**Remarks on Dr Wilson Philip's theory of the circulation / by David Badham.**

It must be evident from the large quantity of blood voided, that it had perforated the coats of the stomach deeply, and most probably in several places. The gastric juice is well known to have no effect on a living animal, however powerfully it may be invigorated with the vital principle. In this case, that vital fluid could never have had the slightest effect, owing to the naturally weak powers of the constitution, and their scanty supply of nourishment, which this poor man is said to have suffered from.

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## REMARKS ON DR. WILSON PHILIP'S THEORY OF THE CIRCULATION.

By David Badham, M.D. Oxon.

It seems extraordinary, so long after the discovery of the circulation, that physiologists are still occupied in investigating the number and nature of the forces by which it is accomplished; yet, among the whole of those agents, which a more recent physiology has pressed into this service, there is perhaps none which we should not be glad to accept, in order to the better intelligence of that great and primary function, provided that we can assure ourselves of their reality. Dr. Wilson Philip, however, holds a different opinion, and seems to think that we have more of such agents in our hands than the occasion requires, and that the conjoined systoles of the heart and blood-vessels should be alone sufficient. I certainly agree with him in opinion that we ought to exclude the motions of the lungs from our estimate of these forces; not only because the act in question cannot occur in fœtal life (and we know that without respiration the fœtal heart transmits the blood as perfectly, and much oftener than the maternal), but because the respiratory motions are interrupted ones, and not strictly uniform even when in operation; whereas the flow of blood to the heart is continuous and regular. As the number of respirations is much smaller than that of the pulsations of the heart—there being generally but one of the former to three or even four of the latter—and as each pulsation (or egress of blood) implies a corresponding influx from the veins into the right auricle, the blood must of necessity both enter and be expelled from the heart during those respiratory pauses, when the pressure of the atmosphere is equal every where. Hence I should infer that the circulation of the blood through the heart is wholly unassisted by the function of respiration; and the same reasoning which makes me reject this influence disposes me still more to put out of account the variable and infinitely complicated results of muscular contraction, upon blood-vessels distributed through them; for this species of pressure can be no more than the occasional cause of an increased velocity, and not among the agents of a regular circulation. Now, if we reject these supposed agents to assist the *venous* circulation, there only remains for the explanation of that difficult problem, 1st, a resiliency of the heart itself, by which it may suck in blood from the veins; 2dly, a *vis insita* in the veins themselves, by which they are enabled directly to carry forward the blood into the right auricle. The latter property is particularly advocated by Dr. Wilson Philip in his recent paper; the former, however, is a power in which one cannot but feel a very different degree of confidence.

"Whatever be the elasticity of the ventricles," says Dr. Wilson Philip, "it can have no effect on the blood in the veins; because the ventricles merely receive the blood from the inelastic auricles, which are *contracting* during the ventricular *diastole*." But this conclusion appears to me to be but slightly supported by an appeal to facts: the auricle, as we know, contracts *but feebly and very partially*; so that the ventricle may still, and, as I believe, does in fact, perform the office of a sucking-pump on the rising column of the blood sustained in the vena cava. Again: Dr. Wilson Philip propounds, that "the veins being tubes of so pliable a nature as, when empty, to collapse by their own weight, it is impossible that an ascending motion in the blood could be produced in them on any principle of suction; and that as far as the heart may possess such power, its tendency would be to cause the vessel to collapse, rather than to raise the fluid." But surely no "tendency to collapse" can take place where a system

of vessels remains constantly in nearly the same state of distention; which cannot be otherwise where an equal quantity of blood is received by one side of the heart and propelled by the other. An average equality in the contents of the two orders of vessels is of strict necessity, and any tendency to collapse is effectually prevented by the constant ingress of as much blood into the veins as is drawn out of them by the alledged or admitted elasticity of the heart. But as Dr. Wilson Philip objects to reasoning in physiology where nature may be interrogated by experiment, the following experiment was instituted by that gentleman:—

Experiment.—An inch and a half of the jugular vein in a rabbit is exposed; a ligature is placed on the extremity farthest from the heart; the head of the animal is left depending, by which position the blood, in order to reach the heart, will have to ascend against gravity. "The ligature being suddenly compressed, the blood contained between it and the heart was completely and instantly expelled, so that to a superficial view there seemed to be *no vessel* where a large dark-coloured vein had just before appeared. In the meantime, on the other side of the ligature the vein had become gorged with blood. Hence Dr. Wilson Philip deduces a power of independent action in the veins to forward the circulating blood."

But may I ask Dr. Wilson Philip whether it be indeed so certain that the ascending blood, in his experiment, did thus prevail against gravity by a power resident in the vein, and not rather by that action of the heart (the indraught or suction) against which he has been contending? Why was it that an *artery*, similarly exposed and similarly tied, got rid of its blood more slowly than the vein had done? Is, then, the vis insita (even if we allow it) in a vein—a vessel which, according to Dr. Wilson Philip, "collapses by its own weight,"—greater than that of an artery? The experiment appears to me to shew nothing more than that the power of the heart (as might naturally be supposed) to draw blood into its cavities by its own resiliency, exceeds the "vis propria" of an artery deprived by ligature of the "vis a tergo." From this experiment on the vein, Dr. Wilson Philip also draws the conclusion that there is no "vis a tergo" concerned in the venous circulation; because when such a power, if it ever existed, is taken off by ligature, the blood still finds its way into the heart. But may not an opposite inference be drawn from Dr. Wilson Philip's own experiment?—for if there was no vis à tergo, why was the vein *behind* the ligature, as we read, "gorged with blood?" Can that distention be explained by any vital action of the vein? If so, a vein has opposite actions, and may both distend and relieve itself; which is not pretended. On the contrary, Dr. Wilson Philip attempts to shew that the action of the veins is of the same kind (*contractile*) with that possessed by the heart and arteries; so that the tendency of the vein should be to contract its capacity only. On the whole, I remain as unconvinced that the veins have any active share in the reflux circulation as before these experiments were instituted; and must believe the heart, arteries, and capillaries, to be the agents mainly conducive to its completion: the heart, the principal power, acting by its own muscularity and elasticity (at once a propelling organ and a great suction valve); the arteries having, perhaps, a larger share than is usually allowed to them in assisting the active energy of the heart; and the capillaries being far from unimportant auxiliaries in promoting that reflux which is still principally effected by the expansion of the heart.

Among the forces of the circulation, shall we ever be authorized to insert *an expansive, penetrating energy of the blood itself?* If we admit the blood to be a vital fluid, a fluid having a *vita propria*, and exhibiting certain properties not conceivable but by allowing it a participation in qualities which, when attached to solids, we call *life*, the notion of the blood assisting to move itself is not an intuitive absurdity. Vitality cannot be conceived without the power of motion.

It is usual to suppose that the power of the heart and arteries in the circulation is lost in the capillaries: these, consequently, must require a power of their own to advance the blood into the veins—in short, an independent action. The powers of the heart, arteries, and capillaries, must, it should seem, be in one sense independent powers, but must all act together and assist each

other. In the words of Hippocrates, though not in the Hippocratic application of them, *παντα ενροα, και συνροα.*

Dr. Wilson Philip, I observe, elsewhere labours to shew that the absence of fibrine in arteries is not a reason for our denying muscularity to these tubes; and instances the crystalline lens (as Dr. Young had done) in support of this his opinion. But as there exists no ground for concluding, *à priori*, that any particular tissues must contract upon the application of stimuli, merely because they are what we call muscular, in visible structure; so there is no antecedent reason why other tissues may not, under certain circumstances, contract, though not muscular, in the possession of, or disposition of fibres. I think we have abundant evidence that they do. "Muscularity" and "muscle," words used by every body, are not yet rigidly defined. The chemist looks for the evidence of muscle in its *analysis*; the physiologist calls *that* muscle which contracts on the application of a stimulus; and the definition of a microscopist differs from both. The iris, the canal of the urethra, the middle coat of the arteries (perhaps miscalled muscular, but capable, notwithstanding of strong contraction), the gall-bladder, and the contractile coat of the intestines (which Dr. Hodgkin tells me is essentially different in its molecular structure from any muscle), may all be cited in evidence on this question. If, then, I deny to the veins a power of their own, it is not that they are not muscular in the disposition of their fibres, but that I yet see no evidence of their possessing any such action as should result from that structure. That veins may occasionally pulsate I admit, for I have seen an instance of the kind; but then such instances are too rare to permit any inferences from this observation; and if such instances were more frequent, still they would not explain what occurs in the ordinary circulation.

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## ON DOUBLE VISION, AND CERTAIN OTHER OPTICAL PHENOMENA.

*To the Editor of the London Medical Gazette.*

Hackney, Aug. 9, 1832.

SIR,

IN the last number but one of your journal, you notice Dr. Graves's paper on Vision, and ascribe a certain portion of originality to his views of the "crossing of images." Allow me to refer you to some of the older volumes of the Lancet, which, by the by, contain far more valuable professional matter than do the later ones, for some excellent papers on many peculiarities connected with vision, by Mr. Thomas Williams; for instance, to p. 344 of vol. ii. 1828-9, wherein this gentleman adduces the fact, and explains what he conceives to be the reason, of the crossing of the images, under certain circumstances—he calls it the changing of sides—and mentions an experiment, in the repetition of which this phenomenon must be detected.

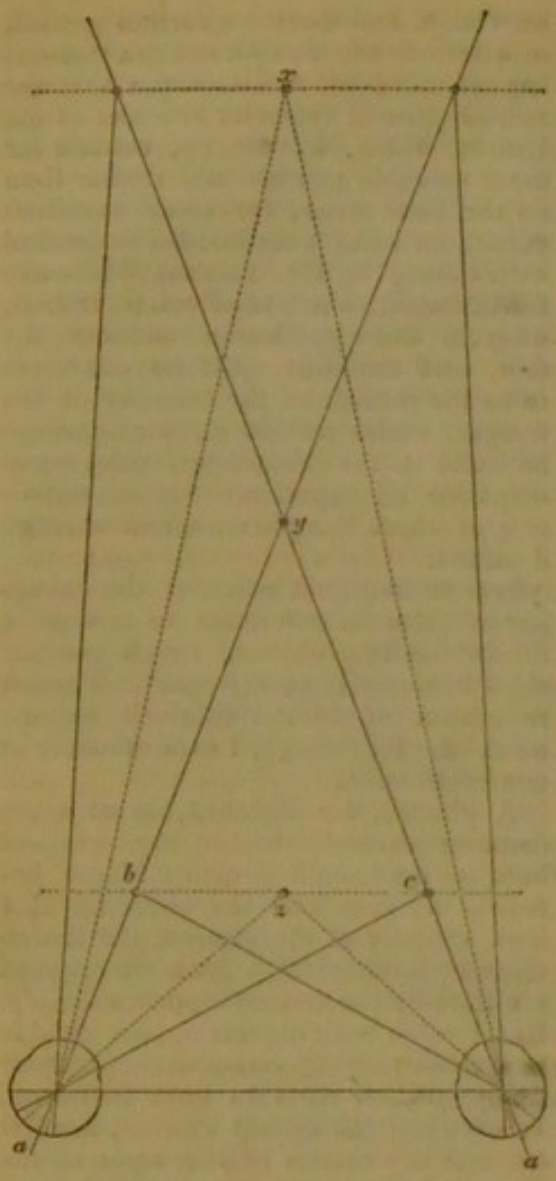
But he does not speak of the changing of sides in reference to the more *distant* of two objects, which you say must necessarily be the case*. From a repetition of Mr. Williams's experiment (the following), I cannot arrive at this conclusion.

A church, for instance, is at some distance directly before my eyes. I hold up my thumb at arm's length between my eyes and the church. If I look directly at the church, the thumb appears double; if I look directly at my thumb, the church appears double. But though both objects appear double under the varying circumstances, their images do not cross in both instances. If I look at the distant church, my *left* eye sees my thumb to the *right* of the church, and my right eye to the left, as may be proved by shutting either eye. But if I look directly at my thumb, which is the nearer object, my *right* eye sees the church to the right of my thumb, and my left eye sees it on the left of my thumb, as may be proved in the same way; and, if the following diagram shew the matter correctly, it will appear that the images of the distant object cannot cross. Moreover, intervening objects, in the experiment, do not appear to lose their proper relations as to distances or "planes by projection" or aught else.

The axes of the two eyes meet on the middle object, *y*, (see diagram, in next page,) the lines of the axes forming the angle, *a*, *y*, *a*.

The nearer object, *z*, being within

* We do not well understand Mr. Berry here; we have not said, nor did we mean to say, any thing relative to the changing of sides, at variance with his or Mr. Williams's conclusions.—ED. GAZ.




the angle, and therefore to the right of the axis of one eye, and to the left of that of the other, is seen double; each image being removed from the line of the axis *inwards*, or towards the other eye, and the images decussate, because the left eye sees *z* to the right of its true position, and the right eye to the left; but the plane, or apparent distance of the images, must be the true plane of the object. It is seen double, because it has actually two apparent positions, when both eyes are engaged; for it is to the right of the axis of the left eye, and to the left of that of the right; and the degree of apparent removal of the image from the object, is in exact proportion to the actual distance between the object itself and the line of axis of the eye—that is, if the object be actually situated one inch to the right of the line of axis of the left eye, its image must appear just as much farther to the right of the object, or two inches in all from the line of axis—as in the diagram, from *b*, the line of axis, to *z*, the image, and from *z* to *c*, which is the same distance as from *b* to *z*. All will be reversed, of course, for the right eye.

But the images of the distant object, *x*, under the same circumstances, will be removed to the *outer* side of the axis of either eye, in proportion to the distance of the object from the lines of the axes. These lines are produced, yet form an angle, and their separation must increase with their length; these images, then, cannot cross. Moreover, the image on the *right* of the axis of the *right* eye, is that which the *right* eye receives, and the other that which the *left* receives. The actual position of the image will be, to the right eye, as much to the right of the object, as the true situation of the object is actually to the right of the line of axis of the *right* eye; and the apparent deviation will increase with the distance—that is, as the sides of the angle are prolonged.

The diagram can prove nothing with regard to "planes of projection;" I only mean by this that the experiment does not *appear* to shew any alteration of distances; yet this may certainly be owing to want of appreciation, from our actual consciousness of the distance and relations of objects.

While I have this opportunity, allow me to notice another optical fact, about which there seems to prevail some difficulty. In all works that I have met with, and in lectures, the *limbus luteus* and foramen of Soemmering are commonly said to correspond with the axis of vision; but this is the only insensible point of the retina; whereas, the accurate direction of the axis of the eye to an object, is supposed essential to distinctness of vision. If this be the case, its distance from the axis may be thus measured by means of its insensibility.

Let the arms be extended before the eyes, the thumbs being erect and close together; then shut, for instance, the *right* eye, the *left* being fixed on the *right* thumb. If the left thumb be now moved away from the right, it will soon be invisible, and will then, still moving on, presently be again seen. Now these distances may be measured. Suppose the right thumb just applying to the half-inch mark on a foot rule; the arms being extended, the thumbs are as

nearly as possible two feet from the eye. If the left thumb be now slid along the rule away from the right thumb (the left eye being fixed on this latter thumb), the left thumb will, when it has reached the 5¼ inch, begin to be invisible, first on its outer edge, then completely, and continue to be so till it has reached the 7¼ inch, when the outer edge again becomes visible; but the inner edge will not have emerged till it is on the 7¾ inch mark. The point, then, at 6¾ inches may be supposed co-incident with the centre of the *limbus*. Deducting the half inch which the right thumb covers, the 6¼ inches will be the measure of the base of a triangle, whose sides are, a line, two feet long, drawn from each point of the base, and converging so as to meet at the focus of the lens: such measures give an angle of 15°. These lines, produced beyond their decussation, would, allowing for the converging powers of the lens, give a proportionate angle behind the focus, and the retina, as a base, would form with them a triangle; the points of the base being the centre of the limbus, and the axis of vision. With two such fixed points, would it not be possible, somehow or other, to compute the converging power of the lens? The measurement of the angle will of course vary with the length of the sides, the base being given; and though the base will vary also, in proportion to its distance from the eye, it does not vary in the same ratio as the distance or length of the sides. I suppose, too, different lenses will measure different bases, since all are not alike. But I made my thumbs two feet all but half an inch from my eye.

If, sir, you consider these remarks worth publishing, you will oblige me by giving them insertion.

I am, your obedient servant,

GROVE BERRY.

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## NEW DESIGNATION FOR HYDROCEPHALUS.

*To the Editor of the London Medical Gazette.*

SIR,

FEW things are more to be lamented than the unnecessary multiplication of undefined terms in medical nomenclature; and it is, therefore, with much regret that I see Dr. Marshall Hall has made use of the superfluous name of "hydrencephaloid disease" to denote a set of symptoms which have always hitherto been called hydrocephalus, and which new name gives no more correct view of the actual nature of the disease than the old one did. The symptoms described in the cases recorded in your Gazette of August 4, are precisely those of what is generally called hydrocephalus, and were originally treated as hydrocephalus usually is by the greater part of practitioners. The substitution of the term hydrencephaloid disease for hydrocephalus, is about equivalent to converting the word inflammation into the two words inflammatory action, an unnecessary incumbrance of words, tending to produce confusion rather than precision. In the Doctor's recommendation of treating cases of this description (which, had they proved fatal, would on dissection most probably have displayed effusion in the brain) I heartily concur, as being more judicious than the excessive depleting measures employed under the idea of the symptoms being produced by cerebral inflammation; and indeed I had endeavoured to draw the attention of the profession to the fact of these cerebral symptoms being merely symptomatic of intestinal irritation and constitutional debility, and not those of inflammation, in a small treatise published in 1825*; and I hope, now my opinion is corroborated by the experience of Dr. Hall and others, a more efficient treatment will be generally adopted. The value of the cases furnished by Dr. Hall consists in demonstrating that the symptoms of cerebral affection were not dependent upon inflammation of the brain or its membranes, and did not require anti-inflammatory treatment, a point upon which I strongly insisted in the little treatise I

* "The few observations offered in the following pages are intended to controvert the doctrine of water in the brain being a distinct specific disease, and to oppose the prevalent opinion of the proximate cause of the watery effusion being inflammation. It has been the author's endeavour to shew that this symptom, water in the brain, is an accidental occurrence, taking place in a great variety of diseases, and as the consequence of numerous causes acting upon the cerebral organs, depending upon a certain condition of those organs, constituting a state of predisposition merely, without the presence of actual cerebral disease."—Page vii.

mentioned* ; and I think this will hold good in a great proportion of the cases which are classed under the head of acute hydrocephalus. That cerebral inflammation sometimes takes place in children, cannot be denied; but it is a matter of great consequence not to include under this term all states of cerebral disorder, and not to employ measures which, so far from being efficacious, are highly detrimental, instead of the stimulant and tonic treatment so successfully practised in the cases sent by Dr. Hall.

I am, sir,
Your obedient servant,
WILLIAM SHEARMAN.

Northampton-Square,
August 9, 1832.

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## CHOLERA — EFFICACY OF BLOODLETTING.

*(Being a Report transmitted to the Army Medical Board.)*

Dublin, 27th July, 1832.

SIR,

I BEG to state the satisfaction I feel in complying with your wish "to have such observations on the subject of cholera as may be thought useful," or in any way add to the information already acquired respecting this fatal, and I may add, in many instances, unmanageable distemper. I have only to express my fears that the result of my experience in the disease during the last six weeks will do but little towards the general stock of information; and at the same time to say, that though I have seen much of the calamity in India, and latterly here, in my frequent visits to the General Cholera Hospital, as well as to the military ones, I shall confine my remarks principally to the cases which came immediately under my observation in the reserve of the 12th Foot, and in such details as were under my own care as staff-surgeon.

My immediate vicinity to the depôt of the 12th regiment, and cordial professional feeling with assistant-surgeon Dick of that corps, enabled me to see his cases in most instances, at the very commencement, and to continue my observation with him to the termination in each. The general results of *all*, have led me to a conviction of the propriety of *blood-letting*, and in no case of genuine cholera would I delay this remedy unless actual collapse, or a very near approach to it, was evident. Of course the constitution, sex, age, &c. of the patient, are to be considered; and the greater number of characteristic symptoms present, *more particularly profuse purging*, the greater caution as to abstraction of blood, as in such cases it is sometimes an abuse of a remedy to use it, or, at all events, to persevere in it during actual collapse. By the latter term, I mean *a total cessation of pulse at the wrist, with a temperature of skin below natural:* if attended with chilled tongue and breath, blue colour, altered countenance, and sunken eye, so much the more intense is the collapse. I am thus particular on this point, from some referring the term to an aggravated state of debility, sunken countenance, &c. *without cessation* of arterial action in the extremities; and asserting they have recovered patients from actual collapse, accompanied by total loss of pulse. *I have seen no such recovery in any military patient*, and believe it to be very rare in any. In the General Cholera Hospital, I am satisfied, it sometimes happens; and I rather believe impoverished, or poor fed individuals, but of sound constitution, have a better chance of recovery when consecutive fever succeeds collapse, than well fed and robust persons; and this, in my opinion, strengthens the propriety of bleeding in this class at the very onset.

From the previous sentiments it will be perceived (that like many others) I espouse a favourite remedy: it is so: at the same time I am not led away with the idea that bleeding is applicable to all, or rather that it can cure every

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* "My object is to direct the attention of practitioners to the view I have taken of acute hydrocephalus; that of not considering it as a proper idiopathic disease, but the effect of some previously existing disease, the most frequent of which is fever; or as the consequence of increased exhalation, the natural result of simple increased vascular excitement, arising from various causes, acting in children of debilitated constitutions or irritable habits; and to point out the obvious inutility of combating a single symptom, in place of embracing a comprehensive view of the essential character, usual progress, and natural termination of the preceding or existing disease."—Page 123.

"As general irritability is found to exist in an eminent degree in children of a weakly habit, medicines which produce a tonic effect are frequently of very great service in counteracting the predisposition to this complaint."—Page 117.

case; on the contrary, from extensive Indian, as well as late experience, I am convinced that cases of cholera occur in which no practice will avail. It is evident I advocate *early bleeding*; but to go into particular varieties, or describe minutely the shades of difference in each case in which it is applicable or not, is beyond the limits I prescribe myself. As a general observation, however, I imagine it may be resorted to without fear, in every case in which the skin retains a moderate temperature, and the pulse remains distinct at the wrist. The more violent the spasms are, in most cases the more advantageous the remedy; but tact and observation must teach this. In addition to bleeding in the cases alluded to in this paper, calomel and opium, with purgatives, in the more advanced stage, were the medicines chiefly used, and such other adjuncts as were appropriate to particular symptoms. All the cases extensively bled recovered, without running into collapse, and the patients were out of danger in from six to twelve hours, though still requiring attention to restore the natural secretions, &c. &c. The fatal cases in the regiment (12th) were three; one only of these was bled, and that but to six or seven ounces; it came almost by drops, *and more could not be obtained*, though the heat was not materially reduced, nor the pulse feeble at the moment, or for a long period after; but the case was one of great intensity, with such sudden and complete prostration of strength, and uncontroulable purging, that there was no hope from the first, and the man, though robust and temperate in habits, died in eight hours from being seen. The other cases were nearly similar in severity, though not so rapid: neither were bled: both were removed to the Military Cholera Hospital as soon as possible, when the disease was characterized, one dying shortly after his arrival in the state of collapse, and the other in that of reaction, having survived to the third day. I shall insert the names and results of all the cases of cholera, in a tabular form, at the bottom of the report, which will more clearly elucidate the practice. With one exception, premonitory symptoms were acknowledged to a greater or less period: the exception was a sergeant; and this circumstance makes me feel some doubts as to his veracity; as it is probable, he being charged with minute instructions "to detect, and report any cases of purging among the men," might hesitate to admit such error in his own person.

It may further be right to observe, that the reserve of the 12th regiment arrived in Dublin the 4th June, having come from Drogheda, *an infected quarter*. Two fatal cases of cholera occurred while at the latter place in May. Neither were bled, and both died in less than ten hours from the first development of the symptoms. The first case occurred to a healthy plethoric young man, a prisoner in the county gaol, under sentence of a court-martial. Being in a distant part of the building, and locked up for the night, he was not seen until some hours after the seizure, when he was in a complete state of collapse: he died in about two hours after his removal to the hospital. The other case occurred to a man in the Regimental Hospital in the last stage of consumption. He was suddenly seized with the characteristic purging, and died in two hours. He had neither cramps nor vomiting; but the discharge from the bowels, the voice, countenance, &c. were very distinctly marked. In Dublin the first case occurred on the 20th June, sixteen days after arrival, and I should presume had no connexion whatever with Drogheda, as the disease had long existed in Dublin, and one or two cases had occurred in the barracks occupied by the 12th, previous to their arrival.

In addition to the cases of actual "epidemic cholera" since the 20th June, numerous severe cases of bilious cholera occurred in the men of the 12th, as also several of severe diarrhœa. Those cases, taken collectively, amounted to nearly fifty. In three-fourths of them, the subjects being young and robust, Mr. Dick abstracted blood, and with the very best effects on the immediate attack, as well as having the ulterior satisfaction of seeing, *that in no instance in which bleeding was had recourse to, did such affections degenerate into the epidemic character*, and which I am satisfied would in some instances have been the case, but for his great attention to this point. The remedies used, in combination with bleeding, were emetics when the stomach appeared loaded, or the patient harassed by retching. Immediately after, calomel

and opium, in the proportion of six or eight grains to one of opium, and in a few hours a purgative of castor oil, or a full dose of rhubarb, with aromatic confection. In the more mild cases, "where there was merely purging," with the abstraction of blood, a draught, composed of Pulv. Rhei. gr. xx. Magnes. gr. xij. Tinct. Opii, gtts. xv. ad xx. in Aq. Menth. Pip. ℥iss. was all that was required.

In this frequent occurrence of disease in the stomach and bowels *(Cholera being prevalent,)* it is evident that the strictest attention was necessary, many of the cases being of extreme violence, and only to be discriminated by minute attention to the symptoms: at the same time that the change from this state to genuine epidemic cholera was so insidious in a few, as to render it scarcely possible to mark the difference, till the distressing reality was rendered certain, by increased debility, loss of voice, &c. and a change in the evacuations to the characteristic appearance.

To render this more evident, I shall relate the case of Staff-sergeant Kelly, who is immediately attached to me as clerk, and the detail of which will show generally the means used in all the cholera cases; allowing some variety for particular circumstances:—

On the morning of the 4th instant, after examining a few recruits, and when about to leave the inspection room, Sergeant Kelly mentioned to me that he had been purged six or seven times from midnight to five o'clock that morning; from which time he had felt well, except thirst: the stools were watery, passed without griping or pain, but nothing known as to colour, from having gone to the privy. Countenance was natural, tongue clean, and pulse regular. He had been about his usual duties from early in the morning; and on the eve of my leaving, mentioned the circumstance more as conversation than as complaint. I directed him to keep quiet in his room, and gave the following draught:—

℞ Pulv. Rhei gr. xx. Mag. gr. x. Tinct. Opii gtt. xv. Aq. Menthæ Pip. ℥iss. M.

This was rejected in about ten minutes, but nothing beside. I now made him go to bed, and when there, gave Pil. Hyd. Subm. gr. vj. Ext. Opii. gr. j. and left him perfectly comfortable *at noon;* in fact, the necessity of being in bed did not meet his views.

At 2 o'clock, I was absolutely shocked at his altered countenance: his eyes sunk, though without dark areola; pulse small and 120; skin below natural temperature; feet cramped; and both vomiting and purging of clear watery fluid; his tongue was whitish, but not cold; he had made urine freely in the early part of the morning, but none since. I instantly tied up his arm, and made a free opening in the median vein; but though prominent, and pulse steady at the wrist, only the few drops between my thumb and the ligature flowed out; and this of a dark grumous description. By frictions upwards, and to the hand; applying a warm sponge occasionally to the orifice; by perseverance and encouragement, the flow at last improved from trickling along the arm to a small stream; on which, I made a second opening in the outer vein; both streams gradually improving, till I had abstracted full 32 oz. when it poured out in a rapid and uniform flow from both orifices, shewing a change in the centre of the stream to a more florid colour. I now could have obtained any quantity; but the cramps having subsided, and the man not robust, I tied up the arm. He vomited during the operation to the extent of nearly a quart of fluid, thrown up with great violence: part of this was evidently drink. He now had one of Dr. Stevens's powders, but to half the quantity, namely, Supercarbon. Sodæ gr. xv. Muriat. Sodæ gr. x. et Chlorate of Potass. gr. 3½, in two ounces and a half of water. This was repeated every two hours during the afternoon; and Hyd. Subm. gr. iv. with Op. gr. ss. every *four* hours. As he complained greatly of thirst, lemonade, whey, or acidulated barley-water, were allowed, according to his wish. His feet and legs were firmly rolled with a flannel bandage, and warmth applied to the stomach. He seemed to require nothing further.

At 11 o'clock at night his countenance had improved; he had three motions to this time, in all about a pint, and characteristic. The opium was now omitted in the pills, continuing the calomel alone.

On the morning of the 5th he was better: two stools passed, though still very watery and had a yellow tinge; and

he had made about three ounces of high-coloured urine; his pulse was still quick, and thirst great. At 10 A.M. he had a purgative of ℥ss. Ol. Ricini in mint-water, which produced some blackish green evacuations in the afternoon, these changing gradually from all shades of black and green to natural, about the morning of the third day, when he had no complaint but debility. The calomel had been continued at longer intervals, and effervescing draughts in place of the saline powders.

In this case, which was both insidious and severe, I am satisfied that collapse, and the dangerous train of concomitants, were totally suspended by timely bloodletting; and equally certain, that had much longer delay occurred, the dangerous and fatal depression would have taken place to the almost total extinction of hope. In the foregoing remarks, I have purposely abstained from noticing other useful and powerful remedies, applicable to particular stages of the malady, and by some strongly recommended at the very commencement—I mean emetics of mustard, either pure or combined with salt; or the latter, in milder grades of the malady, alone. In one case (that of Pat. Byrne) inserted in the table, I used the salt emetic in eight hours after the bleeding: at this time, he complained of great loading and fulness at the epigastrium, and had ineffectual and slight vomiting of watery fluid. He had half an ounce of common salt in four ounces of tepid water, and no effect being produced in ten minutes, this was repeated. A large discharge of fluid now took place, with great relief to his sensations; and this was *yellow* in colour, and he said *bitter* tasted, such not having been the case in the previous ejections.

My experience of mustard emetics will not admit of my entering on the subject, though I believe them to be most useful in many cases: neither shall I notice the employment of the carbonate of ammonia in collapse, so strongly recommended. The principle on which I put these few hasty lines together, was that of actual experience of a particular and, in my mind, paramount remedy; and therefore I shall not enter on others, however valuable.

ANTHONY C. COLCLOUGH,
Staff-Surgeon.

*To Dr. Renny,*
*Director General of Hospitals.*

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TABLE *exemplifying the Cases of* CHOLERA EPIDEMICA, *alluded to in Report.*

| Regts. | Men's Names. | Age. | Extent of Bleeding. | Results and Remarks. |
|---|---|---|---|---|
| 12th | Edm. Gidney ..... | 20 | 6 oz. | Rapid Collapse, and Death in 8 hours. |
| — | Owen Lesley ..... | 21 | — | Collapse, Re-action, and Death 3d day. |
| — | Thomas Waters ..... | 27 | 35 oz. | Recovery. |
| — | John Burrows..... | 22 | — | Died in Collapse within 10 hours. |
| — | M. Stephenson ..... | 27 | 40 oz. | Recovery.—Cramps most violent, and all symptoms well marked; but discharge from stomach was slightly coloured throughout. |
| — | Serg.-major Daley ... | 39 | 30 oz. | Recovery. |
| — | M. Hopkins..... | 26 | 24 oz. | Recovery. |
| ~~89th~~ | Staff-serg. John Kelly | 28 | 52 oz. | Recovery. |
| ~~12th~~ | Pat. Byrne ..... | 27 | 22 oz. | Recovery. |

FACTS AND OBSERVATIONS
RELATIVE TO THE
*Symptomatic Modifications and Communicability of the Fever of the Pestilence commonly called the*
CHOLERA MORBUS.

BY WILLIAM JOHN THOMAS, M.R.C.S.

THE following observations and facts relative to the disease prevailing so generally over the United Kingdom, are drawn up from memoranda made upon one hundred cases which occurred principally in the thirteenth district of the town of Liverpool, as well as from a few private cases scattered in the neighbouring places. All the cases occurring in the thirteenth district were under the immediate supervision of four honorary

medical officers, appointed by the Board of Health, one of whom, the talented Dr. Traill, is, I regret to state, about to leave the town, having been appointed to the Chair of Medical Jurisprudence in the University of Edinburgh. Although I rejoice to see this scientific philosopher receive that honourable reward which his high attainments have so long merited, yet I cannot but deplore the loss we are about to sustain by his removal from town.

Having made notes of the cases which came immediately under my charge, I have thought it expedient to submit the recorded facts to the medical public. In a statistical point of view they have their appropriate value, and in medical records the accumulation of these recorded facts is duly appreciated.

Previous to the commencement of this pestilential visitation, an unusual number of cases of typhus fever prevailed, the majority of them exhibiting the usual symptoms of typhus gravior; and I am persuaded, if the gigantic invisible had not usurped the sceptre of morbid supremacy, we should have seen more of our old antagonist than we have witnessed this season. The typhus after a short period abdicated its imposing attitude in the rank of diseases, and was succeeded, after an interval of a few weeks, by that reign of devastation and woe which I trust never again to witness in the course of my medical career.

When the pestilence commenced its ravages in the capital of Ireland, we were in the momentary expectation of its appearance in town. The constant communication between the former place and Liverpool rendered it almost impossible for the latter to escape, although a quarantine was imposed upon all vessels sailing from the infected port.

The authorities of the town had provided hospitals for the accommodation of the sick; and a number of the most respectable practitioners having volunteered to aid the poor parishioners in the forthcoming storm, had districts assigned to them, in which they officiated as honorary medical officers. The arrangements were conducted by the Board of Health, constituted by the magistrates, the medical officers of the hospitals, and the Rector of Liverpool.

A curious circumstance may be alluded to in this place, and that was an epizootic mortality which preceded the pestilence. I do not assert that this circumstance had any connexion with the disease; but as a concomitant fact, it may be stated, that a number of flies, of a wasp-like appearance, were found scattered in many parts of the town. Some persons maintained that the deaths of these winged inhabitants of the air were caused by a pestilential contamination of the atmosphere; but upon this point I must decline advancing an opinion. The months of March and April were hotter than is usual at that season of the year; but a week or two previous to the arrival of the fever of the pestilence, a strong east wind swept the town, accompanied by cold and damp weather. About the commencement of May I remarked an unusual prevalence of cases of English cholera, and one in particular attracted my attention. On the 12th of the same month the Board of Health announced the existence of the disease. I was present at a lecture delivered by Dr. Baird, in the Medical Library, to the members of the profession, upon several cases of cholera which he had witnessed about this time in Liverpool, when Dr. Traill informed me after lecture that there was a case in the district committed to our charge, belonging to a private practitioner, who politely permitted me to visit his patient. This patient died in the consecutive fever (as it is called), on the morning of the following day. Upwards of twelve days elapsed before I had an opportunity of witnessing a second case, and nearly twenty days before the third came under my care. After this period the disease prevailed over the district, and the cases multiplied rapidly.

Having made these preliminary statements, I shall now proceed to relate the facts upon which the observations I have to offer will be founded. Of one hundred cases, selected as they stand first on the list, fifty-five were females, and forty-five males. Under the age of ten years, there were sixteen persons affected; between ten and twenty, there were four cases; between twenty and thirty, there were twenty-one individuals; between the ages of forty and fifty, fifteen persons were affected; between fifty and sixty, nine were attacked; between sixty and seventy, eight cases; and between seventy and eighty,

only one case occurred. It may be here remarked, that the majority of cases occurred between the ages of thirty and forty. It has been frequently observed, that the aged were the principal victims of this disease; but as the greatest number of cases occurred in my practice between the ages of thirty and forty, I was somewhat at a loss to reconcile the apparent discrepancy in the evidences, between the recorded observations of other practitioners and the facts which presented themselves to me. However, upon examining the tables of mortality in my note-book, I found that my observations corresponded in a great measure with those of my predecessors. I have arranged the cases in a tabular form, for the convenience of reference. The first and second columns refer to the age of the patients; the third to the number of cases; and the fourth denotes the number of deaths.

| | | |
|---|---|---|
| 10 ..... | 16 ..... | 5 |
| 10 and 20 ..... | 4 ..... | 1 |
| 20 — 30 ..... | 21 ..... | 4 |
| 30 — 40 ..... | 26 ..... | 6 |
| 40 — 50 ..... | 15 ..... | 7 |
| 50 — 60 ..... | 9 ..... | 4 |
| 60 — 70 ..... | 8 ..... | 7 |
| 70 — 80 ..... | 1 ..... | 1 |
| Total..... | 100 | 35 |

It will be evident, therefore, from the inspection of this table, that although the greatest number of cases presented themselves in persons between the ages of 30 and 40, yet the amount of mortality was the largest between the ages of 60 and 80; for out of nine cases, only one recovered, and that person under 70. Between the ages of 20 and 30 the largest proportion of recoveries took place, which was about 73 per centum. The total amount of recoveries was 65, and there were 35 deaths; being a mortality of rather more than a third in the total number of cases.

It might here be remarked, that the great mortality (although nearly the average standard) would appear to imply professional mismanagement of the cases, or inattention upon the part of the medical attendant. I think it, therefore, but justice to myself to state, that a very large majority of the cases were treated under the greatest disadvantages. The patients resided principally in the most loathsome abodes of wretchedness, depravity, and vice,—in cellars polluted by prostitutes of the most abandoned class, and filled with filth and every abomination that the most abject penury could impose; — hot-bed of impurity and infection, the very idea of which is sickening to the memory, and which nothing but the imperative sense of the public duty committed to their charge, could have induced the medical gentlemen to enter! The magistrates ordered these places to be whitewashed and purified, but in a few days they were as filthy as usual. Many of these miserable people preferred their polluted abodes to the comforts of a clean and well-ventilated hospital. I visited some of these patients three or four times during *their* day—(for one day, or a few hours, generally settled their concerns with this world)—and I had the mortification of beholding the cloud of death gradually spreading over their countenances, uninterrupted by the administration of medicines, which, in a purer atmosphere, might have been attended with the happiest effects. Under these distressing circumstances, I am surprised that so many recovered.

I cannot leave this subject without expressing the satisfaction I felt at the benevolent operations of the District Provident Society—an admirable institution, founded by the Rector of the parish for the express purpose of supplying food and raiment to the victims of penury and want. This excellent Society co-operated with the honorary medical officers, and at their recommendation such relief was administrated to the survivors as their physical necessities required.

We shall cease to wonder, if in such places as these something like contagion did not present itself. It is not my intention to enter into a metaphysical disquisition upon the abstract question of contagion,—a subject which has afforded so much speculative amusement to the medical philosophers of the present day. I cannot, however, forbear expressing my surprise at a statement made by Drs. Hamett and Otto Daun, and attested by the British Consul at Danzig, that they had never found an instance in which persons affected with cholera had had any communication with each other. This, if I remember aright, was the substance of their declaration. The following facts relative to the communicability of this disease came under my observation. The profession may deduce their own

inferences from the premises. I shall probably take the liberty of attaching a few remarks, by way of observation, upon the doctrine of contagion, which the cases appear to demand.

*A* TABLE *of Twelve distinct instances of the apparent Personal Communicability of the* CHOLERA*.

No. 1.

*a*. M. A. M. died in the blue stage on the 18th June.
*b*. The husband of *a*, died in the blue stage June 21.
*c*. An attendant on the funeral of *a*, died June 21.
*d*. The nurse of *a*, attacked and recovered June 24.
*e*. The coffin-maker to *b*, attacked and recovered June 24.

No. 2.

*a*. Residing in a cellar, died June 19.
*b*. The wife of *a*, died June 23.

No. 3.

*a*. Attacked and died June 24.
*b*. The mother of *a*, June 25†. Died.
*c*. The father of *a*, June 25. Recovered.
*d*. The nurse of *b*, sent to the hospital, recovered.
*e*. The mother of *d*, sent to the hospital, recovered.

No. 4.

*a*. Died June 26.
*b*. Father of *a*, attacked with Dysentery June 26. Recovered.
*c*. The partner of *b*, attacked with cholera July 13. Recovered.
*d*. A carter, in the employment of *b*, attacked with cholera July 17. Died.

No. 5.

*a*. Attacked June 27. Recovered.
*b*. Sister of *a*, June 28. Died.

No. 6.

*a*. Attacked June 29. Died in the blue stage.
*b*. Husband to *a*, attacked July 25. Died in the blue stage.

No. 7.

*a*. Attacked July 7. Recovered.
*b*. Mother of *a*, July 8. Died.
*c*. Child of *a*, July 8. Died.
*d*. The father of *a*, July 10. Recovered.

No. 8.

(All inhabitants of the same house.)

*a*. Attacked July 6. Died.
*b*. Attacked — 10. Died.
*c*. Attacked — 11. Died.
*d*. Attacked — 12. Died.
*e*. Attacked — 12. Died.
*f*. Date of attack unknown. Died.

No. 9.

*a*. Attacked July 14. Died.
*b*. Wife of *a*, July 15. Died.

No. 10.

*a*. Attacked July 15. Recovered.
*b*. In the same house, July 22. Recovered.

No. 11.

*a*. Attacked June 23. Recovered.
*b*. The mother of *a*, July 12. Died.
*c*, The sister of *a*, July 25. Recovered.

No. 12.

*a*. Attacked July 28. Died.
*b*. Attacked August 4. Recovered.
*c*. In the next cellar, August 4. Recovered.
*d*. In the next cellar to *c*, August 7. Under treatment.

Now here is a mass of evidence relating to the subject of contagion. All the individuals were in communication with each other. No. 8 refers to the lamentable event of a whole family swept away in less than a week by the same disease. I was informed of the death of *f* by the surgeons of the Cholera Hospital. This patient resided in the same house with his ill-fated predecessors. I might multiply these instances of apparent contagion, but sufficient has been adduced to satisfy every reflecting and unprejudiced mind that something more than mere concomitant powers have been in active operation to produce this chain of morbid pheno-

* Any respectable member of the profession wishing to investigate the veracity of these facts, will be afforded every facility in my power to supply. A motive of professional delicacy, which I would willingly extend to the poor as well as to the wealthy, induces me to omit the names of individuals when not imperatively called for by peculiar contingencies or adventitious circumstances.

† This female was on the point of her confinement when attacked with cholera: she was delivered of a dead child, and expired herself a few hours afterwards, in the consecutive fever.

mena. It may, indeed, be stated that the same epidemical cause might have affected the same individuals at a given identical period; and that the time of the incubation and development of the morbific germs may have been arrested or precipitated by the idiosyncrasy of the individuals. My intention, however, is to state facts, and not to enter into a metaphysical speculation upon the abstract question of contagion; and although I have formed an opinion upon the subject, which I think future experience will not probably compel me to abandon, yet I do not think it expedient to state that opinion at the present moment. As a candid and unprejudiced narrator of facts and observations, relative to the communicability of this pestilential fever, I feel myself compelled to state that circumstances and cases have taken place exceedingly favourable to the propagation of the disease, in which no infection has followed. I shall relate one case to the point. I attended an elderly man on the 19th July, who died in the blue stage after an illness of about twelve hours. His wife was intoxicated during the day on which he died, and watched at his bed-side until the time of his death, which was in the evening. She then removed the dead body, and boldly entered the bed, sleeping between the same coverings under which her husband died. This person has not been infected up to the present date (August 10th), although a neighbouring female, who assisted her to remove the body, took the infection and went through the blue stage, from which she is now recovered. The neighbours informed me that the widow of the deceased had not been sober for a single day since her husband's death, and that "she did nothing but drink gin and eat gooseberries!" Whether we are to attribute her escape to the insusceptibility of her constitution, or to the permanent stimulus of the spirit, administered in almost perpetual potations, I shall leave the curious in these affairs to determine; but I think it will be generally allowed that the prophylactic virtue cannot be attributed to the gooseberries.

During the three months that this disease has prevailed in Liverpool, I have experienced in my own person almost perpetual annoyance from symptoms of gastro-enteritic irritation. From a constant communication with the sick, I was frequently affected with nausea and vomiting, occasional febrile excitement, headache, and wandering pains in the muscles. One evening I had sat by the bed-side of a poor person, watching the gradual progress of dissolution, and administering with my own hand brandy to the patient. I left her in the last stage of the consecutive fever, in the momentary expectation of her demise. The body exhaled an odour of an indescribable character, peculiar to this fatal disease. I retired to my study at that late hour, for the purpose of arranging some private papers, when I suddenly felt a sensation of pungent pain in the stomach, attended with nausea and dark mental despondency, as if a gloomy cloud had suddenly overshadowed the faculties of my mind. At this moment a rap came to the door, and I was informed that a messenger had arrived announcing my patient's death. Having transacted the business of the evening, I retired to rest, having first taken two glasses of Madeira, in the hope of banishing the distressing sensation from the stomach. It was then midnight. I was awakened out of a tumultuous slumber about half-after two in the morning, by an acute pain in the centre of the feet, as if some dislocating power had been applied. The toes were so severely cramped that I was obliged to replace them in their proper position with my hand. The nausea also had increased to faintness, and it was speedily followed by a profuse watery evacuation from the stomach, of a sweet and unpleasant taste. The vomiting was succeeded by several copious fluid dejections; and, finding how affairs were proceeding, I took two grains of solid opium and about six of camphor, which were washed down with a dose of strong brandy and water. The medicines arrested the disease. I prevented the recurrence of so serious an attack by the prudent use of port wine, the sulphate of quina, and strict attention to diet.

Having already exceeded the limits assigned in your journal to original communications, I must abruptly conclude by stating that I may, at an early period, again trespass upon your indulgence, by entering into a physiological examination of the symptomatic modifications of the fever of the pestilence. I shall also take the liberty of making a few practical observations upon the

comparative value of the different modes of treatment, and of the efficacy of the medicines employed in the different stages of the prevailing epidemic.

Liverpool, August 10, 1832.

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## HINTS ON THE SALINE TREATMENT OF CHOLERA, &c.

*To the Editor of the London Medical Gazette.*

Sir,

I hope you will allow me, in as few words as possible, to offer two or three suggestions on the treatment of cholera, which I have withheld for several months, in deference to the crowd of correspondents who appeared to be waiting for admission, and who, I was aware, had prior claims to your notice.

1. Would it not be an improvement on the present mode of administering the saline remedies proposed by Dr. Stevens, to give them in a state of effervescence, as in the following formula?—

℞ Sodæ Bicarb. ʒiv. Sodæ Mur. ʒiij. Potassæ Chlorat. gr. xxx. to xl. Aq. Puræ, f ʒvj. M.

℞ Acid Muriat. pur. ♏xc. Sp. Ether Nit. ʒiij. Aquæ Pur. f. ʒvss. Misce.

An equal quantity of each to be mixed, and given in a state of effervescence. Two table-spoonsful will contain the usual dose. The acid neutralizes about a fourth part of the bicarbonate of soda.

2. Sulphuric ether is sometimes prescribed in cholera; but I would suggest that the *nitric* should always be preferred, from its decided tendency to promote the urinary and cuticular secretions. Perhaps the muriatic ether may be still better; its properties appear to be very similar to the nitric. No preparation of it being admitted into our Pharmacopœias, it is seldom prescribed, but it is a favourite medicine with a few practitioners (under the form of Clutton's febrifuge spirit) in fevers of a low type.

3. Is not the supposed efficacy of chlorate of potash in this disease mainly attributable to its *diuretic* property? Are not its medicinal effects precisely similar to those of nitre?

4. The common aperient salts (Epsom and Glauber) are still in daily use in places where the cholera prevails, notwithstanding they have been denounced by the Board of Health, and other authorities. Might not those artificial Cheltenham, and other compound salts, which contain muriate and carbonate of soda, in combination with the sulphates, be safely recommended as a substitute to those who prefer saline aperients? Such compound salts as possess an effervescing property, and contain an excess of carbonated alkali, seem peculiarly eligible. The following is a formula of this kind:—

| | Parts. |
|---|---|
| Dried Sulphate of Soda ... | 20 |
| ——— Magnesia | 10 |
| —— Muriate of Soda ... | 30 |
| —— Bisulphate of Soda | 10 |
| Bicarbonate of Soda..... | 7½ |
| Proto-sulphate of iron ..... | ½ Mix. |

Dose, a tea-spoonful in a glass of warm water.

That the use of such an aperient should be not merely safe, but possibly in some measure a preventive, is in accordance with the saline theory of Dr. Stevens, the analysis of choleric blood, and the testimony of the physicians at Moscow, that those persons who took a course of artificial mineral waters escaped the cholera when it prevailed there.—I am, sir,

Your obedient servant,

H. B.

August 11, 1832.

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## REMARKS ON THE STRUCTURE OF THE PLACENTA, AND THE STATE OF THE MATERNAL VESSELS.

By John Burns, M.D. F.R.S.

Regius Professor of Surgery in the University of Glasgow*.

In a former paper, I described some of the preparations, in Dr. Hunter's museum, intended to illustrate the structure of the placenta: I will now offer a short account of the appearance of the parts in their recent state, which will give more satisfactory information than can be derived from the inspection of preparations. Having this week, by

* The date of this shews it is not in answer to Dr. Lee's paper: see our Number for August 4. It was sent to a gentleman who had left London, which led to the delay.—Ed. Gaz.

the kindness of a friend, obtained the uterus of a woman who died in the end of the sixth, or beginning of the seventh month of pregnancy; I carefully injected both its arteries and veins, but not those of the fœtal or umbilical system. I then, with the assistance of Dr. Lawrie and Mr. Rainey, and in presence of several other gentlemen, opened it in the university. Dr. Jeffrey afterwards saw the parts.

The uterine arteries were numerous, tortuous, and as large as stocking wires. The veins, or sinuses, varied in breadth, from a quarter to five-eighths of an inch.

On separating the decidua and placenta from the uterus, the arteries were found to be passing in great number into the decidua, and through it, in all the district of the placenta. They continued of the same size as in the substance of the uterus, and formed coils, some of which were half an inch long. Then they opened into the substance of the placenta, either terminating on its surface, or barely entering into its texture*. They at once ended in, or opened into, the cells of the placenta, which were finely filled with grains of injection all the way to the fœtal surface. A section exhibited no appearance of extravasation, even when examined with a glass, but the surface was distinctly granulated.

The portion of artery between its exit from the uterine parietes and its termination in the placenta, or the coil, was not of the same texture as an artery in other parts, but the coats were, like the decidua, soft and thin†.

The sinuses, like the arteries, proceeded from the internal surface of the uterus, but did not pass perpendicularly through the decidua, or go straight and directly to the placenta: they ran more or less obliquely, and for a greater or less length, between the uterus and placenta, or membranes; sometimes for considerably more than an inch; and one sinus, nearly three inches long, skirted to that extent the margin of the placenta. Many of these sinuses were so well filled, that although altogether within the uterus, they, from elevating it externally, appeared as if contained in its substance.

The continuation, or tract of the vein or sinus, after leaving the uterus, and entering the decidua, varied in breadth from a quarter to half an inch. The coats were thin and soft, as if the injections were contained in a canal, formed between, and by two layers of decidua.

On tracing a sinus to its termination, on the surface of the placenta, it was found, like the artery, not to enter as a trunk, but to end by application to the cellular structure, which was distinctly injected from it.

Hence, a section of a lobe of placenta exhibited throughout a granulated surface, the colour of the arterial or venous injection predominating according to the set of vessels which had been best filled.

Intermixed with these injected cells was a quantity of fibrous-looking substance, of a red colour, consisting chiefly of the terminations of the uninjected fœtal vessels, which were very numerous and minute in their subdivisions. This dissection proves distinctly the intimate structure of the placenta to be, as Dr. Hunter supposed, cellular in the maternal portion, and arborescent, or branching, in the fœtal portion. It proves the existence of intervening portions, of soft canals, going from the openings of the arteries and veins, on the inner surface of the uterus, to the cells of the placenta. These canals, when injected, may be left attached, either to the uterus or placenta, but are with equal readiness separated from both. We cannot trace them, as trunks, into the placenta, for they terminate in cells, which they cover; neither can we always expect to find them adhering to, or projecting from, the uterine or placental surface, being so easily broken or brushed off. It also illustrates the readiness with which uterine hæmorrhage may be produced, by the rupture of one of these fragile portions, especially of the sinuses. Strength and defence are afforded by the intimate adhesion of the ovum to the uterus; but if separation take place the vessels are left unsupported; and if not necessarily torn in the act of separation, they must be soon ruptured, and blood will be discharged. The coils of the arteries may

* I do not know, from examination, whether, at an earlier period of gestation, the vessels may not penetrate farther.

† In a strict sense, we should say that neither the uterine arteries nor veins passed beyond the parietes of the uterus. The canals, which continue the circulation, are new formations, and of quite a different nature.

also render them less apt to be torn by any pressure on the uterus, or change of shape produced.

Any great diminution of size of the uterus, and contraction of its fibres, must tear the connexion with these delicate vessels; and therefore, after the delivery of the child, the secundines are easily thrown off, although large vessels pass between the womb and placenta.

As a considerable portion of decidua remains attached to the surface of the uterus after the placenta is expelled, and as fragments of those vessels are contained in it, and blood coagulates in these, as well as in the decidua, we find that after delivery the uterus is lined with a pulpy-looking tenacious coating, of a dark colour, which has sometimes been mistaken for slough or gangrene. This coating lessens the risk of hæmorrhage.

An important subject still remains for investigation — namely, the process by which the blood circulates through the deciduous portions of vessels, and in the cells of the placenta.

Glasgow, July 28th.

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## ANALYSES & NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

*The Sources of Health and Disease in Communities; or, Elementary Views of "Hygiène," illustrating its importance to Legislators, Heads of Families, &c.* By HENRY BELINAYE, Esq. Surgeon Extraordinary to Her Royal Highness the Duchess of Kent, &c. &c. 1832.

THIS is one of the most interesting little volumes that we have seen for some time: the subjects of which it treats are of vital importance, and the mode in which it treats them is brief and to the point. Mr. Belinaye has done well in discussing and laying before the public the topics which we find here, apart from the vast variety by which they are commonly surrounded in the best-known books of medical jurisprudence: medical police and *hygiène* demand a separate and special degree of consideration.

In the first chapter several curious items are noticed, such as the supposed influence of the planets, and the sun and moon—the difference of season—the effects of the presence and absence of light, and so forth; but the second and third chapters are on a subject—the Laws of Propagation—which is particularly attractive. We must make a few extracts.

"With respect to the present subject, there are only a few points which legislation can reach. On all others, therefore, such instruction should be imparted, as may enable conscience and religion to supply its place. There is another power, of which we wish we could command the aid,—which consists of the caprice of fashion in the rich, and blind imitation in the vulgar. Through its medium, J. J. Rousseau was enabled to compensate for the injury done to society by the immoral tendency of his writings. Having previously captivated the minds of his contemporaries, by the seductive charms of his "Nouvelle Héloise," and by his other writings, he produced the most salutary revolution in the physical education of the youth of his time.

"The physical improvement or degradation of the race of man, like that of animals, appears to work, or revolve, chiefly on this one great principle—inheritance. Let philosophers revolt at the doctrine of the inheritance of evil, of which religion establishes the belief—or at that of property, which legislation has consecrated—it is certain, that inheritance, whether of good or of evil, is the universal law of nature. If we look at a succession of men, nearly related—like the first series of the Roman emperors, so often cited—we find, if we may venture on the comparison, the same resemblance of feature (in their statues), and of disposition (recorded in history), that an Arab will show in the pedigree of a favourite horse. The noble features of better princes—those, for example, of the house of Lorraine, now reigning—no less resemble the portraits of their ancestors. Singular tribes of men, like the gypsies, have roamed throughout the world for centuries, unchanged in their lineaments, in spite of their intercourse with so many different nations—because habits, or laws, kept their marriages exclusively within their own caste.

"Unions of individuals of different

races greatly influence the breed. And, first, it alters the breed. Of this we have a striking instance in the union of the white and the negro. The mulatto, who derives his origin from the first admixture of races, is both whiter, his hair less woolly, he is straighter limbed, and at the same time more intelligent, than his African mother—the distinctive characteristics of the primary race continuing to diminish at each remove, although the creole will be able to tell you at first sight how many degrees one of the hybrid race is removed from his first origin.

"Union of individuals of different races improves the breed, and, as we shall presently repeat, increases the number of male offspring,—a circumstance which is always a proof of vigour, and a source of superiority. An abhorrence, we might call instinctive, pervades mankind with regard to marriages betwixt near relatives. Although at first prevalent, from necessity, for the increase of the species, it has justly fallen under the anathema of the Canon law, for it tends to the degeneracy, physical as well as moral, of mankind. Some tribes still inhabit the earth, among whom marriages betwixt near relatives take place: their women are comparatively barren, and their progeny dwarfish. If we select similar examples in modern times, either in this or in Catholic countries, where dispensations are granted for marriages betwixt persons nearly related; or if we refer to passages in ancient history—to the age of the Ptolemies, for instance—we find they no less generally afford grounds for animadversion."

On the subject of Hereditary Diseases, what our author says is very rational:—

"It is a difficult thing to decide what hereditary diseases should be a bar to matrimony. Madness, present or threatening, with some others, are palpable obstacles—entailing present misfortune on the married pair, and the probability of future evil on society. It is not less true, however, that pregnancy has been found to be (in some cases) a cure for madness.

"Consumption, as a disease which may be arrested during pregnancy, only to put a term to existence soon, and inevitably, afterwards, should be an insurmountable obstacle in every well-regulated mind.

"Epilepsy, as a transmissible disease, has been considered by many medico-legists, as a legal obstacle to marriage; yet some of the greatest men have been epileptic.

"It is a misfortune, that many of these hereditary maladies produce in the afflicted individuals a strong inclination to the married state; and some of them are thought to impart to women a far greater facility of conception. The sensual inclinations of idiots are well known, and the consumptive are observed to have, in general, a violent propensity towards that passion by which the species is perpetuated,—a propensity which, when yielded to, not only hastens their own death, but leaves the deadly germ behind.

"By suitable choices in marriage, the proneness of a race to disease may be diminished: the youth and strength of the woman will certainly wonderfully modify the offspring. One of the finest-formed women we ever saw, was the daughter of a nobleman of sixty-five years of age, formerly noted for his dissipation, and a martyr to its consequences; she was a young lady unusually developed in strength, fifteen years old."

The subject of the probable causes of the occasional preponderance of males or females, is well introduced:—

"Thoughtless persons are apt to attribute to what they vaguely call chance, or the caprice of fortune, what is really the most admirable manifestation of a paternal Providence. The success and riches often obtained by men of inferior abilities and means, furnish an example of the justice of an all-wise Creator; in the same light may we behold the unions which occur between the gifted and the inferior among the human species, the ugly and the handsome. Some unexplained sympathy, some irresistible attraction, unites them; and by these means is the human race improved. Were there not some powerful counterpoise, the arbitrary fancies of human caprice would soon erect a barrier, and the ugly and unattractive be as effectually excluded, as though nature had set upon them a sign of reprobation.

"The Christian religion, by consecrating monogamy as the law of the faithful, not only promoted the surest means of civilization, but also of the increase and physical improvement of the human race. Marriage, thus hallowed by the most enlightened of sys-

tems, produces, in its turn, all the elements necessary to the civil governments of states, and to their physical strength, — an effect which no other union of the sexes can achieve. But to obtain these results, there must be a freedom of choice, and certain physical conditions, observed in the conjugal compact, most of which fall within the scope of our particular views.

" Recent inquiries appear to lead to the conclusion, that, according as the strength predominates in the father or mother, the child will be male or female, and that infirm fathers generally give life to female offspring *. It would appear also, that in the great number of those hot countries where polygamy obtains, the number of female children greatly predominates; the fecundating power of man is too much divided— his wives are sterile, or have a larger proportion of female issue. The proportion, so general and useful, in Christian countries, of twenty-two men to twenty-one women, does not exist there. While all efforts towards civilization are abortive, and the influence of woman on society is lost, it is not strange to see such communities remaining, as they do, for ever barbarous and stationary.

" Should our remarks on the birth of females from debilitated fathers, appear to want confirmation, we may appeal to the analogy of comparative physiology. In the animal kingdom, do we not see more cows, ewes, hens, &c. than corresponding males of the respective species? and the reason is to be found in those habits that correspond to polygamy among mankind.

" A reason has been before stated for the extinction of great families,—the facts first mentioned may explain, perhaps, why they so often terminate in one female scion."

It is very difficult to make a selection where there are so many striking topics to attract the attention. We observe many remarkable passages in the chapters on Emanations and Effluvia, which we had marked as well worthy of being extracted, if our narrow limits would allow. It is almost *par hazard* that we pitch upon the following among them :—

" In the large towns, a great improvement has been introduced in the streets —that which is called *macadamization* ; but if care be not taken to remove, during wet weather, the loose mud of the surface before dry heat and the friction of carriages turn it to powder—if, during dry weather, the surface be not regularly watered, and that sufficiently to keep down the dust, during the whole of the day—if these precautions, we repeat, be not taken, the fearful annual average of deaths from diseases of the lungs, in the bills of mortality, will be inevitably increased by the irritation which the powdered granite borne in the atmosphere, must necessarily engender in the respiratory organs.

" Although not strictly within the limits of our present subject, we shall take this opportunity of observing the danger incurred by delicate persons going out in the evening of a hot day, when large macadamized streets are watered. The cold and dampness of the atmosphere produced by the evaporation, may prove very prejudicial."

Treating of vegetable perfume, our author says :—

" To ' die of a rose, in aromatic pain,' is an idea that loses some of its facetiousness, when we really find some young women (for example, the daughters of Nicholas I. Count of Salin, and of a Polish Bishop, &c.) dying immediately after respiring the perfume of some heaps of those flowers, or of violets.

" The rooms in which flowers are most diligently amassed by our ladies of fashion, are generally the smallest; it is in the elegant penetralia of the boudoir that they shut them up. The heat there is favourable to the rapid elicitation of odour from the dying plant —the atmosphere is scarcely disturbed by a current, and seldom renewed— whilst, in their natural situation, the cooler air moderates the evaporation, and its undulation wafts towards us a diluted fragrance."

" We shall not expatiate on several other emanations, comparatively unimportant, but no less curious, and in some

* This rule, like many others we might mention, admits of innumerable exceptions. Natural laws are only cognizable to the philosophical student, in a field of wide and prolonged observation. They do not enable the finger of malice to point at particular instances, or afford aliment to conjugal recrimination. The Supreme Being, in the most healthy and moral of communities, has reserved to himself the manifestation of his will—and thus, while we see one family producing only sons, and another only daughters, in spite of the irregularities of numbers, the general proportion is still observed.

instances of beneficial operation on the human frame—such as those arising from fresh meat, and other articles of food, to which our butchers and victuallers are supposed to be partly indebted for their portliness and good looks—singular instances, if well-founded, of the control exercised on our bodies by surrounding media."

We cannot but make room for the following:—

"It appears often sufficient to confine men within a small space, without adequate air, exercise, food, &c. to produce a contagious fever, sometimes of the most fatal character known.

"A sick deserter was concealed in a small cavern in the south of France, where the only air admitted was by a small door. Fourteen persons administered charitably to his wants during the twenty-one days that he lived: all these persons fell sick, and eight died. The reader has probably read the accounts of the Black Assize at Oxford, in July 1577. Many of the persons present in the court, when the sentence was passed, were struck by a deadly disease from the pestilential exhalations of the prisoners. At Exeter, in 1586, and at Taunton, in 1730, from similar causes, the same evil occurred. In 1750, the contagious jail fever, brought into the court of the Old Bailey by the prisoners from Newgate, produced cruel ravages amongst the audience; and, amongst other eminent persons, proved fatal to the Lord Mayor and two Judges. It is well known that the greatest mortality occurs in ships when they are carrying out troops without commensurate accommodation.

"We must here offer an important reflection on the above facts. We know that, by slow degrees, the human system accustoms itself to poison—whether those deleterious substances, such as opium, tobacco, &c. which are habitually masticated by the inhabitants of different countries, or those which the medical man administers to combat dangerous diseases. It is not otherwise with respect to morbid poisons. Placed in an atmosphere growing every hour more vitiated, a prisoner will live comparatively scathless. The deadly halo that surrounds him will only be discovered when he comes forth apparently well, and mixes with his fellow-creatures, whose lives are thus sacrificed. In a healthy community, let a person weakened by extreme poverty, debauchery, and filth, be attacked by a fever, it may assume at once the most malignant character, and contagion arise, spreading rapidly to adjacent persons. Generally speaking, the atmosphere of disease only extends a few feet round the patient, and, with a little prudence, and recourse to anti-septics, the sick may be approached with little fear of consequences; and there is no plea, even founded on egotism, to justify neglect of the sufferer. It is far otherwise, however, when many members of a family are united in the same room, as occurs amongst the poor, with no renewal of the air of the room. The atmosphere occasionally becomes so impregnated and altered during contagions and epidemics, that persons free from the reigning fever, and labouring under other diseases widely differing, will still require a modification of the treatment generally adopted in their different disorders.

"The atmosphere once taken possession of by a reigning disease, every shade and degree of that affection will appear in different persons. The slighter degrees not showing so decidedly the characteristic features, by neglect or mistaken treatment a slight and ephemeral indisposition may be converted into an attack of the greatest degree of malignity."

The last chapter of Mr. Belinaye's book is on Civilization as a Source of Health or Disease, and abounds with topics of an interesting nature.

We cannot conclude without bestowing some share of praise on the manner as well as on the matter of the volume. It is written in a style well calculated to set off the importance of the subjects treated; it is always graceful, and often eloquent.

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# MEDICAL GAZETTE.

*Saturday, August* 18, 1832.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."—Cicero.

## COLLEGE OF SURGEONS AND THE IRISH EXCLUSIONISTS.

Some months ago we had occasion to offer a few remarks on the Irish Grand

Jury Bill—more particularly that part of it which contained a cunningly-devised clause, entailing exclusion from certain sources of fame and emolument on all who were not members of the Irish College of Surgeons. That Bill has never passed into a law, having been cushioned and thrown aside after conferring only disgrace upon its framers. The stamp of its base nature was too glaringly fixed upon it, to allow it to be made available for its sordid ends. Even the leading Irish members of Parliament, some of whom would be ready enough to advocate any system of exclusive dealing in favour of Ireland, provided it were not absolutely odious, and calculated to defeat its own purpose, became ashamed to afford it their countenance and support. Petitions from aggrieved individuals were laid before the House; and some of the correspondence connected with the presentation of those petitions has happened to come under our cognizance. We shall quote a few passages. It will be observed that the writers take up the matter on a wide but equitable principle.

The member for Limerick (Mr. Spring Rice) proceeds to say, "I am aware that the professional education of Ireland is of a most liberal kind, and that our national schools of surgery and medicine have produced most distinguished and able men; but on that very account am I convinced that no restrictive measures are necessary; and I am certain that the best interests of the community will be best advanced by having all medical appointments open to the freest competition, and thus affording a full scope to individual exertion, and the best reward to high character and attainment." The member for Tipperary (Mr. T. Wyse) says, "I have long thought a complete reform was necessary in this, as in most other departments of the state. I think none would more benefit the cause of humanity, and the interests of all classes, than a new and comprehensive Infirmary Bill, framed in the liberal spirit, and on the enlightened principles, of the present age." The members for Mallow, and Cork, and Kilkenny, express themselves to the same effect; and even Mr. Stanley, the Secretary for Ireland, confesses "that the existing law appears to require much amendment."

The result of these and similar demonstrations of the objectionable nature of the Bill was, as we have said, to cause it to be thrown aside; but the spirit that originated the measure did not sleep: the exclusion which was sought to be confirmed by the Grand Jury Bill continued, and still continues, to be practised in all its disgraceful features of illiberality. A strong re-action has been the natural consequence, and has given birth to the following petition, which so well sets forth the chief points complained of, that we have no hesitation in giving it at length:—

"*To the Right Honourable and Honourable, &c.—The Petition of the undersigned Irishmen, Members of the Royal College of Surgeons in London, Graduates in Medicine, &c.*

"Humbly sheweth,

"That your Petitioners are Irishmen, who have enrolled themselves Members of the Royal College of Surgeons in London; a body whose members are esteemed all over Europe as the first surgeons in the world; whose members possess the confidence of Great Britain to such an extent that they are the surgical attendants upon the dearest objects of Britain's esteem—her sovereign, her sailors, and her soldiers: yet are the members of this body who reside in Ireland oppressed by an unjust law of the late Irish parliament, which incapacitates them from having the care of Irish County Infirmaries: and your Petitioners complain of this unjust exclusion, not on account of the peculiar value of those institutions, but because the fact of their exclusion tends to depreciate their professional character—an exclusion,

the absurdity of which is manifest from the fact that, though excluded in Ireland, they need but cross the Irish channel to become competent to the highest professional distinction in England;—a state of things which appears perfectly anomalous to all those who believe the interests of the two kingdoms to be identical, and is in direct opposition to the principle on which the legislative union of the two countries depends. Your Petitioners, therefore, beseech your Honourable House to remove this disability.

"Petitioners remind your Honourable House, that when this act was passed by the Irish parliament, the present Royal College of Surgeons in London was not in existence; and that therefore the exclusion of its members could not have been contemplated by the Irish parliament, whose act was passed for the sole purpose of securing the Infirmaries against men who had no qualification whatsoever, as is apparent from the very wording of the act, which seems to imply that the qualification of the Dublin College would be sufficient, and that 'no other qualification should be necessary;' which evidently means that the Irish parliament was well aware that other qualifications were as good, but, as Ireland was then a distinct kingdom, they relied for surgeons upon the Irish College; not contemplating that at any future period it should occur that members of the English College would reside in Ireland, whereas, since that period, the Irish College has so increased the expenses of its system of education, for purposes to which Petitioners shall not now allude, that several hundreds of Irishmen have been induced to become English surgeons, to avoid the payment of the enormous fees required in Dublin.

"They pray that your Honourable House will devise some means of removing those distinctions which oppress one class of surgeons and make monopolists of the other. Your Petitioners seek it as an act of justice which should and will be granted by a British parliament, because the union of the two countries requires it—a union whereby it was pledged that we should be as one nation; whereas a distinction is thus allowed to exist that does not exist even between Great Britain and the United States of America.

"And your Petitioners will ever pray."

The signatures are too numerous for insertion; but we may observe, that they include a large proportion of the *elite* of the medical and surgical profession in the sister country.

Now here, we must take leave to say, that this is no mere Irish question—no question that merely involves the interests of resident practitioners in Ireland; it is one that immediately affects the character and extent of privilege of the London College, and the protection which that establishment is able to afford to its members. Four or five hundred surgeons, provided with the diploma of the institution in Lincoln's-Inn-Fields, are practising their profession in Ireland; but they are excluded from the best rewards that should await their successful exertions in their practice, by the antiquated regulation of a rival body. The County Infirmaries are reserved for the scions of the Irish College.

But it is but natural to inquire why this should be; upon what reason the exclusionists rest their supposed privilege? Upon their superior merit? Although we have heard of some such silly assumption occasionally set forth, we can hardly fancy them so absurd as to set up such a claim seriously: none but their greatest enemies would expose them to such ridicule;—but we have said something on this point on a former occasion, and think it needless to revert to it again. Have they in these Infirmaries an eleemosynary endowment for pensioning off their quondam apprentices? Impossible they should assert such a claim with any show of common sense. They will not, surely, have the meanness to rest their pretensions on so humiliating a score, though now pretty familiar with the charge of

making those Infirmaries a *quid pro quo* for the enormous apprenticeship-fees taken by their leading members.

The only plea, then, that remains is, the impudent one of insisting upon *their rights* — rights that originated in no dishonourable or exclusive feeling, so far as we are aware, but which are maintained with all the pertinacity and narrow-mindedness belonging to both.

Another consideration is this. The Irish College has, or it has not, produced wonderfully clever surgeons. If it has, why should they dread a competition with their brethren of the College here,—especially as that competition is to be maintained on their own ground, and, we believe we may add, with their own countrymen only? If it has not, it is rather "too bad" that such good things should be set apart for people that are no better than their neighbours, and who have no specially good right to show to establish their claim to them in these much-famed days of liberal opinions.

If, however, the fact be, as we believe it is, that the Irish College turns out surgeons who are no such wonderful phenomena, and yet these special favourites and exclusives are put into places of high trust and great emolument—to the exclusion of others, at least equally competent—how unjust is the whole proceeding! and how injurious must be the consequences to persons situated as the Petitioners, for example, are! They have no fair play: they are labouring under unreasonable disability; and they are degraded in the eyes of the public. The public is imposed upon; and a monopoly of the most unjustifiable description—to the great disgrace of this age of boasted enlightenment—is maintained.

We have been pointing out, latterly, various circumstances which we conceived to be legitimate objects for medical reform — here, then, is one that must be "reformed altogether," as being founded in ignorance—nurtured by a spurious nationality—and supported in a spirit of gross injustice and illiberality. It is utterly impossible that any Parliament of honest legislators can suffer such a system to be perpetuated—can allow so absurd a system to pass uncorrected and unredressed; but, at the same time we must add, that we think it will require on the part of the Petitioners, and all who feel interested in the triumph of justice, to persist in stating fairly their grievances, and to "pull all together," until this fabric of empty pretension and impudent exclusion be levelled with the dust. All their efforts, we suspect, will be required; for the obnoxious party, grown strong by their perseverance in their system, and bronzed by their habit of defending it, are not to be dissuaded or diverted from insisting upon *their rights*; — as to making concessions, with an honest grace, that is utterly out of the question; for, from some circumstances which have lately come to our ears, we understand that they are even now pushing their exclusive proceedings equally far in another most unblushing respect. Of that, however, more anon, when we shall have all the facts before us for an honest *exposé*.

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## BILLS OF MORTALITY.

We are glad to perceive by these returns, that there has been a considerable decrease in the number of deaths (or burials, more correctly), in London during the last week. We have thought it advisable to give an abstract of the last "Bills," in another page; and we purpose sparing them a similar corner every week; for we are rather inclined to think that these venerable documents do not by any means merit that neglect with which they have been but too long treated. At all events, the attention of the public may lead to their improvement.

## M. ORFILA.

M. ORFILA is still in a very precarious state, after his severe attack of cholera. The treatment adopted towards him was of the most energetic description; from the very effects of which it would require some time and powerful stamina to recover. His *morale*, however, as his physicians report, is perfect; and we learn, by the latest accounts, that there are several favourable symptoms now about him.

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## REJOINDER OF DR. GRAVES.

*To the Editor of the London Medical Gazette.*

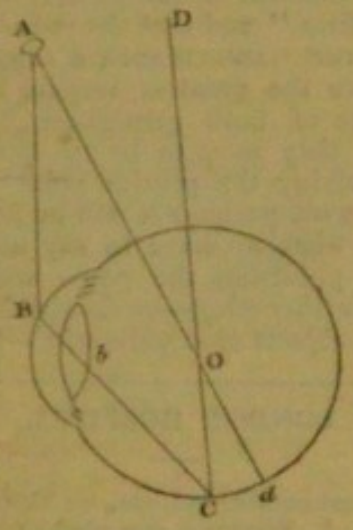
9, Harcourt-Street, Dublin,
August 9, 1832.

SIR,

I REGRET that your observations, published in the Medical Gazette, August 11th, require further notice on my part, as the point at issue between us has already occupied but too much space in your valuable journal. You say, "We had our doubts before—when penning our former remarks—where exactly the weak point lay in the Doctor's argument. Of the insufficiency of the whole, we had no doubt; but now we think we can expedite the matter, and shew, without difficulty, in what the mistake into which Dr. Graves has fallen consists."

"He assumes that the line of visible direction—or the perpendicular on the retina, at the place of the image—is not coincident with a line drawn from the object through the centre of the eye. Now we, with great respect for the opinions of Dr. Graves, affirm that it is."

This assertion of yours, Mr. Editor, is synonymous with asserting that all objects seen by the eye are seen in their true direction; for when the line of visible direction is coincident with the line drawn from the object through the centre of the eye, the object is of course seen in its true place. In a letter to me, upon the subject of the relative position of objects and their images on the retina, Sir David Brewster speaks of this very point *in the following words*:—"It is not true that all objects seen by the eye are seen in their true directions. The relation between the true and the visible directions is only that of parallelism. The true and the visible direction coincide only for rays that suffer no refraction—that is, for the single ray which passes along the axis.




Let A B be the direction of an oblique ray refracted into B C by the cornea and crystalline; then C O D will be its visible direction, *differing greatly* from A O *d*.

"Now it is a curious physical law, that as the incident ray A B passes from its extreme position of obliquity, to a position coincident with the axis of vision, the angle of refraction, or that corresponding with the last portion, *b* C, of the refracted ray, must be always the complement of the angle *b* C O, or that which the refracted ray forms with the direction in which it excites vision. Without this relation, the visible and true directions could not be parallel."

The above, Mr. Editor, are Sir David Brewster's words. The figure is also an exact copy of his. In a paper I have prepared for the November number of the Dublin Medical Journal, I have treated this subject more at large, and shewn that, for objects at *an infinite distance, viewed obliquely*, other considerations are necessary, in enabling us to arrive at a *general law*, capable of expressing the relation between their real and apparent directions. My experiments, however, only relating to

near objects, this law does not bear on the present question.

I have the honour to be, sir,
Yours very truly,
ROBERT J. GRAVES.

[In a more recent letter, Dr. Graves suggests that Sir David Brewster intended to have said, in the second sentence of the extract given above, "that the relation between the visible direction and the direction of the axis of a pencil of rays incident on the cornea, is that of parallelism," and that the remainder of the extract warrants such a suggestion. We have the greatest respect for the opinions of both gentlemen, opposed though they seem to be to our own: but touching the precise point at issue between us, perhaps it will be better to reserve what we have to say until Dr. Graves publishes the paper which he says is forthcoming—on the visible direction of objects seen obliquely.—E. G.]

## LONDON HOSPITAL.

IN our last number but one, we should have said Dr. A. Frampton was elected *Assistant* Physician, not Physician.

## VETERINARIAN STATISTICS.

*To the Editor of the London Medical Gazette.*

SIR,

WILL you permit me to ask your readers if they can afford me any information on all or either of the following points; viz. the average quantity of grass or hay consumed, in a given time, by any given number of sheep, or oxen, or horses; and the average age at which the two former are slaughtered for human food, by which the quantity they have previously consumed may be calculated.

I have the honour to remain,
Yours obediently,
G. T. B.

August 13, 1832.

## MORBID ANATOMY.

*(From a Correspondent.)*

WE are happy to find that Dr. Carswell is at length about to publish Elements of Morbid Anatomy, illustrated by a selection from his almost numberless drawings. Such a work is still wanted in English medical literature, and we have reason to think Dr. Carswell's mode of treating the subject will be at once original, practically useful, and not too expensive.

## WEEKLY ACCOUNT OF BURIALS,

*From the "Bills of Mortality," Aug. 14, 1832.*

| | | | |
|---|---|---|---|
| Age and Debility | 38 | Inflammation of the Brain | 2 |
| Apoplexy | 5 | Lungs and Pleura | 3 |
| Asthma | 8 | Liver, Diseases of the | 7 |
| Cancer | 2 | Measles | 12 |
| Childbirth | 7 | Miscarriage | 2 |
| Cholera | 103 | Mortification | 4 |
| Consumption | 65 | Paralysis | 4 |
| Convulsions | 41 | Rheumatism | 2 |
| Dentition or Teething | 5 | Scrofula | 1 |
| Dropsy | 16 | Small-Pox | 22 |
| Dropsy on the Brain | 14 | Sore Throat and Quinsey | 2 |
| Erysipelas | 1 | Spasms | 4 |
| Fever | 10 | Stricture | 1 |
| Fever, Scarlet | 4 | Thrush | 3 |
| Fever, Typhus | 8 | Tumor | 1 |
| Fistula | 1 | Worms | 1 |
| Hæmorrhage | 1 | Unknown Causes | 3 |
| Hooping Cough | 7 | | |
| Inflammation | 29 | Stillborn | 12 |
| Inflammation of the Bowels & Stomach | 24 | | |

Decrease of Burials, as compared with the preceding Week . . . . . 179

## METEOROLOGICAL JOURNAL,

| *August* 1832. | THERMOMETER. | | BAROMETER. | |
|---|---|---|---|---|
| Thursday . 9 | from 49 | to 79 | 30·03 | Stat. |
| Friday. . . 10 | 53 | 81 | 30·05 | to 30·13 |
| Saturday . 11 | 54 | 77 | 30·15 | 30·19 |
| Sunday . . 12 | 50 | 72 | 30·17 | 30·02 |
| Monday . . 13 | 45 | 76 | 29·95 | 29·89 |
| Tuesday . 14 | 47 | 76 | 29·84 | 29·85 |
| Wednesday 15 | 53 | 73 | 29·86 | 29·84 |

Wind, S.E. and S.W. the latter prevailing.

Except the 13th, generally clear; a few drops of rain in the morning of the 13th.

CHARLES HENRY ADAMS.

## BOOKS RECEIVED FOR REVIEW.

The Effects of Arts, Trades, and Professions, and of Civic States and Habits of Living, on Health and Longevity. By C. Turner Thackrah, Esq. Second Edition.

Clinical Reports of the Surgical Practice of the Glasgow Royal Infirmary. By John Macfarlane, M.D. &c.

The Anatomy and Physiology of the Organ of Hearing, &c. &c. By David Tod, Member of the Royal College of Surgeons.

An Essay on the Epidemic Cholera; being an Inquiry into its New or Contagious Character; including Remarks on the Treatment, &c. By John Webster, M.D.

A Plain and Brief Sketch of Cholera, with a Simple and Economical Mode for its Treatment, submitted with confidence, from repeated Success in its Application. By Wm. H. Williams, M.D. President of the Ipswich Board of Health. Second Edition.

Observations on Spasmodic Cholera, its Origin, Nature, and Treatment; with Remarks on Epidemic Diseases generally. By Henry M'Cormac, M.D. &c. Belfast.

A Short Treatise on Cholera Morbus, or Indian Spasmodic Cholera; with Suggestions for an improved Mode of Treatment, and for obviating Contagion.

W. WILSON, Printer, 57, Skinner-Street, London.