined tendon to the inner side. An assistant then draws the skin of the groin gently towards the median line. One of the needles is then passed down on a level with and to the inner side of the internal ring, till the point is felt by the invaginating finger on the inside of the nail. This finger is then slowly withdrawn, and the point of the needle pressed closely down after it; as it emerges from the external ring, the point of the needle is made to transfix the internal pillar, close to the crest of the pubis, and is then brought out through the scrotum, as far outward as possible. Another needle is then taken, and its point passed under the skin of the scrotum through the same aperture, as that by which the first needle emerged. The invaginating finger is then passed into the canal a second time, behind the needles, carrying the point of the second needle before it, as high as possible behind the outer pillar or Poupart's ligament. The point of the finger is then lifted so as to protrude the external pillar and in this position the needle is made to transfix it. When the point of the needle is seen under the skin, the invaginating finger is withdrawn, and the needle made to emerge through the same aperture in the skin of the groin as that at which the first needle entered, by drawng the skin outwards or as near to the first puncture as may be possible.

The point of the first needle is then cut off, and the needles are locked into each others loops. Then the point of the second needle is cut off, and the needles twisted round each other, care being taken to protect the skin near the punctures by lint and adhesive plaster. A pad of lint and a bandage is then applied firmly. The needles are left in, from a week to a fortnight, according to the symptoms. A good deal of consolidation is the result; the sides of the canal in the track of the ligatures are consolidated, and united to each other in their closely twisted position. A truss should be worn afterwards for six months or longer as the case may require.

The object of the operation is to set up the tendency to contraction which should normally take place in the canal of nuck, and so, to close the aperture. Hoping you will find the above sufficiently plain, and apologizing for my delay, believe me,

Yours most sincerely,

JOHN WOOD.

Dr. F. W. Campbell, Montreal, Canada.

The needles employed, have a angle with a small loop, one of the needles being slightly curved, the other perfectly straight.

Montreal, Aug. 1, 1862.

HOSPITAL REPORT DEPARTMENT.

Montreal General Hospital.

Case of Fibro-plastic tumor on the hand. Amputation of fore-arm. Under the care of Dr. Reddy. Reported by Mr. Herbert Sayer Tew.

Edward Walder, aged 48, a native of Ireland, was admitted into the Montreal General Hospital, on the 27th July, 1862, in order to place himself under treatment for a large tumor which had been growing for some time from the back of his hand.

His family history is good; his countenance has a healthy appearance; good ruddy color, and not the look of a person suffering from malignant disease.

He states that the present affection commenced about eight years ago, in the form of a small red hard swelling about the size of a pea, on the dorsal aspect of the thumb, unattended with pain, except on pressure.

The tumor gradually increasing in size, he was sent by a medical man in Montreal about a year ago to the Montreal General Hospital. At that time the tumor was circular in outline presenting a sharp apex; the surrounding skin was slightly elevated, and seemingly on the side of the tumor a second small elevation was observed, which soon grew to a considerable size.

While in Hospital various plans of treatment were pursued, without diminishing its bulk, and on being explored about half a pint of a brownish-white colored fluid exuded. The wound soon healed, leaving the tumor about the same as on admission.

He now left the hospital, and felt no apprehension till about five months ago, when the tumor began suddenly to increase, and he sought readmission on account of sudden hemmorrhage from the surface of the tumor while working. He called on one of the surgeons of the 47th regiment, who stopped the bleeding. Since last year the tumor has altered much in shape and size. It is about the size of an ordinary cocoa-nut, of an irregular nodulated shape, and having a dusky red mottled color, occupying the dorsal aspect of the hand, with the exception of the ring and little finger; it is quite moveable, soft to the touch, and on the upper and dorsal aspect, there is a slough about the size of an English shilling. When the hemmorrhage took place, he suffered pain, especially when pressed or much moved. There are no glands enlarged in the axilla. A consultation being called, amputation was deemed necessary. Dr. Reddy, assisted by Dr. Fraser and Dr. R. P. Howard, performed the circular operation, about three inches above the carpus; few vessels required ligature. To day, August 11th, the stump is progressing most favorably. There has not been any unfavorable symptoms from the beginning. Dr. Reddy made a microscopical examination of the contents of the tumor before operating, and exhibited drawings of the cells which he discovered. Some were oval, oat shaped, containing a well marked nucleus (dot like); others had nucleoli and appeared more elongated, and several seemed joined one after another; these were described as presenting a pale color.

The tumor was of the soft variety, and when on being divided after removal, had the appearance of encephaloid matter in mottled layers, soft, elastic, broken down, and exuded a thin serous juice.

LONDON CORRESPONDANCE.

No. VIII.

The excitement caused by the great International Exhibition, the entertainment of numerous friends and visitors who have come from a distance, the constant run of festivities, public and private, added to one's ordinary labours both literary and professional, at any time onerous enough, have prevented me resuming my letters for some months back. Indeed so many members of my profession, who are subscribers to the British American Journal, are over here just now, that it really seems as if none of its readers had been left behind in Canada. So many old and familiar faces have turned up since the opening of the exhibition, that it has quite carried me back to the time when I was a joint laborer in the cause of science on the Western side of the Atlantic.

What with the thousands who are daily coming and leaving the metropolis; the curiosity excited by the Japanese; the volunteer reviews; soirees; conversaziones and balls; public laryngoscopic and other exhibitions; dinners in countless numbers; and various other matters too numerous to mention, the ordinary quiet and soberness of London life, is for the present completely revolutionised. I can therefore refer only to some of the more recent and striking events in this great city, those especially that have influenced the medical mind.

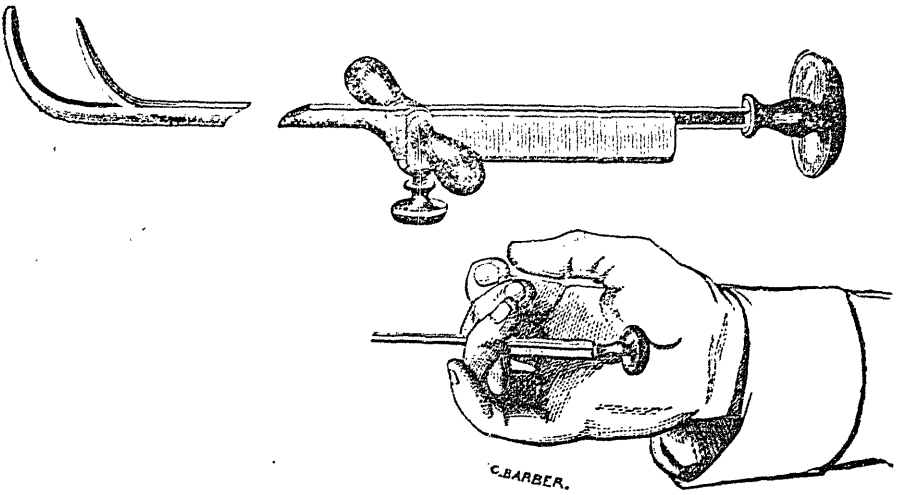
Most of our Hospitals and other Institutions were visited by the medical members of the Japanese embassy, who were also present on several occasions at some of the operations. Now these individuals are distinguished from their brethren by having their heads shaved, which are generally left uncovered; at least I did not see them on any occasion with anything upon their scalps; they always reminded me of patients just convalescent from fever, whom it had been necessary to deprive of their hair during its progress to keep their heads cool. On a fine warm Sunday afternoon, I happened to be at the Zoological Gardens (the Fellows' day) when the Japanese entered, accompanied by their Doctors, and the latter were exposed to the influence of the sun on their uncovered palls. The extraordinary appearance presented by the entire suite, may be imagined, when it produced a regular uproar amongst the lions and tigers, who darted forward against the bars of their cages, as if they wanted to spring at some of their natural enemies. I was also present at King's College Hospital on the 10th May, when the following operations were performed before them by Mr. Fergusson, namely, removal of a nasal polypus, necrosed bone from the tibia, tumour from the pharynx, excision of a knee and a breast, closure of two cleft palates, and removal of a tumor from the neck. It is impossible to describe the eagerness with which all these were watched, and careful notes were taken of every feature of importance, likely to be of use to them in their native country. The presence of the Japanese, necessarily drew general attention to their court in the great Exhibition, which is filled with objects of wonder and curiosity. Amongst other things are multitudes of little figures in Jade or Nephrite, carved into every imaginable shape, in which the ludicrous and grotesque largely predominate.

Amongst the medical men of London no one seemed to appreciate the peculiarities of the members of the Japanese embassy more than the late Mr. Stanley. His sudden demise, in harness we may truly say, created a general gloom. I

saw him but a few minutes before his death, and he looked uncommonly well, was smartly dressed with a light coloured vest on, intending to go to the Exhibition with his wife on leaving the Hospital. He was even more merry and jocular than usual. He was in one of the upper wards examining a patient for his colleagues, as he was consulting surgeon, and had pronounced his opinion, when he suddenly stumbled, but recovered himself; this was repeated, when he fell, and was placed upon a bed in the ward, where he became comatose, and died within an hour and a half. Most of his colleagues, including the veteran Lawrence, were present. Although a very blunt man, he was greatly loved and respected by all his pupils, and by those who had the pleasure of his acquaintance. The writer of this letter was the first who used the laryngoscope in his presence upon a couple of patients of Mr. Wormald's in the wards of the Hospital, and he at once recognised the providential value of the instrument.

This leads me to speak of the Laryngoscope itself, which I briefly described in a former letter (*Brit. Amer. Jour.* for May 1861) now familiar enough to your numerous readers by the translation of Czermak's work for the New Sydenham Society by Dr. Gibb formerly of your city. Professor Czermak was in London for some weeks, and during his stay he shewed his own larynx at soirees, and private parties. He also exhibited photographs of his own larynx which are probably the most curious things of the kind ever seen. To exhibit one's throat after the manner of Czermak, is almost an impossibility, unless autolaryngoscopy is practised assiduously for many months. The professor acknowledges that providence gave him a throat especially adapted for demonstration, for nobody as yet has been able to equal him in this respect. The form of instrument for autolaryngoscopy and demonstration, is represented at page 19 of the English translation.

The *early* treatment of stone in the bladder is becoming much in vogue at



the present time, and the tendency to get rid of it by crushing is coming strongly in favor. The annexed wood-cut is a representation of a small lithotrite used by Mr. Henry Thompson, the size of a No 6 Catheter, made for him by Coxeter.

It is only adapted for very small stones, but the beauty of its contrivance is, that the simple pressure of the palm of the hand is sufficient to crush the stone when within the curved blades of the instrument. No screw is required, and as I have seen him use it, a single crushing has generally proved sufficient to get rid of the stone. It is hardly fair to cut a child for a stone not larger than an apple pip, or a small bean, yet it can be readily got rid of by employing such a lithotrite as that figured. Amongst the out patients of our hospitals, if there are any symptoms in children that lead to the suspicion of calculus, an examination is at once made, and if there is one, and the size permits of it, lithority is immediately resorted to. Although as a rule lithotomy in children is almost invariably successful, it is as well to avoid its performance, unless lithotrity cannot be practised.

In the Lancet of this day are several editorial articles strongly approving of the plan about to be adopted by the College of Physicians of granting a license to practise Surgery, which they have the power to do. This is coming to the one faculty system; I shall refer to it in my next letter.

I may as well mention here that a good deal of uncertainty exists as to what will really be the form of national monument to be erected to the memory of the late Prince Consort. There is a strong disposition to go back to the original idea of a monolith or obelisk of gigantic dimensions, but the fear was entertained that a block of stone sufficiently gigantic could not be obtained in this country. It appears however from a report of a meeting of the Committee in the *Times* of the 8th March last, that single stones of large dimensions are by no means difficult to be obtained. The Ross of Mull Granite company state that they can supply a monolith of red granite larger than any known column in existence. The obelisk in front of the Winter Palace at St. Petersburgh, they say, is the largest one in Europe, measuring 93 feet. They state that they can exceed that by at lest 7 feet in length, and with a corresponding excess in diameter. This stone, said to have been hitherto unnoticed, is reported by their manager, Mr. Marshall, to have been discovered in the Tunmore locality, and what is still more remarkable, to be already quarried on 3 sides. It is described moreover, as lying just at the surface of the ground, with a fine open field in front on which it could be rolled out and "scabbled". It has an even surface, is quiet detached at top and bottom, is perfectly sound, and of a good red colour. It is upwards of 100 feet in length, and will average about twelve feet in diameter. The column at St. Petersburgh, they state, measures 12 feet at the base, and only 4 feet at the top; its height being 93 feet. The difficulties which the committee have to consider, and they are enormous, are first the quarrying of a monolith of the desired dimensions, than of transporting it to its ultimate destination and finally of rearing it. At a rough estimation it would weigh some 600 tons. It remains to be seen what the exercise of engineering skill will accomplish in this matter, if the final choice should be, what we all hope, an obelisk.

The stereoscope is no doubt familiar enough to most of your readers. A new instrument has been invented called the *Neomonascope* to show the album photographic portraits with stereoscopic effect, and forming a small case to carry them in the pocket. It is sold for 3s. by Heath and Beau of Regent Street.

The British Medical Association meet in London next week, I shall give you the particulars of it in my next, and will speak of the late Mr. Wakley. Indeed for the next few months I shall write monthly.

London, 2nd August, 1862.

REVIEW DEPARTMENT.

ART. LXI.—*Transactions of the Obstetrical Society of London, Vol. III. for the year* 1861, *with a list of Officers, Fellows, &c.* London: Longman, Green, Longman & Roberts, 1862, 8vo. pp. 480.

There are few societies in England which are more faithfully carrying out the principles upon which they were founded than the present one. Already three volumes of transactions have been presented to the profession, each one if possible, vieing with its predecessor in richness of obstetrical detail. The volume before us, is much richer than its predecessors in the laboriousness of research which its papers display, and proves the fact that a society organised on such a foundation as that of the present, like a good tree, will bring forth much fruit.

The present volume of transactions contains no less than thirty-nine valuable papers on matters connected with obstetrical science, illustrated by ten engraved plates, some of which are coloured, and six wood cuts, executed in the highest style of art.

In a work like the present it is scarcely possible to do more than enumerate a few among the more prominent papers of merit. With such a view we would especially mention Dr. Tyler Smith's paper on ovariotomy: a paper on fibrous tumours of the uterus treated by surgical means, by J. Baker Brown, F.R.C.S.; a paper on uterine hæmatocele, by Henry Madge, M.D.; On the indication and operation for the induction of premature labour, and for the acceleration of labour, by Robert Barnes, M.D.; On a new pelvimeter, by J. Lumley Earle, M.D., an instrument, which to our mind, seems to answer every purpose and exhibits great ingenuity; On the treatment of cases of abortion in which the placenta and membranes are retained, by Wm. Priestly, M.D.; On inflammation of the breast and milk abscess, with an analysis of seventy-two cases, by T. W. Nunn, F.R.C.S.; Is the ergot of rye when administered to the mother during labour, dangerous or not to the life of the child? by R. Uvedale West, M.D.; On Vaginismus, by J. Marion Sims, M.D.; On cauterization by electric heat in the treatment of certain diseases of women, by R. Ellis, Esq. Such are a few out of the more prominent papers which this truly valuable volume of Transactions offers to our consideration, and as specimens of what might be termed the fugitive literature of obstetrical science, we deem the present and preceding volumes worthy of holding a conspicuous place in any medical library. The society is evidently prospering both in numerical and literary quality, and we heartily wish it the fullest amount of success which its most devoted well-wishers could ascribe to it.

ART. LXII.—*Researches and observations on Pelvic Hæmatocele.* By J. BYRNE, M.D., M.R.C.S.E., Resident Fellow of the New York Academy of Medicine, &c. New York: William Wood. 1862. ppht. pp. 44.

This pamphlet forms the subject of an elaborate paper read before the New York Academy of Medicine, in the month of February last, recently published by order of that body, and supplements certain deficiencies in that paper.

Although apparently known to the ancient physicians, this disease has, until very recently, escaped detection, which fact may be partially due to its rarity, as well as to its liability to be confounded with other pelvic affections, especially that of cellulitis.

We content ourselves with giving the conclusions to which the author has arrived, and which are fully borne out by his observations.

"A tolerably comprehensive investigation into the history, nature, and alleged causes of this affection tend to convince me, *first*, that bloody tumours within the female pelvis are not met with frequently, and should not be confounded with pelvic cellulitis or its consequences. *Second.* That the relative location of the tumour is not an infallible guide in determining as to its intra or subperitoneal character. *Third.* That certain pathological principles and physiological phenomena, inseparable from such enquiries, make it at least very probable that the *causes* which predispose to the two forms of hæmatocele, are not only entirely distinct, but differ from each other as widely as pleurisy from pneumonia; and *fourth*, when inflammatory action precedes the hæmorrhagies, the character and seat of said inflammation determine the location of the effused mass."

The pamphlet embraces and exhausts the whole literature of the subject.

ART. LXIII—1. *The Physician's Visiting List for* 1863. Lindsay & Blakiston, Philadelphia. Dawson Brothers, Montreal.

2. *The Prescription Book.* By A. G. DAVIDSON, Druggist, Place d'Armes, Montreal.

We have to acknowledge the reception of these two useful pocket companions. The first one we have used for many years, and have found it, what it professes to be, a true economiser of time and labour. The second has been only lately issued, and will be found to be a most useful adjuvant, supplying at once, on demand, the paper whereon to write the prescription, the pencil wherewith to write, and the sealed envelope. Our readers are all familiar with the first,—with the second they may not be so,—and we therefore add that the whole affair is comprised within a pocket book of moderate proportions, and not only extremely well but neatly got up, the whole arrangement indicative of great taste. Mr. Davidson has only recently commenced business as a dispensing apothecary and druggist in Montreal, and is in the fair way of realizing his best aspirations.

PERISCOPIC DEPARTMENT.

MEDICINE.

DIPHTHERIA.

In the *Ohio Medical and Surgical Journal* for August, Dr. E. L. Plympton, of Centreville, Ohio, has an article upon diphtheria, from which we make an extract or two, and upon which we propose to base a remark.

Dr. Plympton's experience early led him to the following conclusions:—

1st. "That diphtheria is as much a blood disease as small-pox. 2nd. That it should be treated with such hematic remedies as have a tendency to correct this morbid condition. 3d. That the treatment, to be effective, must be commenced either before or early in the active stage of the disease, and that it is useles to waste much time or trouble in treating the local affection of the throat. Acting upon these conclusions, I have, in every case, placed my principal reliance upon some combination of chlorine, and mainly upon the chlorate of potash, commencing usually with a mild mercurial cathartic, oftener using the hyd. c. creta than any other. To a child five years of age, I give enough of the saturated solution of the chlorate to contain three or four grains, and repeat the dose every three hours during the career of the disease; and to patients older or younger, in relative proportions. When the child is capable of gargling, I have him use one mouthful as a gargle, for the purpose of washing out the loose excretions of the throat, and then immediately swallow the prescribed dose. I have repeatedly pencilled the throat with the nitrate of silver and tincture of iodine without any very satisfactory results."

In regard to removing the exudative membranes our opinions have been previously expressed; and, though we differ in this regard with most authorities, we find support in our friend's opinion. He says:—

"I can see no more philosophy in removing the membranous exudation with the expectation of mitigating or cutting short the disease, than I can in removing the pustules of variola with the expectation of safely terminating that disease. The one is as much an element of systemic disease as the other. If the diphtherial exudation be in the air-passages below the epiglottis, the caustic swab will stand a poor chance of removing it in season to save the patient; if the exudation be above, it will not be much in the way of his recovery."

This opinion is almost exactly what we have expressed on a former occasion.

At the head of all remedial agents in diphtheria, Dr. Plympton places the chlorate of potash, and he says:—

"I not only have faith in it as a *curative* remedy, but as a *prophylactic*."

Bearing upon the subject of its prophylactic powers, we will quote an idea from Dr. S. H. Smith, of New York. In the *American Medical Times*, for June 8th, speaking of the chlorate of potash in *typhoid fever*, he says:—

"I have settled down into the conviction that its greatest value in such cases is as a prophylactic. Given in conjunction with quinine and mild aperients, I have seen it repeatedly stave off attacks of fever during epidemics, even of 'Irish emigrant' or 'ship' fever; the premature laying aside of the medicine being followed by immediate return of the threatening symptons, again to be dispersed by a recurrence to its use."

We are inclined to attribute the prophylactic powers of this combination largely to the quinine, yet we give the opinion of Dr. Smith as it stands. It must be admitted that there are some points of strong resemblance between typhoid fever and diphtheria.

We have used the chlorate of potash in every case of diphtheria that has come

under our observation, and we must say we are not satisfied as to its curative properties. Certain are we, that we have never lost a case in which the chlorate of potash was not liberally used from the beginning. Though it may be a valuable remedy, *it is not capable of saving all cases*, even when aided and supported by other appropriate remedies.

Our readers may remember that in the REPORTER for September 14th we referred to the opinions of Dr. N. E. Jones, of Circleville, Ohio, as published in the *St. Louis Medical and Surgical Journal* for May. He regards belladonna as a valuable remedy in diphtheria, and gives the following as his conclusions:—

"1st. Belladonna given to intoxication arrests membranous exudation.

"2nd. Given early in the febrile stage, cures by resolution.

"3d. Causes softening and detachment of exudation in an unusually short space of time."

Upon this point, in the *St. Louis Medical and Surgical Journal* for July, Dr. E. W. White remarked:—

"Exudations are respectively euplastic, cacoplastic, or aplastic. In the case of croup, the formation may be plastic, highly fibrinous; in scarlatina, almost entirely aplastic, sero-albuminous, and tending to putrefaction. Diphtheria appears to rank between the two, the effusion being either fibrinous, when the attack is acute and sthenic, or fibro-albuminoid; or, indeed, if slow, insidious, and asthenic in its approach, the effusion may be sero-albuminoid. Now, we cannot understand how belladonna can exert any beneficial effect in such diphtheria, where all antiphlogistics or sedatives are injurious. We *need stimulants from the beginning*. If it be true that malignant diphtheria, scarlatina, and croup are blood diseases, a narcotic is certainly not indicated—alteratives are needed. *I think iodide of potassium has probably the highest claim.* It has always been used with benefit in the sloughing, mercurial sore-throat, a condition almost identical with that of diphtheritic ulceration. Mercury would be, for this reason, a bad remedy, especially after the acute stage had passed. Iron and alkalies are the great constitutional means. Diphtheria is a true blood disease, and I would use stimulants to elevate the nervous power, while I would use alteratives and tonics to cure the blood disease. It would appear, therefore, irrational empyricism to administer belladonna '*to intoxication*' in these diseases."

Of belladonna in diphtheria we cannot speak favorably; and, though the chlorate of potash may be a valuable remedy, there are many cases to which it is not adequate to the cure.

Our brother-in-law, Dr. L. V. Axtell, of Jamestown, N. Y., whose experience is quite large in this disease, speaks very highly of *arsenic* in diphtheria. In adults, he would give *Fowler's solution* in ten-drop doses, and repeat every *four* or *six* hours during the disease. He says the proportion of deaths to his whole number of cases has been greatly diminished since he commenced the administration of this remedy. He also believes that the fœtor of the breath has been greatly diminished under this kind of medication. It is proper to observe that he has not neglected ordinary instrumentalities—quinine, iron, chlorate of potash, etc., have been used as heretofore.

Theoretically, we should expect benefit from it. A remedy so powerfully antiseptic, and tonic besides, should be of service in a disease so strongly septic as is diphtheria in its severer forms, as well as in some other difficulties of a similar character.

We have used the remedy in our last ten cases, and we were rapidly acquiring a favorable opinion of it, when we suddenly lost two cases, both in one day. They were, however, terrible cases, septic to the last degree, and it was probably no fault of the medicine that the patients died. In so severe a disease as diphtheria, it is not probable that a specific will be found. Dr. Axtell and his part-

ner have great confidence in arsenic, and we certainly hope much from it. In this locality, a type of the disease has prevailed more putrid in its tendencies and rapidly gangrenous than any we have seen described in all our reading. It has been our good fortune to lose but one in ten. In view of all the circumstances, we think this speaks well for the remedies employed. When we hear of physicians having hundreds of cases, and losing none—using only simple remedies—we know they have not seen the disease at all, or at least not in its severer forms.

Dr. White, of St. Louis, suggests the *iodide of potassium* as probably the most important alterative in diphtheria. We remember having seen the same suggestion before, but do not now call to mind by whom it was made. We have never given this article a trial in this disease, and can say nothing experimentally.—*Medical and Surgical Reporter.*

EPIDEMIC NIGHT-BLINDNESS.

Hemeralopia, almost unknown to civilians, is frequently observed in the army, and assumes in general an epidemic form. Dr. Baizeau carefully watched an epidemic of this description in 1856 at Lyons, among the soldiers of the 58th regiment of infantry, which he had charge of. The disease set in on the 28th of March, and during the month of April a great many cases occurred. The division was moved on the 16th of May to the camp of Sathonay: here nocturnal blindness soon became much more frequent, ceased at the end of the month, but reappeared after a few days. The regiment marched to Marseilles, hemeralopia followed, but exclusively attacked two companies under canvass. At the approach of winter, this inconvenient guest took his departure, but returned in the second fortnight of the new year. In April and May, 1857, Dr. Baizeau again had an opportunity of observing the disease in the army of Paris; after having followed a very irregular course, the epidemic at last yielded in July, 1858, since when but few cases have been noticed among the troops.

Hemeralopia is not in itself a dangerous affection, and seldom endangers vision, but it may entail serious consequences for men to whom the guard of an important post is assigned at night, or who may be required to march or take a part in offensive or defensive operations. General Bazaine, who was appointed Governor of Sebastopol after the capture of that city, has stated that so many men were then affected with night-blindness, that several regiments were so reduced as to be unable to supply the usual guards. Dupont in 1762 reported that the regiment of Picardy was attacked with this malady at Strasburg, and that several sentinels fell into the ditches at night. Accidents of a similar character have been noted during the numberless epidemics observed at various periods in French and foreign armies. Nocturnal blindness is not special to the land forces, but is also met with among marines and sailors. In September, 1847, the Rev. Mr. Coquerel had an opportunity of observing an epidemic of this description on board the *Belle-Poule* frigate, in the latitude of Madagascar, one hundred perfectly healthy sailors being affected in succession. It is not unimportant to remark that all those who have noticed night-blindness, whether at sea or on shore, Bamfield, Poulain, Biard, Valette, Bégin, &c., agree in stating that officers and non-commissioned officers escape the disease. Dr. Baizeau, out of upwards of three hundred cases, met with it only twice in officers; corporals, drummers, musicians, and non-combatant rank and file enjoy this immunity. The author shows that of all causes, sudden changes of temperature are the most powerful in producing night-blindness. Thus, soldiers and sailors, exposed during night-duty to a cold atmosphere, after having endured in the day the heat of the sun, are much more frequently affected than from re-

verberation of light, or any other protracted cause of ocular irritation. Thus when an epidemic prevails, Dr. Baizeau advises that the men should be exercised in the shade, and that the hooded overcoat should continue in use at night for the sentries. For the same purpose M. Fleury proposes for the use of sailors in hot countries, a broad-brimmed straw hat with a green shade beneath the brim; also that tents be erected on deck at night as a protection against the damp.

As to the nature of hemeralopia, Dr. Baizeau conceives the disease to be a neurosis of the retina, occasionally connected with a congestive condition of the eye and brain, but of so mild a character in general, that it seldom lasts more than four days or a week at most. It is because the true nature of these spontaneous cures has been overlooked, that so many authors since Hippocrates have set too high a value on certain remedies of at least very questionable efficacy. Some patients, however, may remain for months blind at night, and in such cases vision is endangered, and an eventual cure becomes doubtful. The disease must not therefore be abandoned to the unaided efforts of nature, and medical art must interfere. Exposure to the sun in the day time, to cold and damp at night, should be carefully guarded against. The men, when attacked by the disease, ought to be exempted from all duty, a precaution which, in nine cases out of ten, brings about a cure; but if the irritation of the retina is intense, repose in a darkened room is desirable, and if necessary, the azure tinted plane-glass spectacles, recommended by M. Sichel, should be used. The causes of hemeralopia being thus warded off, and complications if any exist, being removed, the disease of the retina remains to be contended with. Amongst the many measures enumerated by authors as appropriate to the purpose, Dr. Baizeau prefers steaming with hot water several times a day, and for a quarter of an hour at a time: this is the local treatment which the author has invariably found most effective. Subsequently to, or concomitantly with the fumigations, cod-liver oil in a six or eight drachm dose in the morning on an empty stomach often produced the most satisfactory results. In some instances this method of treatment effected a cure in twenty-four hours; in others, two or three days were required, and the medication was equally successful in inveterate as in the most recent cases. Cod-liver oil must not, however, be viewed as an infallible remedy, applicable to all varieties of night-blindness. We have stated above that the disease is occasionally connected with cerebro-ocular congestion; when this occurs, another indication requires to be met to complete the cure and obviate relapse. This object is attained by mild counter-irritation, aperients, stimulating foot-baths, and if necessary, by dry cupping, or superficial scarification.—*Journal de Médecine de Chirurgie.*

TREATMENT OF NEURALGIA.

The treatment of neuralgia must be considered, says Dr. Sieveking, under two main points of view: mitigating the pain in the paroxysm, and meeting the morbid condition upon which the pain depends. Amongst the various remedies proposed to meet the first indication, opium and its preparations, applied locally or given by the mouth, occupy the first rank. But they rarely, if ever, suffice to effect a cure without the aid of other agents of an alterative or roborant kind. Opium or morphia may be laid on the unbroken surface in conjunction with hot fomentations or poultices. If used endermically, the anodyne powder is sprinkled over the cutis, after the epidermis has been removed; or a solution of morphia may be injected into the cellular tissue by the aid of a small syringe. The application should, of course, always be made at the seat of the pain, or as near it as possible. This holds good equally of veratria, aco-

nite, chloroform or belladonna, of hot fomentations, turpentine stupes and counter-irritants.

The external application of tincture of opium with moist heat is often of great use in the milder forms of neuralgia. It is important that the medical man should himself apply the fomentations in the first instance, and take as little for granted in the sick room as possible. The endermic application of morphia can not be used where the disease is very paroxysmal, or the attacks of pain very brief, but in protracted cases, for instance in gastrodynia, it is often of great value. Blister a space of the size of a five-shilling piece, remove the raised epidermis and sprinkle over the surface a powder containing one grain of morphia to four grains of white sugar; then apply a simple dressing. Three or four powders may be applied in this way on successive mornings, or at still shorter intervals. There is generally a little smarting pain at the time of the application, but soon after relief generally ensues. In the anomalous pains of the back accompanying uterine and ovarian derangement, the endermic application of morphia to the lumbar or sacral regions is often of decided service.—*London Lancet.*

MATERIA MEDICA.

ANARCOTINE.

In "The Indian Annals of Medicine," for September, 1861, there is an elaborate and able report addressed by Dr. A. Garden, of Ghazepore, to the Deputy Inspector-General of Hospitals, on the therapeutic uses of anarcotine, tabulating in various forms the results of its employment in nearly 700 cases of intermittent fevers. Turning to our systems and dispensaries, we find it briefly noticed that this substance has been employed as an antiperiodic by Dr. Roots and Dr. O'Shaughnessy. This brief notice has, it appears, been wholly overlooked or neglected in this country; and yet, as we shall show, anarcotine possesses therapeutic properties well worthy of the attention of British practitioners.

It is generally known, that one of the crystalline constituents of opium received from chemists the name of "narcotine," under an erroneous impression that it was the narcotic principle of that drug. So far from this being the case, it has not the slightest claim to that title; and, consequently, it is very properly proposed to prefix the privative letter *a* to the name, and henceforth designate it as *anarcotine.*

Referring to Sir W. O'Shaughnessy's original statement, we find him saying:—

"I have now employed the narcotine in sixteen cases of remittent fever, and such is my opinion of the efficacy of the remedy, that in instances of fever, intermittent and remittent, in ordinary healthy subjects, and in whom there is no complication of severe organic disease, I give it with the full expectation of arresting the next periodic return of the fever. I have seen the result follow in ten of the cases of the fever alluded to. I consider narcotine a more powerful antiperiodic than quinine. The remedy does not act silently. I have observed a degree of general heat follow its use in the first instance, and subsequently perspiration, so that it appears to excite in the system a salutary and powerful counteraction, as to stop the morbid concentration that issues in fever. I have not observed narcotine to lead to organic disturbance in the cases in which I have used it. In short, even from my scanty experience, I consider the remedy an invaluable one."

To his own testimony Sir William added the experience of several practitioners, who speak in the highest terms of its value as an antiperiodic, especially appli-

cable—1st, in quotidian fevers; 2nd, in cases complicated with visceral enlargements of the liver, spleen, &c.—or local inflammations, as of the bowels—or cerebral congestion; 3rd, in cases of intermittents supervening upon surgical operations; 4th, after failure of quinine, or both quinine and arsenic.

Anarcotine is a white, inodorous substance, crystallizing in prisms, insipid to the taste, insoluble in cold and sparingly soluble in boiling water, more soluble in alcohol and ether, insoluble in alkaline solutions. It forms salts with the mineral acids which have a very bitter taste, similar to that of quinine. The sulphate and hydrochlorate are the most convenient for internal use. Anarcotine is obtained from the residue of opium left after separation of the morphia. Hence it ought to be a very economical medicine.

Dr. Garden's investigations, as recorded in the report alluded to, were directed to the therapeutic value and peculiarities and the commercial advantages of the use of anarcotine, and the conclusions he establishes are as follows:—

We have in anarcotine a remedy which fails in only 3·6 per cent. of all cases treated by it alone; and, without regard to the previous duration of the disease, and taken both quotidian and tertian agues, it arrests the fever on the whole average before the recurrence of a third paroxysm after the commencement of the remedy.

In small doses anarcotine acts as a tonic, increasing appetite and improving the tone of the system generally. For this purpose, from half a grain to a grain of the sulphate, combined with a slight excess of sulphuric acid, is a sufficient dose.

As an antiperiodic, a grain and a half to three grains or more, even to the extent of six grains, may be given at suitable intervals. Its most appreciable effect on the system is, that it increases the heart's action, raising the pulsations from ten to twenty beats per minute beyond the ordinary amount, and renders the pulse somewhat fuller.

In larger doses (five to fifteen grains) it produces increased heat of surface and diaphoresis, and sometimes disagreeable symptoms—nausea, giddiness, and vomiting. These, however, disappear on lessening the dose, in most cases. The author remarks, "In several cases I have obtained marked benefit by combining tincture of opium with the sulphate of anarcotine." "The only objection to the medicine is its tendency to produce constipation;" hence, before and during its administration, purges are necessary.

In reference to the relative economy of anarcotine and quinine, Dr. Garden's tables are full and conclusive. The average quantity of sulphate of anarcotine required to arrest intermittent fevers was found to be twenty grains for quotidians, and something less than forty grains for tertians; whilst about sixteen grains were demanded during convalescence from both kinds for the re-establishment of health. If it fails in a small per-centage of cases, this is not more than experience with quinine, to which it is nearly if not quite equal in therapeutic value as an antiperiodic.—*Lancet.*

AN INDIAN REMEDY FOR VARIOLA.

This disease is the special plague of the Indians. When it breaks out among them it sweeps over their encamping grounds like the fire of the prairies, destroying all of human kind in its path. On one occasion, among the Indians near the City of Halifax, Nova Scotia, whole families were carried off by its ravages. After a time, however, the pestilence was stayed, and it was asserted that an old, weird Indian woman possessed a remedy, which would speedily and effectually cure any who were attacked with it, and that, coming into the camp, she had administered the preparation with infallible effect in every case. In the case of an individual suspected to be under the influence of the disease, but

with no distinct eruption, a large wineglassful of the infusion of the root of the "*Sarracinia purpurea*," or pitcher plant, is to be taken. This brings out the eruption. A second or third dose, given at intervals of four or six hours, causes the pustules to subside, apparently losing their vitality. The patient feels better at once, and, to use the graphic expression of the "Micmac," knows there is a great change within him at once." If the patient be already covered with the eruption, in the early stage, a dose or two will dissipate the pustules, and subdue the febrile symptoms. The urine, from being scanty and high colored, becomes pale and abundant; while, from the first dose, the feelings of the patient assure him that the "medicine is killing the disease." In three or four days the prominent symptoms of constitutional disturbance subside, and no marks of the eruption are left upon the skin. In the camps, when the remedy is used, a weak infusion of the plant is taken as a preventive, "to keep the antidote in the blood." So important is the knowledge of this plant thus obtained considered to be, that its anti-varioloid properties are to be tested in England. And it is most assuredly worthy the attention of the profession in this country. Vaccination is not infallibly certain as a preventive, and we have, as yet, no remedy which will cut short the ravages of the disease, or prevent it from leaving indelible marks upon all who are attacked with it.

We quote the foregoing from our esteemed contemporary the *Medical and Surgical Reporter*, but that the subject has received attention in England, the following extract from a local paper will demonstrate. But we must confess, that however much the Sarracinia, a plant which grows abundantly on the Island of Montreal, may be vaunted as a remedy in that loathsome disease, we entertain the gravest doubts of its efficacy. However it is well worthy of a trial, and we submit to our readers as much as is now known on the subject. A medical journal reports an interesting discussion at the Epidemiological Society of London, upon a paper, sent from Nova Scotia, by Mr. Miles, Surgeon in the Artillery. Capt. Hardy, of the Royal Artillery, an accomplished and intelligent officer, who has been for years among the Indians, says that "the old squaw's remedy had long been known to them as an infallible cure for small pox," and that "the Indians believe it to be successful in every case." From the information gathered from the Indians, the following observations have been carefully sifted:—

1. In the case of an individual suspected to be under the influence of small pox, but with no distinct eruption upon him, a large wineglassful of an infusion of the root of the plant "Sarracinia purpurea," or pitcher plant (several specimens of which, including the root, were exhibited on the table,) is to be taken. The effect of this dose is to bring out the eruption. After a second or third dose, given at intervals of from four to six hours, the pustules subside, apparently losing their vitality. The patient feels better at the end of each dose, and, in the graphic expression of the "Micmac," "knows there is a great change within him at once."

2. In a subject already covered with the eruption of small pox in the early stage, a dose or two will dissipate the pustules, and subdue the febrile symptoms. Under the influence of the remedy, in three or four days the prominent symptoms of the constitutional disturbance subside, although, as a precautionary measure, the sick person is kept in camp until the ninth day. No marks of the eruption (as regards pitting, &c.,) have been left in cases examined, if treated by the remedy.

3. With regard to the medicine acting (as is believed by the Indians) in the way of a preventive, in those exposed to infection, it is curious to note, that in the camps where the remedy has been used, the people keep a weak infusion of the plant prepared, and take a dose occasionally during the day, so as to secure the antidote in the blood."

THE

British American Journal.

MONTREAL, AUGUST, 1862.

THE MORTALITY OF MONTREAL.

The city of Montreal, situated at no very remote distance from what may be considered the central point of the most populous district of Lower Canada, may have its averages, in whatever aspect taken, assumed as those of the Lower Province; Toronto bearing a like position as respects the Upper Province or Upper Canada. Hence average results obtained from the statistics of these cities may, with the limitation mentioned, be assumed as those of the Provinces respectively.

Every person arriving in Montreal, and residing in it a few years, must have been, when he has perused the weekly return of interments in the two cemeteries, astonished at our enormous infantile mortality. This is a fact so patent, and so long and well recognized, that it has for years been among the medical fraternity an object of earnest and anxious thought. The fact, that nearly 64.86 per cent. of all the children born, have died before they attained the age of five years, and that of this proportion 34.56 per cent. succumbed before they had witnessed the first twelve months of their existence, were facts pointed out by the writer in the *B. A. Journal* for October 1846, and since sustained by Dr. Fenwick's more recent researches into the same subject, published more lately in this Journal. It is a strange fact, that although sixteen years have passed away since this enormous infantile mortality was submitted to the public and its authorities, not the least notice has been taken of it by any one until very recently, when we observe that the City Council of this city has made a slight move in advance, by the demand for a commission to enquire into the causes of the mortality, and to devise appropriate means for remedying it; and we trust that the move now made will not be abandoned "until some more fitting occasion."

If it were not for the fact that the great infantile mortality, here observed, in-

fluences largely "the average duration of life," and consequently the unhealthiness or the salubrity of the town in a hygienic point of view, little might be thought about it; for we have little hesitation in stating it as our conviction, that after the age of five years has been attained, the ratio of mortality among survivors is actually less than in many of the most favoured places in Great Britain; but unfortunately that infantile mortality must be recognised in such a calculation, and we accordingly find it seriously affecting what has been termed "the average duration of life for the city." From the observations of the year alluded to we have calculated it for this city at 18.43 years, while that of New York fluctuates between 19.69 and 26.15 years; that of all England being 23.46 years; of London 27.00 years, and of Liverpool 20.00 years. Now hence follows a most serious consideration: are the results flowing from the figures apparent or real, and if real are they susceptible of amelioration.

That this diminished average duration of life is the sole result of the disproportionate infant mortality there cannot exist the least doubt, and we question very much indeed whether any other city can furnish a similar ratio; and now arises the important question, to what causes are we to attribute such an enormous fatality among our infants. Without entering into all we may be permitted to specify a few of these causes, and among these there is not one operative to a larger extent than the imperfect drainage of the city; and Dr. Fenwick's statistics, as well as our own, published many years ago, bear this statement out to the fullest extent. It will have been observed that it is in those wards which are the worst drained that the highest mortality has taken place, and assuredly not until the Craig Street tunnel is made to direct its current downwards with that of the river, can any marked amelioration in this respect be reasonably anticipated. Another potential cause will be found in the overcrowded dwellings of the lower orders, in which, during the summer months especially, may be witnessed a great amount of personal uncleanliness reacted upon by the extreme heats then prevalent. Superadded to these potential causes, we may enumerate the excessive irritability of the mucous intestinal surface, engendered as well by the extreme temperature of the air as by the employment of an injudicious diet. These we apprehend to be the three most influential causes, although there are unquestionably others of equal magnitude more immediately connected with improper and injudicious dieting, paving the way to acescency of the *primæ viæ* with all its concomitants of diarrhea, cholera, &c., &c.

We have therefore to look for the causes of the excessive infantile mortality among ourselves; and if among ourselves we can perceive nothing in the affair insurmountable, at least to this extent, that measures guided and controlled by proper authority, should not be competent of achieving. We are glad to perceive that our City Council has moved in this matter—*Mieux tard que jamais*—thanks to Dr. Fenwick's valuable papers on the subject; but once that the attempt is made to clean the Augean stable, with preservation of life in view, we trust that the expurgatory efforts will not relax, until a largely diminished infantile mortality proclaims itself, in letters of gold, as its reward.

MEDICAL CORONERSHIPS.

Of the peculiar fitness of medical men for the office of Coroner, one of the most important constituencies in England, that of Middlesex, has twice recorded its opinion, in the first place by the election of the late Mr. Wakley, and recently by the election of Dr. Lankester as his successor. As a powerful argument in favor of the selection of medical men to such offices we quote the following from a recent number of the Lancet:

"The contest and the result have proved beyond dispute the truth of our assertion that the freeholders of Middlesex were deeply convinced that, if the office of coroner were to be maintained in usefulness and authority, it must be held by a medical man. For more than twenty years numerous freeholders had daily witnessed how by the application of medical science the causes of obscure deaths were cleared up, how unjust suspicions were dispelled, and how subtle crime had been detected. The career of Mr. Wakley was one long and continuous demonstration of the truth of the great principle upon which he first challenged the votes of the electors. They first put their trust in the man, swayed by the ardour of his convictions, and by the impetuous eloquence with which he set them forth. They afterwards learned to cherish those convictions as their own, by the daily observation of the admirable efficiency of their medical coroner. It would have been strange indeed, if, with this signal proof of the justness of the selection they had made in the person of Mr. Wakley, the freeholders of Middlesex should not have strenuously supported the medical candidate in the contest to fill up the vacancy he had left. The issue of this contest offers also a most gratifying proof of the legitimate influence which the medical profession had acquired over public opinion. Dr. Lankester fairly acknowledges that his success is greatly to be ascribed to the active and liberal manner in which he has been supported by his brethren. It may be truly said, that almost every medical practitioner has had, and most, we believe, have used, some opportunity of advocating the cause of the medical candidate; by conversation, by discussion, by canvassing, the medical practitioners of the county have largely contributed to the formation of public opinion. There is not one amongst us who could not cite examples of justice miscarrying, of crime being encouraged, of the cause of death being left in obscurity—all for want of medical knowledge on the part of the coroner. A deep conviction exists amongst the public, that in the due administration of the coroner's court lies the most effectual protection of life against criminal machinations, and the best security for the just and humane government of our asylums, work-houses, and other public institutions."

In commenting upon this subject the American Medical Times makes the following observations:

"We have endeavored to awaken the attention of the profession in this country to the importance of securing the election of a qualified medical man to the office of Coroner. As yet, however, little regard is paid by the profession to the claims which this office has upon it, and in consequence it is generally filled by some political aspirant, totally unqualified to discharge its duties. There is a prevailing impression in the community, that a Coroner must be a doctor, perhaps, because he deals with the dead, and therefore for the time being the incumbent often prefixes to his name the title, M.D. If the profession would take advantage of this fact, and manifest proper interest in the election of competent medical men to this office, they could readily accomplish their object. If, however, we attempt to place medical men in this office we must enter the arena of party strife, and secure our ends by those measures which are legitimate in political contests. Medical candidates should be put forward who will command the respect and

support of community, and they should be sustained by a united profession. If this is done there is not a community in this country which could not elect a qualified medical Coroner. In the recent contest which resulted in the election of Dr. LANKESTER to the Coronership of Middlesex, the medical men of the district unitedly gave him their assistance. We find among his active supporters in the canvass, SIR JAMES CLARK, SIR CHARLES LOCOCK, DR. C. J. B. WILLIAMS, M. PAGET, and many other medical men of the highest respectability: They succeeded, and the result of placing so competent a person in this position will be, aside from the interests of justice, that the office of Coroner will become daily more respectable, and eventually only qualified medical men will be nominated for the place."

It is not now the first time that we have written in favour of the appointment of Medical men as Coroners, in the Lower Province. In Upper Canada such appointments appear to be acted upon by the Government as the rule, but in the Lower Province with trifling exceptions, the government is apparently satisfied with the action of captains of Militia, as adjuvants to the duly appointed Coroners, only three or four of whom act with independent jurisdiction. It will scarcely be credited that in a city like Montreal, with 100,000 inhabitants, there is only one coroner, while every small city in the Upper Province has three or four; and the absurdity is still further enhanced by the fact, that the coroner for the city is also that for the District of Montreal, with four subordinates, independently of the captains of Militia, some of whom are blessed with a most imperfect education. Why is the system adopted in Upper Canada not pursued in Lower Cananada? Not that it should be carried out to the same ridiculous length, but that its principle should be at least adopted. Our space is too limited in this number to enter fully into the subject, but we purpose to devote some space to the elucidation of it in a succeeding issue.

ACTION FOR SLANDER—DR. WILSON *vs.* S. T. CASEY.

The causes of action for slander against physicians are so frequent, yet so rarely punished, that it is very refreshing to find one amongst us bold enough to step out of the ranks of long suffering and vindicate his reputation. Who is there among us who could not repeat Dr. Wilson's tale. In fact if there is an individual against whom the shafts of envy, hatred, and all uncharitableness are poured forth, it is the physician who, in his daily walks, is continually endeavoring to do good, but whose good efforts, unless positively seen, are by even many of the better class certain to be misconstrued. If we mistake not, this trial is the first of its kind in Canada, we hope it will be the last, with one exception, whose antecedents have already appeared in these columns. The case of Dr. Wilson will appear from what follows, which we copy from the Belleville *Intelligencer* without going into the minutiæ of the trial, which we conceive to be unnecessary.

DR. WILSON *vs.* SAM'L T. CASEY—This was an action of slander.—Dr. Benjamin S. Wilson of Roslin, sued the defendant, who lives in Thurlow, on account of certain slanderous statements which, it was alleged, said defendant had put in circulation. The grounds of the complaint are simply these:—It appears that Mr. Casey had stated that the doctor had killed an uncle of his, by giving him medicine too strong for his constitution, and intimated to one of the witnesses

that he had caused the death of several parties by mal-practice. The doctor immediately on hearing these rumors, sent word to Mr. Casey by his son, that if he persisted in circulating the slanders, he (Dr. Wilson) would prosecute him. Notwithstanding which notice, the defendant continued to repeat the slanders for nine months previous to the action being entered, showing evidently a design to injure the doctor in his practice. In opening the case Mr. O'Hare stated that his client did not wish to prosecute for vindictive damages: but merely to sustain his position before the public as a medical man. On the Saturday previous to the trial, the doctor offered to let the matter drop, if the defendant would only pay the costs of the action, taking that as an acknowledgement that he was in error; and again, after the evidence was taken, Mr. O'Hare, on behalf of his client, offered to drop the case even then if the defendant would pay the costs; both these offers were refused. The witnesses agreed in stating that had they been strangers to Dr. Wilson, they would have been cautious in employing him after what Mr. Casey had said, but knowing him as they did, the stories had no effect on their minds, and they would still continue to employ him. No witnesses were called for the defence; the case was clearly proven. M. Wallbridge addressed the jury in his usual clear and eloquent manner, dwelling forcibly on the fact that the doctor had not shown that he had suffered any damage to his practice from the circulation of these stories. His Lordship in charging the jury, said that it was not necessary for a medical man to prove that he had sustained damage. He considered that the doctor had been dragged into court against his will, and had taken a very prudent and judicious course, having notified the defendant by his own son to desist from circulating the slanders. The jury brought in a verdict for the plaintiff, and $200 damages.—O'Hare for Pltff; Wallbridge for Debt.

[Dr. Wilson informs us, that as he would have been as well satisfied with a verdict carrying costs, as with the $200 damages, it is his intention to devote the remainder, after paying expenses, to some charitable purpose.]

MEDICAL SOCIETY OF LONDON

The Subjects for the Fothergillian Gold Medals offered for competition by this Society are—

For March, 1863: "The Morbid Anatomy of the Human Lung."
For March, 1864: "Ovarian Diseases and their Treatment."

Candidates for these Medals are informed that practical and original facts and illustrations will be considered as especial merits in all Essays sent in for competition; that the Essays must be written in the English or Latin languages, copied in a fair and legible hand, and delivered at the Society's Rooms, 32, George-street, Hanover square, on or before the 1st of December preceding the award, with a sealed packet containing the author's name, and having on the outside a motto or device corresponding to a motto or device on the Essay; that any Essay in the author's handwriting, or with his name affixed, or which may in any way discover him, will be excluded from competition; and that the successful Essay will become the property of the society.

The learned of all countries are invited to compete.

32A, George-st., Hanover-sq., W. GEORGE LAWSON, GEORGE D. GIBB, M.D., } Hon. Secs.

We give publication to the foregoing announcement with much pleasure, under the full hope that some Canadian will enter into competition for the prizes.

THE MONTREAL SCHOOL OF MEDICINE AND SURGERY.

"At a meeting, held about the commencement of the present month, of the members of this School, the following gentlemen were elected officers.—President, J. G. Bibaud, M.D; Secretary & Treasurer, H. Peltier, M.D.

EDITORIAL SUMMARY.

Adulteration of Drugs.—The Boston Medical Journal fears as a consequence of the heavy taxation to which the United States will shortly be subjected, the adulteration of drugs to a large extent, and states that "some less scrupulous will not hesitate to gain by fraud what may be lost by misfortune." Of the various articles submitted to adulteration, that of drugs is the most pernicious and most mischievous in effects. As medicines are prescribed for the sake of the indications they are intended to fulfil, so in proportion to the amount of adulteration will the intention of the physician be frustrated, and life become thus imperilled. No tree is too high whereon to hang the adulterater of medicines, as the act by which he gains a few additional shillings jeopardizes the life of a fellow-being.

Mutual release of Army Surgeons of the Northern and Southern Armies.—When the confederate army entered Winchester, the Union Hotel Hospital with its surgeons and assistants (eight), its attendants, nurses and inmates, all fell into the hands of General Jackson as prisoners of war. They were immediately released upon their parole, directed to report themselves to the Secretary of War at Washington, with the request that a like number of medical officers of the confederate army should be released on the same terms, and to endeavour to have this principle established "the unconditional release of all medical officers taken prisoners of war hereafter."

This generous act on the part of the confederate general was promptly met by the Secretary of War in Washington, and we have now to record one of the most pleasant features of this most deplorable war, that the medical officers of either army are since unconditionally released when taken prisoners, and to use the language of the *Medical and Surgical Reporter*, "it is an important step towards the recognition of the surgeon upon the battle field, not as a partizan or as a belligerent, but as an angel of mercy commissioned to meliorate the woes of humanity.

Cystorrhea vs. *Matrimony.*—A correspondent of the *Nashville Journal of Medicine and Surgery*, in the May number of that Journal, says: that for two years he was troubled with *Cystitis*. Several "eminent physicians" were consulted, and a variety of treatment brought to bear upon the case. He was advised not to marry, but after being treated ineffectually for two years, he disregarded the advice in this particular. He says: In less than three weeks after I was married, the disease was entirely well, and I have had but very few slight symptoms of the affection since (now about a year). It seemed to reduce all excitement and produced an equilibrium in the system that acted like a charm.

The Editor of the *Medical and Surgical Reporter* asks this pertinent question "should a married man be unfortunately afflicted with *Cystitis*, what is the remedy? Must he marry again?" The cure in this case must have been more pleasant than the injections of twenty grains solution of nitrate of silver to which the patient had been subjected.

Influence of the Mother's mind upon the fœtus in Utero.—Dr. Davis has a paper on this subject in the *Nashville Medical Journal* for May. Dr. Davis is

a firm believer in the development of abnormalities and inhumanities in utero through the influence of the mother's mind. He narrates a case known to him, in which a woman had been during her pregnancy frequently frightened by a horse. Labor came on in due time, "and the object of her labor was expelled lifeless." Dr. Davis thus describes it:—"To the astonishment of the husband and all the attendants it proved to be, instead of a child, something like the shape of a horse. The head, ears, nose, neck, body, feet and legs were all as much like a horse as if it had been sired and foaled by that species of animal."

The second case came under his immediate observation. The lady, during her pregnancy, had taken a great fancy to a monkey, and miscarried, at what period of her pregnancy we are not informed. Dr. Davis thus describes the expelled contents of the uterus: From its neck it had the appearance of a well-formed four months male fœtus, while its head, mouth, nose and ears resembled those of a monkey. Its left eye had no lids, but all the ball and membranes seemed to be as blue as indigo, all of which was covered by a thin transparent membrane. The right eye was not discernible."—*Philadelphia Medical Reporter.*

We think these cases fully matched by the following still more remarkable one which has been fully verified, and in truth became afterwards the subject of an artist's pencil. A Chelsea pensioner, *both of whose legs had been shot off* at the fight at Trafalgar, under our immortal Nelson, determined upon perpetrating matrimony, and after narrating his

"Most disastrous chances
Of moving accidents by flood and field," &c.

to which his

"Desdemona did most seriously incline.'

finally consummated the deed upon which his heart was set. In due time the pledge of their mutual affection made its appearance, but strange to tell, it was born with *two wooden stumps* resembling those of its paternal progenitor to the minutest particular.—*Ed. B. A. Journal.*

A few Physiologieal Facts.—A full sized man has in his vascular apparatus at least fifty pounds of blood. The heart contracts seventy-five times per minute with sufficient force to propel its contents through the aorta into the minutest capillaries. Assuming that there are five pounds of fluid in the effluent currents, this weight will be lifted forty-five hundred times in a single hour by the involuntary pulsations of the heart. Or, if we suppose the muscular exertion thus equally diffused over a period of sixty minutes to be concentrated in one effort, more than 20,000 pounds would be lifted by the heart, and hurried to all parts of the frame.—*Medical and Surgical Reporter, from Dr. Woodward's annual address.*

Medical Missionary Society of China.—The twenty-second annual meeting of this society was held at Canton on the 17th January, 1861. The hospital report furnished the number of 17.631 as treated during the preceding twelve months. 206 in-patients were admitted, and more than 250 surgical operations were performed. We glean from this that there must be a very large number of permanent residents of the hospital, who in other places would be called "incurable" and treated as such. The whole report however is a most favourable one in every respect.

Three cases of absence of the Uterus in one Family.—In the *American Medical Monthly* for June, Dr. R. Nelson, of New York, gives an account of a family of five sisters, in three of whom the uterine organ was entirely wanting. Of course, they had never menstruated, neither had any of them suffered from abdominal tumours. Two of the three had been twice married—had strong sex-

ual desires and presented no obstacle to the consummation of sexual intercourse. The cases are worthy of record, as presenting an unique family peculiarity.—*Medical and Surgical Reporter.*

Medical Students in Dublin.—Their number is stated this session to be, in attendance at the several schools, 806.

Lallemand.—This distinguished physician, so well known to the profession, has been appointed Chief Physician of the French army now operating in Mexico.

Sound.—The greatest distance to which sound has been carried in the air is 345 miles. This was the explosion of the volcano at St. Vincent which was heard at Demarara. It is said that the sound of the cannon at the battle of Bull's Run was heard at a distance of 125 miles.

Decrease in the number of Medical Students.—In the session of 1860-61, the number of entries at the Faculty of Paris was 1196; in the present session it is only 1131, the falling off being 65. A proportionate diminution is observed in the greater number of the Provincial Schools.

American Pharmaceutical Association.—This association meets at Philadelphia on the fourth Wednesday in August. We feel persuaded that our own pharmacists would be gladly welcomed there.

Saltpetre.—Large quantities in a crude state have been found lately in south-west Virginia. It is said to be abundant also in Texas.

A Diploma for sale.—A New York daily paper has the following advertisement: "A physician or his widow having a New York Medical Diploma, for which they have no use, can dispose of the same immediately, by addressing "Cash."

United States Pharmacopœia.—Simultaneously with the revision of the same work in Great Britain, that of the United States is undergoing the same process.

Hypertrophied Head.—At the London Pathological Society, a head was lately exhibited weighing 46½ ounces. It was 15½ inches in circumference and 6 inches in length. The patient had laboured under acute rheumatism.

Medical Schools.—The regular medical schools in Cincinnati has each about 60 students. At the University of Vermont there were 80 in attendance last session.

BIRTHS, MARRIAGES AND DEATHS.

BIRTHS.

On the 15th instant, at Kelly's Hill, Township of Hamilton, the wife of P. G. Fergus, M. D., of a son.

At Sherbrooke, C. E., on the 22d inst., the wife of James B. Johnston, M.D., of a son.

MARRIAGES.

At Newboro', on the 15th inst., by the Rev. Christopher Denroche, William Sumner, M. D., of Southampton, to Catherine Ann, only daughter of the late John Scott, Esq.

At the church in Queen street, Kingston, C. W., on the 22nd inst., by the Rev. J. Elwell, Neil Dunlop, M. D., of Sydenham, to Mary, only daughter of the late Rev. A. H. Burwell, of Kingston.

At the residence of H. H. Simmons, Esq., Union street, Watertown, N. Y., on Wednesday, July 23rd, by the Rev. W. A. Nichols, Samuel McDonald, M. D., of Culloden, C. W., (formerly of Niagara Falls, N. Y), to Mira E. Simmons, of Watertown, N. Y.

DEATHS.

At St. Johns, C. E., on the 8th August, Julia Sophia, aged sixteen years, third daughter of Doctor Wight.

ABSTRACT OF METEOROLOGICAL OBSERVATIONS AT *MONTREAL* IN JULY, 1862.

By Archibald Hall, M.D.

Day.	DAILY MEANS OF THE: Barometer corrected and red'd to F. 32°	Temp'ture of the Air.	Dew Point.	Relative Humidity.	Ozone.	CLOUDS: Amount.	CLOUDS: General description	THERMOMETER: Maximum read at 9, P.M.	THERMOMETER: Minimum read at 7, A.M.	WIND: Its general Direction and Mean Force from 0 Calm to 10 Violent Hurricane.	RAIN AND SNOW: Rain in 24 h'rs read at 10, A.M.	RAIN AND SNOW: Snow in 24 h'rs read at 10 A.M.	RAIN AND SNOW: Total rain and melted snow.	GENERAL OBSERVATIONS.
	Inc's.	°	°	0.100	0.10	0.10		°	°		0.10	Inch.	Inch.	
1	29.658	63.2	48.2	.60	5.5	0.3	Strat.	70.8	51.0	N.N.W.	1.0	0.12	.....	0.12	Faint Aur. light.
2	29.883	68.1	50.9	.58	6.5	7.6	Cu. St.	76.2	56.8	S.W.	1.6	.....	.....	.....	
3	30.073	67.2	53.8	.64	5.5	4.6	Cu. St.	78.8	60.0	N.N.E.	0.6	.....	.....	.....	Thunderstorm Rainbow.
4	30.130	73.9	56.1	.57	3.5	7.0	Cu. St.	88.3	52.9	S.W.	3.0	0.10	.....	0.10	Thunderstorm at midnight.
5	29.931	78.8	62.0	.60	2.5	4.6	Cu. St.	86.3	69.8	S.W.	2.0	0.16	.....	0.16	Distant Thunder betwen 8 and 9 p.m.
6	29.790	81.5	64.0	.57	1.0	5.0	Cu. St.	91.2	73.8	W.S.W.	3.3	.....	.....	.....	
7	29.719	74.2	58.3	.59	3.5	10.0	Cu. St.	80.3	65.4	S.W.	2.6	.....	.....	.....	
8	29.621	74.4	54.3	.53	2.0	4.3	Cir. Cu.	79.4	61.2	W.	2.3	.....	.....	.....	
9	29.628	65.3	57.9	.83	9.5	10.0	Nimb.	75.0	62.0	S.E.	2.3	0.26	.....	0.26	
10	29.864	64.9	49.5	.60	6.0	2.0	Cu. St.	71.9	56.0	W.N.W.	1.6	0.22	.....	0.22	
11	29.946	69.8	53.4	.57	5.5	7.6	Cu. St.	76.6	59.4	W.S.W.	2.0	.....	.....	.....	
12	29.694	70.5	59.5	.71	3.5	10.0	Cu. St.	73.6	61.2	W.S.W.	1.3	.....	.....	.....	Dist. light. bet. 8 and 10 p.m.
13	29.521	74.2	62.1	.67	7.0	8.0	Strat.	80.6	63.5	S.W.	3.0	0.49	.....	0.49	Heavy rain. Light. in even.
14	29.682	65.7	55.6	.67	5.5	4.3	Cu.	69.9	60.3	N.W.	1.6	.....	.....	.....	
15	29.756	68.5	59.1	.74	8.5	8.0	Nimb.	78.0	58.0	N.N.E.	2.6	.....	.....	.....	Thunderstorm p.m.
16	29.782	69.2	60.4	.74	7.0	7.6	Cir. St.	78.0	61.8	S.W.	2.0	0.36	.....	0.36	
17	30.027	64.8	52.6	.67	5.5	5.3	Cu.	69.0	59.2	N.N.E.	1.3	.....	.....	.....	
18	30.123	69.4	53.5	.60	4.0	0.3	Cu.	76.3	56.2	S.	1.0	Inap.	.....	Inap.	
19	29.999	73.3	60.1	.66	6.0	9.0	Cu. St.	77.8	62.6	S.	1.6	.....	.....	.....	
20	29.774	67.5	59.8	.78	7.5	6.6	Cu. St.	75.2	62.0	S.E.	2.3	0.28	.....	0.28	Aurora with streamers.
21	29.843	69.6	53.7	.59	4.5	3.6	Cu. St.	75.0	64.0	S.	3.0	.....	.....	.....	
22	30.009	68.8	59.3	.75	4.5	5.0	Cu. St.	78.9	60.0	S.	1.3	.....	.....	.....	
23	29.786	61.9	57.0	.85	10.0	10.0	Nimb.	69.2	58.9	S.E.	4.6	0.16	.....	0.16	
24	29.702	73.8	57.2	.63	10.0	4.6	Cu. St.	87.8	66.2	S.W.	3.3	1.22	.....	1.22	Thunderstorm at 7 p.m.
25	29.781	70.4	59.1	.70	6.5	3.6	Cu.	75.0	62.0	S.W.	3.0	0.28	.....	0.28	
26	29.893	70.5	59.5	.70	4.5	2.0	Cu.	78.2	57.4	W.S.W.	2.6	.....	.....	.....	
27	29.931	71.7	62.4	.75	6.5	5.0	Cu.	78.8	61.6	S.W.	3.0	.....	.....	.....	
28	29.948	69.9	64.3	.83	8.5	7.6	Nimb.	75.6	60.4	S.S.W.	1.6	0.35	.....	0.35	Thunderstorm.
29	29.967	69.9	66.3	.90	10.0	7.3	Nimb.	74.6	63.2	S.S.W.	2.0	0.32	.....	0.32	Heavy Thunder. at 10 p.m.
30	29.871	73.1	66.8	.85	7.0	6.6	Cu. St.	78.8	62.6	S.W.	1.6	0.58	.....	0.58	
31	29.912	73.9	61.2	.66	5.0	0.6	Strat.	78.6	65.0	W.	2.3	.....	.....	.....	
S's	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
M's	293538	70.50	59.31	.786	.....	.....	.....	77.53	61.14	.....	4.90	.....	4.90	

ABSTRACT OF METEOROLOGICAL OBSERVATIONS AT *TORONTO* IN JULY, 1862.

Compiled from the Records of the Magnetic Observatory.

Day.	DAILY MEANS OF THE: Barometer reduced to 32° Fah.	Temperature of the Air.	Relative Humidity.	Amount of Cloudiness.	THERMOMETER: Max'm read at 6, A.M. of next day.	THERMOMETER: Min'm read at 2, P.M. of same day.	Dew Point at 3, P.M.	WIND: General Direction,	WIND: Mean Velocity in Miles per hour.	RAIN AND SNOW in 24 hours, ending at 6 A.M. next day: Rain.	Snow.	Total rain and melted Snow.	Ozone in 24 hours ending 6 A.M. of next day.	GENERAL REMARKS.
	Inches.	°	0—100	0—10	°	°	°				Inch.	Inch.	0.10	
1	29.4093	60.53	58	2	70.2	49.8	51.0	S. 10 W.	5.66		.....	.....	.....	
2	.4982	61.47	60	4	70.8	50.2	47.0	S. 76 E.	3.33		.....	.....	.....	
3	.7753	65.60	74	0	77.0	49.8	60.5	S. 51 E.	2.83		.....	.....	.....	
4	.8750	72.22	70	0	83.8	55.0	65.0	S. 12 W.	3.97		.....	.....	.....	
5	.7468	77.58	64	4	90.2	63.0	67.0	S. 41 W.	6.88		.....	.....	.....	
6	.....	Sunday			95.5	67.8	.....	N. 62 W.	9.43		.....	.....	.....	Very hot and Sultry. Faint Aurora extremely Hot and Sultry.
7	.4310	71.42	58	8	82.5	61.2	55.5	S. 72 W.	3.02		.....	.....	.....	
8	.3425	70.67	68	8	82.6	61.0	66.0	S. 7 W.	3.36	0.320	.....	.....	.....	Thunderstorm, during ni.
9	.3195	69.63	69	8	79.5	64.6	49.5	N. 28 W.	8.45	.047	.....	.....	.....	
10	.6355	65.55	51	7	76.0	54.2	41.0	N. 19 W.	8.03	.....	.....	.....	.....	
11	.6705	63.32	68	7	77.5	48.2	49.5	S. 17 W.	3.08	.....	.....	.....	.....	
12	.4327	70.77	64	10	83.9	52.0	55.0	S. 67 W.	7.25	Inap.	.....	.....	.....	
13	.....	Sunday			80.4	62.6	.....	S. 55 W.	8.38	.625	.....	.....	.....	Severe Storm 9 p.m.
14	.4433	64.78	83	7	74.2	62.0	64.0	N. 89 E.	5.16	Inap.	.....	.....	.....	
15	.4662	64.28	92	8	73.0	59.8	65.5	N. 44 E.	5.32	.140	.....	.....	.....	Day Foggy.
16	.5987	63.32	73	7	70.6	61.0	57.0	N. 26 W.	8.30	.....	.....	.....	.....	
17	.6982	61.52	71	5	68.8	50.4	54.0	N. 86 E.	6.10	.....	.....	.....	.....	Faint Aurora.
18	.7153	63.82	72	9	69.5	54.0	60.5	N. 81 E.	8.47	.....	.....	.....	.....	
19	.5333	66.70	86	9	72.0	62.3	63.5	S. 80 E.	5.29	1.335	.....	.....	.....	Thunderstorm during even. Very heavy showers.
20	.....	Sunday			78.8	63.8	.....	N. 77 W.	8.13	.290	.....	.....	.....	
21	.4995	64.23	91	10	67.2	61.4	61.5	N. 6 E.	1.37	.005	.....	.....	.....	
22	.5448	67.35	85	10	72.8	62.8	66.0	S. 42 E.	5.07	.352	.....	.....	.....	
23	.3102	70.23	71	5	81.0	66.2	62.0	N. 76 W.	7.56	.879	.....	.....	.....	Auroral arch and streamers.
24	.4090	63.27	81	7	70.8	54.0	63.0	S. 83 W.	5.95	.090	.....	.....	.....	Faint Aurora.
25	.4977	62.67	68	1	72.0	51.8	56.0	S. 71 W.	6.60	.005	.....	.....	.....	
26	.5672	66.57	65	2	76.8	56.0	53.0	N. 72 W.	6.86	.....	.....	.....	.....	
27	.....	Sunday			75.0	53.4	.....	S. 7 W.	3.75	.....	.....	.....	.....	
28	.5280	64.75	87	8	72.0	60.0	64.0	S. 34 W.	5.18	.815	.....	.....	.....	Very heavy Thunderstorm.
29	.5020	66.93	83	7	73.0	60.4	62.0	S. 56 W.	4.47	.440	.....	.....	.....	
30	.6283	68.48	71	2	75.0	63.0	62.0	N. 38 W.	8.18	.....	.....	.....	.....	
31	.7012	70.25	72	0	76.5	60.5	64.5	S. 87 W.	4.43	.....	.....	.....	.....	Auroral arch and streamers.
S's	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
M's.	29.5474	66.70	72	6	76.42	58.14	58.92	S. 89 W.	5.80	5.343	.....	.....	.....	