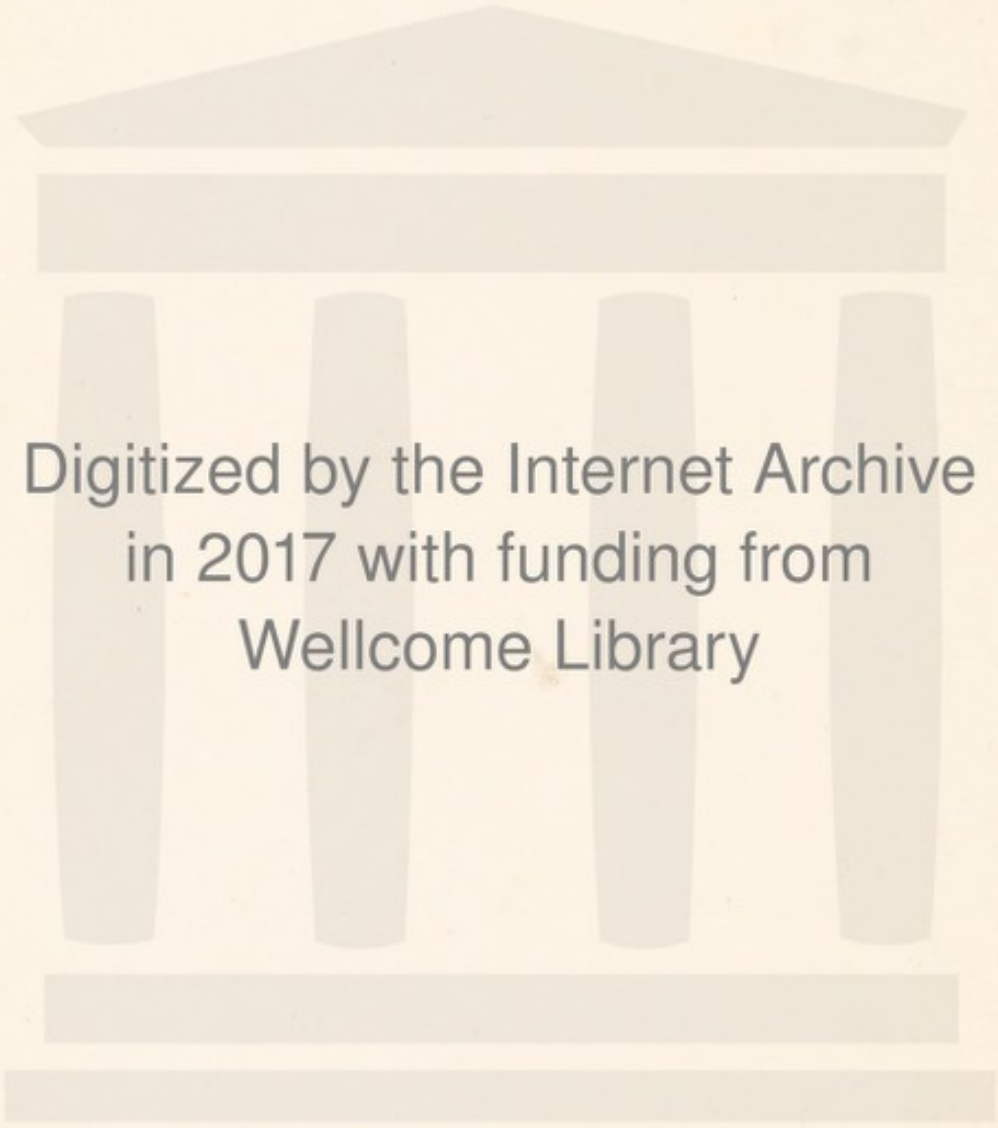
Medical commentaries on puerperal fever, vermination, and water in the head / [John Alexander].



MEDICAL COMMENTARIES

ON

PUERPERAL FEVER,

VERMINATION,

AND

WATER IN THE HEAD.

BY

JOHN ALEXANDER, M. D.,

LICENTIATE OF THE ROYAL COLLEGE OF PHYSICIANS; MEMBER OF THE PLINIAN NATURAL HISTORY, AND EXTRAORDINARY MEMBER OF THE HUNTERIAN MEDICAL SOCIETIES, EDINBURGH. ALSO MEMBER OF THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION, AND MEDICAL OFFICER TO THE GENERAL DISPENSARY FOR CHILDREN, AND BANK OF MANCHESTER.

LONDON:

LONGMAN, REES, ORME, BROWN, GREEN, AND LONGMAN.

PRINTED BY JOHN HARRISON, MANCHESTER.

1836.

MEDICAL COMMENTARIES.

MEDICAL COMMENTARIES

ON

PUERPERAL FEVER,

VERMINATION,

AND

WATER IN THE HEAD.

BY

JOHN ALEXANDER, M.D.

LICENTIATE OF THE ROYAL COLLEGE OF PHYSICIANS; MEMBER OF THE PLINIAN NATURAL HISTORY, AND EXTRAORDINARY MEMBER OF THE HUNTERIAN MEDICAL, SOCIETIES, EDINBURGH.—ALSO, MEMBER OF THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION, AND MEDICAL OFFICER TO THE GENERAL DISPENSARY FOR CHILDREN, AND BANK OF MANCHESTER.

"It is quite time that Physic should cease to assert, and commence to prove; that it should re-examine what it has hitherto believed, together with its ground of belief, and not be content in these days of a better philosophy with its ancient dogmas, or with that which it acts on from habit, and not from conviction."—[Dr. Macculloch on Malaria. P. 476.]

LONDON:

LONGMAN, REES, ORME, BROWN, GREEN, AND LONGMAN.

1836.

DEDICATION:

TO

GERVASE ALEXANDER, M.D.

HALIFAX.

DEAR SIR,

As a mere testimony of that respect and esteem which, during a forty years' practice, your professional character and private conduct have alike inspired, the succeeding pages might, with great propriety, be dedicated to you.

But, sir, you have claims upon the present writer of more weight than your talents and reputation, distinguished as they are, and the acknowledgment of which will be more gratifying to you than any public homage; I mean those of having, during early life, showered upon the Author every species of kindness; in more advanced years having ever inculcated a deep sense of the responsibility of the Medical Art; and having, at all times, evinced more than a mere parental interest in the writer's successful prosecution of his Profession.

In conclusion, dear sir, with unfeigned pride and pleasure, allow me to subscribe myself

Your grateful and attached Son,

JOHN ALEXANDER.

King-Street, Manchester.

PREFACE.

THE following pages contain, on the subjects treated, the result of personal observations, continued now for some time.

Many readers will doubtless recognise the substance of various detached papers published, at different periods, in the Medical Journals of the day; and whilst it is hoped that the following Essays are less imperfect in their collected than in their separate form, it has been to their Author a source of high gratification not to have found, on extended experience, any reason for materially modifying the views they originally contained. In reference to the first, viz: the one on Puerperal Fever, it may further be stated that the Writer has, within the last five years, received from medical men in various parts of the Kingdom, communications most flatteringly corroborative of its doctrines. Those doctrines are confessedly peculiar. It remains for general experience to confirm or refute them.

The Manchester General Dispensary for Children relieves, on the average, about twelve hundred sick Children annually, of all ages within the fourteenth year. Having been connected with that Charity from its first establishment in 1827 —it has necessarily followed that cases both of Water in

the Head and Vermination, of almost every description, have fallen under observation and treatment. The results are submitted to the reader in the second and third Essays.

It has not been deemed necessary to crowd the following pages with ostentatious foot-notes, in the form of references; first, because few readers ever make any use of them; and secondly, the writer's attention to correctly appreciating any published views he may have alluded to, renders such authentication, it is hoped, altogether superfluous.

In conclusion, (to quote a sentiment of Sir Benjamin Brodie's,) "the Author feels assured that those who are engaged in the study of Pathology, will make due allowances for the difficulties which belong to this most complicated of all the sciences, and will not be disposed to criticise his labours severely, because they find there is still an ample space left for those who may be willing to engage in similar enquiries."

PUERPERAL FEVER.

In the earlier and darker ages Medicine had few followers, and those few knew but little of the art they professed. The irradiating light of knowledge, however, gradually diffused itself, and, despite of the barriers which ignorance and superstition opposed to its progress, the Apollonic study, ere long, asserted its claim to rank amongst the sciences. For a considerable period of time the validity of that claim was disputed, and not without reason. True it was the early prosecutors of the art, by praiseworthy observation, had become familiar with a vast series of phenomena presenting themselves in the sick ; true it was they had, by repeated experiment, discovered certain modes of treatment which appeared to exercise beneficial influences ; but not less true is the fact, that they were as unacquainted with the real nature or relations of those phenomena, as with the qualities and operation of their remedial means. Hence Medicine, by its most favoured disciple, was designated a conjectural art. As the cycles of time, however, revolved, Anatomy, Physiology and Pathology, successively arose, and, by their combined influence, at length

established for it the proud and well-earned title of a Science. But are we to rest satisfied with comparing its modern and early states? Admitting an improved condition, nay, affirming, in later times, its *comparatively* perfect character, in the exercise of philosophic candour we must yet allow that much, very much, remains to be done. At the present day, Medicine may be likened to a stately edifice, the exterior of which has been completed, but whose interior remains unfinished; and, be it remembered, that whilst industry and a general knowledge sufficed for the former, in the completion of the latter, more time and a nicer attention will be required. With this allegory I close these preliminary remarks, and proceed to the important and more immediate subject of this essay.

Whence does it arise that whilst we have ponderous tomes written upon subjects of very trifling import, we may in vain search the records of medicine for clear pathological views of that distressing malady vaguely denominated Puerperal Fever? Are the symptoms which denote its presence so mild, the consequences which follow its aggression so invariably favourable, or is its occurrence so extremely rare, as to render its consideration undeserving the particular notice of the profession? Would that it haply were so! But I greatly fear there are few medical men who have spent much time at that best of professional schools, the bed-side, who have not had most painful demonstration of its fell phenomena,

unhappy frequency, and too often intractable nature. These premises being just, we are compelled to seek for another and more adequate explanation of the *comparative* silence (*comparative* because the authors hereafter alluded to are most honourably excepted, and peculiarly entitled to our thanks) of the profession on this disease. Is this explanation to be found in the reputed obscurity which has long enveloped the malady? This really appears to be the case, for whilst several eminent obstetrical writers have descanted in the most ample manner, on other and certainly less important topics, upon the one proposed for our consideration they have adopted a brevity not a little surprising and unsatisfactory.

Puerperal fever has been known from the earliest times, certainly from those of Hippocrates, but I am not aware of the existence of any satisfactory description of the malady until the year 1718, when Dr. Strother published a distinct pamphlet on the subject, and gave to the disease the name it still bears. Dr. Ryan thinks the first complete description of the malady is to be found in the Mem. de l'Acad: Roy: de Soc: for 1746; a year when it was very prevalent in Paris. The disease raged in Dublin in 1767; in Edinburgh in 1773; in London in 1787-8; in Leeds in 1809; again in Edinburgh in 1821-2; and in Paris (a second time) in 1829. The last time it was epidemic in Glasgow, was in 1819, and in this town (Manchester) in 1828-9.

Hence its peculiar features have, of late, been but too well known; yet, have we derived from experience settled views as to its *nature* and *mode of cure?* To these two points we will now direct our attention.

Hippocrates considered Puerperal Fever to be dependent upon a *suppression of the lochia*, an opinion which remained undisputed for several centuries. In later times the disorder has been successively attributed to *a vitiated state of the humours*, to *abdominal congestion from removal of pressure*, to *intestinal irritation from fœcal accumulation*, to *peritonitis*, to *conjoint inflammation of the uterus and ovaries*, to *fever of a typhoid kind*, to *erysipelatous inflammation of the peritoneum*, and to *an inflammatory condition of the uterine veins and appendages*, not to mention a number of other suspected sources of the complaint's origin. A few practical writers have declined giving any specific opinion in reference to the exact seat or cause of the disease.

As to the *treatment* of Puerperal Fever, Mr. Hey, Dr. Gordon, and several other eminent practitioners, (regarding the disease as inflammatory,) have powerfully recommended the use of the lancet employed early, and diastic purgatives, more particularly calomel and jalap in large and repeated doses. Drs. Walsh, Hulme, and Mr. White have written strongly against the abstraction of blood. The treatment they approved of consists in the ad-

ministration of emetics, (particularly recommended in 1782, by M. Doulcet, at that time obstetrician to the Hotel-Dieu) gentle laxatives and diaphoretics, followed by cordials, fomentations and sinaspisms. My highly and deservedly esteemed friend, Dr. Hull, considers the complaint as peritoneal inflammation attacking three classes, the robust, the feeble, and those in an intermediate state. In the first he bleeds and purges; in the second begins with emetics and ends with bark; and in the third uses the lancet with great caution. Drs. Denman and Leak appear to have entertained views very similar to Dr. Hull's. Drs. John Clarke and Hamilton have deprecated blood-letting, and advocated the Brunonian mode of treatment. Again, Drs. Farre, Armstrong and Ryan, appear to have thought most highly of mercurializing the system in this complaint; the latter recommending the mineral to be given, as in dysentery and syphilis, in large doses; whilst Dr. Blundell, in his lectures, (as also does Burns) affirms that, in his experience, little benefit has attended the use of mercury. Guinot, Allan, and some others, have recommended carbonate of potash in doses of ten or fifteen grains. Drs. Campbell and Macintosh regard Puerperal Fever as inflammatory, non-contagious, and to be cured only by active depletion. Their treatment consists chiefly in venesection, leeches to the abdomen and pudendum, with the use of purges, calomel and antimony.

There are many, with Brenan of Dublin, (who published in 1814,) think the counter-irritant mode of treatment the best, more particularly the external and internal use of turpentine. Dr. Hamilton affirms his having tried Dr. Brenan's treatment in Edinburgh without success, as also do Drs. Copland and Blundell ; and it is further stated that, in Dublin, this plan has gone out of vogue; whilst, on the other hand, Dr. Isaac Johnson and Dr. Payne (of Nottingham) have written powerfully in its favour. Lastly, Velpeau, Bourgon and Roux, were, a few years ago, appointed a committee to enquire into the cause, best treatment, &c., of this malady, at the time epidemic in Paris ; and, in their digested report, they state themselves to have tried the several modes of treatment recommended by Denman, Leake, Gordon, Hey, Butter, Manning, Walshe, Hulme, Clarke, Hull, Hamilton, Armstrong, Brenan, Sutton and Broussais, and all without effect ! !

In the above brief epitome of existing theories and practice, we have abundant evidence of the indefinite state of professional opinion as to the *nature* and *treatment* of Puerperal Fever. That so many highly-gifted individuals should have directed their attention to the same subject, and come to such opposite conclusions, is not a little singular ; that each should have been able to advance more or less plausible data whereupon to found such conclusions is, perhaps, not less so. But after all

that has been written, (and there has been much well written,) are we possessed of a theory which will equally satisfy our minds and direct our practice? If such exist it has not come within the range of a research, without affectation, far from limited, connected with this interesting affection of the female economy. Did the question apply only to the credit of medicine as a science it would be desirable to attempt its solution, but involving, as it does, the sacred interests of suffering humanity, it assumes and merits a far higher claim upon our most earnest consideration!

Within the last ten years it has fallen to my lot to witness a considerable number of well marked cases of Puerperal Fever, partly from accidental circumstances, and still more from the disease having, within that time, being twice epidemical in Manchester. I have also reflected no little on its phenomena in the closet, and the impression that conjoined practical experience and frequent reflection have created in my mind is this, that *much of the discrepancy of professional opinion regarding puerperal fever has arisen from not having a determinate idea respecting the nature of the complaint; and from a variety of abdominal affections being confounded under that too general and indefinite term.* Hence appear to me to arise the conflicting testimonies as to the nature and seat of the disease; hence the discrepancy of opinion as to the treatment to be pursued. It requires not the authority

of a Bacon to substantiate the aphorism that "few follow *things* themselves, more follow the *names* of things." In all diseases accurate diagnosis is desirable; in those which affect females after confinement it is indispensable. The change which simple parturition effects in the system of the highly civilized female is one almost always accompanied by *predisposition* to abdominal disorder; but *genuine* Puerperal Fever, I do not hesitate to affirm, a comparatively rare, although, at the same time, too frequent a complaint. "Unless we are assured of a practitioner's accuracy of discrimination," remarks that elegant writer, Dr. Young, "medical literature, so far from being illustrative and instructive, sinks into contemptible fable." To prove that this necessity for greater diagnostic accuracy is not imaginary, we have only to refer to "An Account of Puerperal Fever," by Dr. Butter; in which, after stating his opinion that the cause of the complaint is a spasmodic affection of the first passages, together with a morbid accumulation therein, the author proceeds to say, "There are only two indications, the first or primary one, is to promote two, three, or four stools daily, in a manner suited to the strength of the patient, until such time as they put on a regular appearance;" the second indication is, "to remove all uneasy symptoms"! Would any one suppose Dr. Butter had ever really seen this plague of the lying-in chamber; or, having beheld it, could have thus treated

its consideration? But to the practical application of these remarks we shall have to advert hereafter; we proceed now to take a careful and critical glance at the *symptoms* the disease presents.

From two to seven days after an accouchement apparently favourable, the woman is sensible of a chill, sometimes amounting to rigor or shivering, over the surface of the body; and complains of a degree of weight, occasionally of pain, over the forehead. Her mind is anxious and irritable; her countenance unaccountably saddened; her utterance, pulse, and respiration, are quickened. She perceives an oppression at the præcordia, together with an uneasy general sensation throughout the abdomen, which is more or less tumid, but not at first particularly painful. There is often observed a singular apathy respecting the child. Upon the state of the various secretory functions being inquired into, we find the cuticular, lacteal, renal, and uterine secretions, all, more or less suppressed. Accompanying these symptoms the collapse of the whole animal system is as remarkable, in most cases, as it is sudden. Should these characteristics of Puerperal Fever increase in degree, and assume the malignant or adynamic type, the poor sufferer, in a very short time, sinks into the arms of death. If, however, the character of the attack be otherwise, and the woman's strength prove equal to supporting her through the above state, she is generally attacked by what writers have termed

the second stage of this complaint. Tinnitus aurium; vomiting of bilious thin coffee-coloured matter, or occasionally of a porraceous saburra, present themselves. The tongue is observed in two very different states, with a pale or very red aspect .There is a severe and constant pain in some one of the abdominal regions; or a pain, of a less acute nature, extensively diffused throughout the distended abdomen, having, in many cases, the peritoneum apparently for its seat. The pulse, in addition to rapidity and smallness, assumes a sharper character. Dr. Blundell says he has seldom found it under **115**, unless the disease has been yielding. He has counted it as high as **165** or **170**. My experience would rate its *general* frequency at about **120**. The secretions continue suppressed, the alvine excepted. Singular to remark, the patient, at this crisis, previously depressed, often becomes sanguine of recovery. Provided the complaint run its too usual course, the ill-fated woman rapidly passes into the *last stage*, recognised by dull eyes with dilated pupil, sharpened nose and hectic flush, (as in typhus,) more or less complete and sudden alleviation of the abdominal pain, feeble fluttering pulse, involuntary excretions, hiccough, and cold extremities, the usual heralds of dissolution.

With regard to *the appearances observed after death*, as on every point connected with the consideration of Puerperal Fever, no little contrariety of

opinion has existed. The following brief summary, however, will be found to hold good. Should the individaal have sank almost immediately upon the aggression of the attack, (i. e. within forty or fifty hours) little or no structural change is observed in any part of the frame. Upon this point Dr. Blundell thus expresses himself; "On examining the body after the more malignant attacks of the Puerperal Fever, as when the patient, for example, is dead within a day or two after the chill, on opening the abdomen scarcely a trace of inflammation has been observed; a little bloody serum, a few dubious adhesions; a difference of opinion respecting the capillaries; and that is all!" (vide Lancet, August 30th, 1828.) Again, another indisputably high authority, the late Dr. Gooch (in his "Account of some of the most Important Diseases peculiar to Women, 1831.") thus writes: "the most remarkable circumstance which the experience of the last few years has taught us, about Puerperal Fevers, is, that they may occur in their most malignant and fatal form, and yet leave few or no vestiges after death." If, however, the disease have existed a considerable time previous to dissolution, the reverse state of things is generally remarked; and morbid changes, varying both in degree, seat, and character, are observed. To reiterate the correctness, or request special attention to these last observations would be superfluous, (as the evidence, substantive of them, is to be found in

recorded cases and our own experience) did they not form the key-stone of the pathological view entertained by the present author respecting this interesting complaint.

The bed side may not inaptly be compared to the field where the husbandman gains his store, and the study to the barn, where that store is arranged for purposes of utility. It is indispensable that we should entertain defined or distinct views respecting the nature of disease. These are not generally acquired when with the sick, but, by subsequent reflection upon the phenomena which have come within our cognizance. Observation is the employment of the moment together with general inference; correct and comprehensive views the result of observation and reflection combined. It has been (nay, might I not say it is?) anything but unusual to hear theory deprecated by the illiterate members of our profession. But, for the honour of the medical art, and the credit of its members, I trust and believe such prejudice is rapidly subsiding before the light of reason. What *is* theory? Legitimate deduction from facts, bearing a superiority over mere assumed hypothesis, as great as the deliberate reflections of the philosopher are superior to the senseless clamours of the crowd.

To resume—what is Puerperal Fever? I conceive it to be *a depressing affection of the abdominal nerves, (as well as, in less degree, of the nervous system generally,) strictly sui generis;* of which,

from the peculiar nature of their functions, we are unable to take any physical cognizance beyond such as relates to the observance of their morbid influences on the human frame. I apprehend it to be perfectly distinct from an inflammatory affection, (its almost universally reputed character,) although frequently terminating in, or leading to, one. And for this belief, my reasons are as follows:— Physiology has long ago proved that, although the nerves are not the organs of secretion, they superintend that process, as they do the equally important one of generating animal heat. Now, in this peculiar affection of the female economy, what are the symptoms presenting themselves, in what authors term the first stage? They are general chilliness of the whole system, suppression of the several secretions, and diffused uneasiness throughout the abdomen. When, to these are superadded the symptoms of pain in the frontal region, uneasiness of the mind, and sudden muscular depression, (almost invariable concomitants) we have abundant and, I conceive, conclusive evidence of some morbific influence exerting itself upon the (affirmed) primary seat of the malady—the nervous system. The resulting affection is extremely severe in these cases, because the part more especially attacked, the abdominal portion of that nervous system, is most important in itself; exerts extensive sympathies, and the puerperal condition is peculiarly favourable to the origin and powerful influence of

morbific action. The candid disciple of medicine will readily acknowledge that nervous pathology, as yet, is in its infancy. We daily see affections of that system presenting phenomena of varied characters; such as the chronic painless hallucinations of the mind—the restless perturbations of delirium tremens—the depressing influence of habitual headache—or the acute agonies of tic-doloreux. Yet these and numberless other affections of the nervous system may, for a length of time, exist in individuals, and hasten, nay, cause death, yet no physical traces of their ravages, on autopsy, shall be found. In Puerperal Fever the question—whence the death—has often arisen to, and been unanswerable by, the industrious prosecutor of morbid anatomy, on inspecting the corpse of one having died from it, and finding no adequate cause for the untoward occurrence. But it may, and probably will be said, admitting that many expire under this complaint whose bodies evidence no change of structure, still, *generally*, there is such change observed, and that to a considerable extent. I readily admit the fact, but maintain that, when this is the case, the *specific* or original disease has merged into another, most frequently common inflammation. No one would affirm that fever and pleurisy are the same disease, though the latter is constantly supervening upon the former. As identical, in my opinion, are *genuine* Puerperal Fever and abdominal inflammation. Yet it may,

perhaps, further be urged that, in many cases, the disease appears to *commence* with well-marked visceral inflammation. That inflammation in the puerperal woman very frequently arises, every tyro in the profession knows; that the two diseases may be complicated and mutually present, from the first, as a rare occurrence, may be admitted; but that abdominal inflammation and Puerperal Fever are the same I utterly disbelieve. These latter remarks, however, were they isolated, would form mere presumptive reasoning in support of the doctrine advocated; but, supported by the important fact, that, provided a person die within forty-eight hours after the commencement of the attack, there is no cause, (as both Drs. Blundell and Gooch admit) for death to be found in the body; that presumptive evidence becomes very strong. The patient has suffered mental and bodily uneasiness to a great extent; nay, has died under their malinfluence; yet, on inspection, where is that disorganization, *a priori*, expected—or even where that increased vascularity which, had inflammation been the cause of death, we should be able to point out? The membraneous tissues of the abdomen are numerous, and, from their delicate texture, peculiarly calculated to exhibit morbid action. When *common disease* does assail these membranes, and leads to a fatal result, post-mortem examination discovers the cause and points out the effect. Not so, however, in the disease under consideration, provided we

deny the nervous system to be the seat of the complaint.

I have remarked that Puerperal Fever, if it do not rapidly prove fatal, generally merges into an inflammatory affection which we have, in compliance with usage, described and called its second stage. The inflammation may attack the peritoneum, the ovaria, the uterus or the intestines, all at once, successively, or be confined to one organ. The particular part attacked has appeared to me determined by circumstances. Should the intestines have been unduly loaded, they suffer ; if the preceding labour has been abnormal, the uterus ; provided cold has been the excitant, very often the peritoneum ; in short, there is great variation in the seat of the inflammation, and hence, it is more than probable, has arisen the greatest cause, as it is the most natural one, of discrepancy amongst writers upon the pathology of Puerperal Fever. The very circumstance of this discrepancy amongst disinterested authors not merely leads us to doubt their individual views, but inclines us to the belief of a doctrine *which reconciles such anomalies!*

Whilst, however, the above pathological view accounts for the epidemic ravages of the complaint, the mind, doubtless, in many (though by no means all) cases, operating injuriously upon a predisposed body ;—whilst it is in perfect accordance with that essential stage of the disorder which writers term the first, and I Puerperal Fever itself ;—whilst it

accounts for the otherwise unaccountable discrepancies of the authors just alluded to, and whilst it is supported by evidence the most conclusive, viz: the inspection of the dead, unless its admission were likely to be followed by decided *practical* advantage, I should not have advocated its adoption even in the present imperfect manner. A few short reflections however will I think, suffice to shew that, on the current existing hypotheses, we cannot satisfactorily treat Puerperal Fever; whilst, at the same time, considerable experience and reflection justify the opinions we have broached, and the adoption of those measures, with the recommendation of which this essay concludes.

Admitting that *exclusive* views have done much towards fertilising particular tracts in the waste regions of Medicine, it is probable they have contributed no little to retard its general cultivation. Indeed, in any science, exclusive notions are as formidable barriers to improvement, as intervening mountains are to an extensive prospect. The various doctrines prevalent as to the nature and treatment of Puerperal Fever have been, as shewn in this essay, especially of this exclusive character. The opinions of their several promulgators are entitled to our respect, some almost to our adoption; but their indiscriminate application to every case named or misnamed Puerperal Fever cannot be too strongly reprobated. To illustrate the mode of their pernicious influence. A female is attacked

with genuine Puerperal Fever, and is visited by an exclusive disciple of the antiphlogistic doctrine. Believing, as his preconceived notions lead him to believe, that this fell inroad of disease can but in one way, (the large abstraction of blood,) be successfully opposed, he plunges his lancet into the veins of his patient, prolongs the copious stream, and secures for her an almost certain passage into a better world. Another lying-in woman, by dint of good constitutional powers, we will suppose to have survived the *essential stage* of the malady, and to be attacked with successive inflammation. Her attendant may happen to be a disciple of the Hamiltonian school, who, under the impression that her complaint is genuine Puerperal Fever, alias *debility,* (that bugbear of practical medicine,) because, forsooth, she is in a puerperal condition, pours in his cordials to support a life he thus unconsciously destroys. Had this latter female happened to be seen by the former mentioned practitioner, her life would have been, in all probability, saved ; not from the one holding more correct views of the complaint's pathology than the other, but from the accidental *applicability* of those views to the *existing* state of the case. Again, imagine a woman attacked with a mild degree of Puerperal Fever :—A disciple of Brenan visits her, prescribes turpentine, and, on his next visit, perceives the complaint removed. Exposing herself to cold, two or three days afterwards, we will pre-

sume her seized with acute enteritis :—Her medical attendant sees her again, and, *because she is in the puerperal state, and he entertains certain notions,* turpentine is again solely trusted to. To detail the consequences would be superfluous ; they are too easily inferred. Finally, to instance one more effect of these *exclusive* doctrines : an individual is attacked with undoubted Puerperal Fever—her attendant, not knowing what to do, (for, provided he be inexperienced, to what source of direction can he with confidence look ?) equally fearing to stimulate or to deplete, orders, perhaps, a mild aperient and an evening sudorific draught. What is the result ? The disease advances—the practitioner remains undecided—the friends are distressed—the woman dies ! This is no ideal picture.

A number of highly satisfactory *cases* might now be submitted to the reader, and their details given. Four of those cases, however, have been extensively circulated, and are to be found in one of the leading medical journals of the day ; (vide Lancet, 1830-1, vol 2nd.) Moreover, individual examples of disease differ ; epidemics vary ; and, on some other accounts, it appears preferable to state, in as brief a manner as possible, the *general principles* regulating the writer's practice, and to leave their application to be modified by circumstances, and the judgment of the practitioner. Suffice it, therefore, on this point, to remark that, in addition to the published

cases just mentioned, I possess notes (more or less perfect) of six later ones, treated on the same principles, and (with the exception of two hopeless cases) terminating equally favourably.

Upon visiting an individual labouring under Puerperal Fever, it should ever be our first object, divesting ourselves of all preconceived notions, to correctly ascertain and appreciate the simple features and exact progress of the case ; and, at the same time, by cheering representations, to allay that mental agitation and consequent bodily excitement which peculiarly characterise the disease on its first attack. The bed-room of a lying-in woman is very generally, as to temperature, kept sadly too warm ; in Puerperal Fever it is very important that it should be kept cool. A high temperature is infinitely more prejudicial in febrile cases than a low one. Provided, on examination, the abdominal uneasiness be general and not increased upon pressure, the whole of the bowels should forthwith be covered with a large bran poultice, thinly laid, but applied constantly as hot as can be borne. Blisters I am decidedly opposed to. The bowels, if not free, should be relieved by an enema containing, amongst other ingredients, powdered colocynth, aloes, and muriate of soda. The employment or non-employment of the lancet, must be determined (and this consideration is the most difficult one appertaining to the '*modus medendi*' of the complaint !) by the presence or absence of

defined local pain, by the *general habit of body*, the *woman's age*, the *disease's type*, and the *period of the malady*. The following considerations have generally guided myself. If called in *early* I have bled, (though not so largely as in many other diseases,) and with apparent benefit, when there has appeared even but an inflammatory diathesis, still more when there has existed concomitant local inflammation ; on the other hand, when the *nervous excitement* has existed any length of time, or has been strongly marked, at the commencement, this highly lauded and highly deprecated measure has been invariably dispensed with. On this very important practical point, Dr. Burns has recorded opinions so exactly tallying with and supporting my own that I feel no little pleasure in quoting them. "I am quite convinced," observes Dr. B., "that in simple peritonitis the lancet is the anchor of hope, if hope may be indulged ; but in contagious or Puerperal Fever, it must be used with more circumspection, and is still less to be depended upon. I am fully aware, from experience, of the good effects which often follow from bleeding early in typhus or contagious fever ; and, therefore, I have no prejudice against that remedy in this contagious disease. I have, on the contrary, used it freely myself, and have known it done so by others ; and to this free trial I have been led by the respectable testimony to its advantage, as well as the fatal issue of the disease under

other treatment. I am, however, from observation, convinced that if this remedy be useful, it is in the very early stage, and that it cannot be too soon employed. If the disease have made any progress, I have never found it useful. Like other remedies, particularly purging, it has been followed by an apparent relief, but the pulse did not come down, nor was the patient cured. My conviction therefore is, and I cannot state it without a feeling of awful responsibility, that the lancet is only admissible in the very commencement of the disease, and if decided benefit be not derived then, we ought not to repeat the evacuation. It is my duty to say, and I do it, considering the opposite sentiments of good judges, with a sense of deference, that I have never known any patient recover who had been largely and repeatedly bled, and that my successful cases have been amongst those who either were not bled at all, or bled early, not above once and that not abundantly. At the same time I am willing to admit, that much must depend on the constitution of the patient as well as the peculiarity of the epidemic, and particular circumstances. If bleeding be indicated, let us bleed early, and be guided by its effects."—(Principles of Midwifery, p. 566.) Mercury, under the form of calomel, combined with Dover's powder, I have always found to act beneficially, often admirably ; the former, it is presumed, by changing the morbid action, and the latter, by allaying the nervous orgasm. In pills

they lie best upon the stomach. *These medicines must, however, not be exhibited in the usual dose, but given largely; indeed their exact quantity should be regulated* ONLY *by their effects, the practitioner's discretion, and the intensity or mildness of the attack.* Provided time allow, and these remedies attain their two important objects, sanguine hopes of recovery may be entertained. The beverage allowed in the complaint should be determined by circumstances; white wine and water, as an usual one, rendered agreeable to the palate, has been generally given, by the writer, in a dilute or concentrated form. Should the enemata not suffice for duly relieving the bowels, purgatives, given by the mouth, must be administered in a warm form, as very pernicious consequences attend cold saline aperients. My favorite and usual aperient, in this malady, has been spirits of turpentine and castor oil in equal quantities. External applications, inducing a constant diapnoë, or breathing perspiration, until all danger be past, must steadily be persevered in, an object which the poultices (before mentioned), hot bottles, and warm flannels, satisfactorily effect. Should symptoms of sinking appear, spiced wines, burnt brandy, æther, and other cordials, must be freely administered. Lastly, it has been, with the author of the present essay, a principle never to leave puerperal sufferers for many hours unseen, on account of the remarkably sudden changes incident to

them; and, still less ever to despair however apparently desperate their condition; as the mischief to be combated, in the majority of cases, is assuredly not *organic*, but the effect of *high functional disturbance;* a disturbance, it is true, which proves but too often terminal of existence, although promptly, energetically, and perseveringly opposed.

VERMINATION.

In the autumn of 1830, attention was first particularly drawn to the subject of the present essay, from the following circumstance. I had, for some days, been attending a child, five years of age, labouring under convulsions of very severe character, which had not appeared to give way in the least to the use of leeches, vesicatories, cold applications, aperients, antispasmodics, and the warm bath ; when, one evening, after a lengthened attack, apparently threatening dissolution, a worm of the *lumbricus teres* species was expelled ; the exhausted child sank into a prolonged slumber, and not any return of the convulsions afterwards occurred. The case, on two accounts, attracted my especial notice. The child was a firm-fleshed little fellow, with a countenance anything but verminative ; and the most careful examination of the evacuations did not lead to the detection of more worms, although appropriate anthelmintics were persevered in for some time.

Vermination appears, at all periods, to have formed a favourite subject of study with the profession ; for not merely have we on record the

researches of Baglivi, Linnæus, Redi, Heister, Rudolphi, Butter, Lister, Black, Home, Simmons, Bremser, Schmucker, Hooper, and Rush, respecting it; but also the earlier views of Galen, Celsus, Avicenna, Pliny, and Hippocrates.

In the succeeding remarks I purpose considering Vermination, chiefly in reference to its occurrence during early life.

Young children are subject to three distinct kinds of worms; the *ascarides*, or small seat worm —the *cucurbitina*, or short flat worm—and the *lumbricus teres*, or round worm. The fourth variety of human worm, the *tænia*, or tape worm, I have never known, in my own experience, to be voided by a young child, which, considering how much early life is infested with worms, is somewhat singular; and not the less so, as I have been told by practitioners of undoubted credibility, that they have had such cases. However, the records of medicine and personal observation dispose me to think the presence of *tænia*, in the bowels of very young children, a rare disease; an opinion in which I am not singular, as Dr. Elliotson has lately made a similar statement, at St. Thomas's Hospital. Its correctness, however, is confined to this country; as, in some climates, Germany for example, the young are affected with *tænia*, or said, at least, to be so.

The *cause* of Vermination remains in utter obscurity. At one time it was affirmed to be a

weakened condition of the alimentary canal; overlooking the fact, that this local debility more frequently succeeds to, than precedes, the presence of these parasitic animals. It was supposed by some writers that intestinal worms are engendered by their ova being swallowed amongst our food; but to this specious explanation it was objected that the alimentary canal of animals is the *only* place in which certain worms are *ever* found, which, of course, would not be, provided the ova were imported from without. "We find," says Bremser, (who, in the cabinet of Vienna, examined no fewer than 15,000 specimens of worms) "all animals most abundant in that situation which has been assigned to them by nature." Other pathologists (Dr. Darwin in the number) have advocated the doctrine of worms being caused by a general inactivity of the absorbent system, but in what manner, unfortunately for us, they have not proceeded to explain. Again, these worms have been supposed to originate in peculiar intestinal secretions; and the great moisture of the young child's bowels has been adduced to support the hypothesis. Dr. Stokes, in one of his valuable lectures, enquires, "can we connect the formation of intestinal worms with any known pathological condition of the intestinal tube? This is a question" continues that able writer, "of no ordinary importance, for if we were able to connect their formation with an inflammatory or any other state of the digestive tube, it would furnish

us with a key to correct and successful treatment. The school of Broussais are of opinion that worms are the result of an acute or chronic inflammation of the gastro-intestinal surface. This doctrine is by no means supported by the evidence of facts, for it has been established, *that worms are found to exist not only in connexion with every possible pathological condition of the intestinal canal, but also where the tube presented the appearance of perfect health.*" To this may be added the coincident testimony of Andral, who affirms that "he has found them in *all* conditions of the intestine, whether red or pale, dry or covered with mucus. They are most commonly" he notices, "enveloped in a quantity of mucus, and there is some redness in the place where they are lodged, but this appears to be rather the *effect* of their presence than the *cause*." Indeed a very brief review of the theories to be found in medical writings, respecting Vermination, will, I think, justify the assertion, that nothing definite or satisfactory is known upon the subject; and lead us to agree with the late Dr. Baillie, "that there is nothing in the economy of animals more obscure than the *origin* of intestinal worms."

The most common variety of Vermination is that form induced by *ascarides*. These ascarides, or *seat worms*, as they are sometimes called, are of a yellowish colour; vary as to length, being from a quarter to three quarters of an inch long; and have for their *habitat* the lower part of the colon and the

whole rectum more particularly. A species of these ascarides is occasionally met with, wherein the worm is extremely small, and hence called the *thread worm*—viewed through a microscope it presents a sharp pointed head, and dies immediately on coming into the air. A child, infested with either species, is observed to have a pruritus equally of the anus and nostrils, and to part with motions of a slimy character, small in quantity but frequently repeated. Provided the number of worms be considerable, some headach, restlessness, and symptoms of dyspepsia supervene, but seldom to any extent. In these cases, tolerably large enemata, consisting of bitter aloes, (suspended in any bland liquor, as gruel, linseed tea, or olive oil,) give immediate and, if persevered in, complete relief. At the same time it is advisable to administer to the child small doses of scammony and rhubarb, to change the status or condition favourable to their regeneration. Enemata of Harrowgate water—the introduction of bougies smeared with mercurial ointment—the smoke of tobacco—and iced water have severally had their advocates, but are now rarely used, less objectionable means answering every end.

A pathologist, of some note in his day, entertained the singular notion, that the presence of the above *ascarides* was "Nature's remedy for destroying the superabounding morbid humours, and for stimulating the first passages by their crawling

motions, and thereby assisting the peristaltic motions of the guts, to carry off what remains of the offending load." Few persons, at the present time, will, I apprehend, be bold enough to advocate this amusing view; or to think with Dr. Parr that "worms seem to form a part of a healthy constitution, and are scarcely injurious, except from accidental circumstances." Finally, with regard to the *ascarides*, the curious in such matters, on referring to the first volume of Medical Transactions, will there find a case, related by Dr. Heberden, of *ascarides* infesting the bowels of an adult, and resisting every mode of treatment which that eminent physician and other practitioners could think of. And, in a late work published by Dr. Ryan, mention is made of these worms having been found in the bladder! Such cases, however, are not of every day's occurrence.

The symptoms attendant upon the presence of the *cucurbitina*, or flat short worm, are much more numerous, and of a more general character. The nasal and anal pruritus are less perceived, but nevertheless present; the temper is irritable, and the child subject to grinding of the teeth, starting, and low moaning, during its sleep. The countenance is of a pasty look; the skin yellowish; the eye dull, and frequently surrounded with a darkish areola; the lips and nostrils are thick, swollen, and apparently œdematous; the breath, in a morning, is fetid; the abdomen tumid, more or

less hard, and, in the umbilical region, frequently painful. A sudden and severe pain at the epigastrium is a common symptom of Vermination; as also are griping pains suddenly arising and as suddenly subsiding. The child's urine is observed in two states, very plentiful and pale; or, what is much more usual, scanty, thick, and of a milky appearance. The fœcal dejections are extremely irregular; at one time scybalous, at another diarrhœal, but always accompanied by more or less slimy and offensive mucus. This form of disorder is so common in the nursery, that I need not extend its description, but shall proceed to the *treatment* required for its removal.

First, then, as to the child's *diet*.—Fresh vegetables, pastry, sweets, and salted meats should be altogether interdicted. Stale wheaten bread, arrow root or sago, with milk, should form the evening and morning meal; fresh animal food, such as mutton chop, beef-steak, or boiled fowl, *in small quantity*, the meridian or noon repast. To these, by way of change, may be added the various animal broths, and a little good rice. It may be—nay frequently is—objected to this dietary, that the hitherto indulged child will not be contented with it. My answer is, (and the mother's answer should be)—let it fast until it will! The period of abstinence is seldom a protracted, always a beneficial, one. In dispensary practice the cure of verminative disorders is constantly impeded by the parent being

utterly unable to procure appropriate food for the child ; and, owing to this too common occurrence, we are rendered painfully sensible of the great importance of a regulated diet in Vermination.

Next, as to *medicine*.—It has been my custom to commence the treatment by administering scammony, jalap, and calomel, in small doses, suited of course to the age, every alternate night at bed-time ; succeeded, the mornings following, by a moderate quantity of castor oil. There are two reasons which I conceive render small doses of aperients in this complaint preferable. They have a better opportunity of exerting their alterative effect, by being leisurely passed through the alimentary tube ; and, secondly, in the great majority of verminative cases which I have witnessed, the little sufferer has been more or less troubled with partial prolapsus of the gut after defecation—and, it is scarcely necessary to add, that powerful purgatives render this local debility a great source of distress. At the same time I fully concur with my esteemed friend and Dispensary colleague, Mr. Stott, in thinking that the *first* purgative should be in full dose, as a free evacuation of the large intestines gives marked relief to the accumulative distention and bearing down, that attend upon these cases. Gamboge, from being tasteless, would constitute an aperient peculiarly adapted for children, but it is a drug which, sometimes, not merely occasions considerable sickness, but signally fails

in answering the object we have in view; hence I cannot recommend, as many have done, its adoption. After the first passages have been *daily* unloaded for a week, the spirit of turpentine mixed with castor oil may next be given with the most salutary and marked effect, not unfrequently removing hundreds of these enemies of childhood, at every dejection. The dose I have generally given to a child of five years of age has been two drachms of each, combined, and taken on an empty stomach. A smaller quantity often fails to act on the bowels, and then, perhaps, affecting the kidneys, creates distress in the bladder, even to inducing bloody urine. When tormina, or griping, is produced by this medicine, (first recommended by Dr. Fenwick,) the mother or nurse has merely to give a little warm gruel occasionally, well spiced; and should temporary intoxication attend its operation, (which is not unusual) to lay the child in its crib until this effect shall cease. Another form of exhibiting turpentine is in sweetened milk; and this mode will sometimes agree with the child's stomach better than the one just mentioned. Of course the necessity for repeating or continuing these purgative medicines, can only be determined by the circumstances of individual cases; but even before they are discontinued (and I have generally persevered in their exhibition for about a fortnight) there is no objection to commencing the use of some strength-

ening remedies, with which the cure is generally completed. For this latter purpose the infusions of camomile, gentian, or calumba, with the powders of iron, bark, or rhubarb, (any of them) answer very well.

As a beverage in verminative cases, lime water has been greatly lauded, and, I apprehend, not unjustly, as its certainly beneficial effect may be reasonably accounted for, on its, first, correcting acidity, and secondly, removing mucus—the chosen nidus of these parasitic animals,—thus acting medicinally and chemically at the same time. The use of cowhage, (or the *dolichos pruriens* of Linnæus) has been strongly urged on the profession by several practitioners, more particularly by Drs. Chamberlin, Macbride, and Thomas; the latter of whom affirms "that in several hundred cases, in which he exhibited it in the West Indies, along with the submuriate of mercury and jalap, he never knew it once to fail." Had not the latter mentioned remedies the more important agency in the cure? The cowhage I have used, but not so extensively as to authorise my venturing a decided opinion as to its anthelmintic merits; and perhaps it is but just to Drs. Chamberlin, Macbride, and Thomas, to add, that in "The Natural History of Guiana" an essay replete with information, Dr. Bancroft has recorded sentiments equally favourable to this now little employed remedy. Of fern-

root, (the basis of Madame Nouffler's celebrated medicine)—of valerian—assafetida—iron-filings—and ground glass, I feel disposed only to remark, that they have each had their advocates; and each been extensively used as vermifuges. The latter-mentioned, if administered, should be given in large doses, as their operation is purely mechanical.

As to preventing a recurrence of the complaint under consideration, a regulated diet and daily exercise are assuredly the best means. One dietetic article I may here specially allude to, and that is table salt. Although I cannot agree with Dr. Rush in thinking it particularly valuable as a means of *removing* worms; as a constituent in a child's diet well calculated to prevent their *regeneration;* I certainly do esteem it most highly. That too well known disease in sheep, the "rot," is caused by great numbers of the fluke-worm being imbedded in the liver—and every practical farmer is aware, that salt given freely is the surest means of preventing this plague of sheepfolds. Hence its anti-verminative influence is unquestionable.

The destruction of the third variety of worm to which children are liable, viz: the *lumbricus teres*, must be conducted on precisely the same principles as those already laid down. Suffice it therefore to remark, that the ileum is the favourite *habitat* of the worm—that perseverance is indispensable for its removal—and that, although the least common,

it is the most dangerous variety of Vermination, as it oftener leads to convulsions and death than any other. And the following practical fact should never be forgotten—that the non-detection in a child's evacuations of any worm, is, by no means, conclusive evidence of the child being free from them. Therefore, if a young person labour under verminative symptoms, we should continue exhibiting appropriate medicines, although apparently without effect, as it has, by Dr. Armstrong, been well observed, that worms may be so changed previous to expulsion, as not to be recognisable.

Vermination gives rise to *sympathetic affections* of the brain—the heart—the lungs—the stomach—and the bladder. An instance of the first of these sympathetic affections commences this paper; and, since its occurrence, I have met with several similar ones, although none, perhaps, so calculated to mislead. It becomes, then, a matter of practical importance to ascertain those combinations of symptoms which will lead the junior practitioner to suspect, at least, the existence of Vermination when operating as a cause of disorder. And, with that end in view, the following observations, brief though they be, may not altogether prove unserviceable.

If a child, who has exhibited a fretful temper, nas been irregular in its bowels, and has a tumid abdomen with slimy evacuations, be attacked with cerebral symptoms, they should almost exclusively

be met by very active purgatives—for, in the majority of cases, with the removal of the cause, subsides the head disturbance. Moreover, should a child, so circumstanced, exhibit even strong indications of affection of the brain, as dilated pupil and epileptic paroxysms; *if there be not a correspondent permanent affection of the pulse,* Vermination is very probably the sole cause of disturbance.

Should a young person be troubled with pain referred occasionally to the side, sometimes to the epigastrium, and still more frequently to the *umbilical region,* accompanied with a dry tickling cough, anthelmintics often prove the most efficient remedies, as this is but another form of the disorder under consideration.

Irregularities of the vascular system are frequently observed to arise from the presence of worms. Some years ago the following interesting case occurred. I was consulted on the curability of a young lady said to be labouring under confirmed disease of the heart. In the instance alluded to were remarked an intermitting pulse, shortness of breath, tickling cough, and a countenance exhibiting somewhat of that physiognomical expression which so peculiarly indicates disease in that vital organ. But, on proceeding to an examination of the alimentary functions, I was led to suspect that they were quite as much concerned as the heart,

which, at her time of life, was most probably suffering sympathetically. To be brief, exclusive attention was directed to the condition of the *primæ viæ*; subsequently anthelmintics were resorted to, and I experienced great satisfaction, not merely in the remedies expelling a great quantity of worms, but in witnessing the young person's rapid restoration to health.

I have known some well marked instances of gastric uneasiness being solely owing to the presence of worms; and have been led to think the *lumbricus teres* the general cause of distress; as in two children I have witnessed this worm make its exit by the mouth, much to the surprise of the bye-standers. In these cases, in addition to the gastric pain, we have those of worms generally and nausea most especially. Andral mentions the case of a child who, in a state of apparently good health, was suddenly seized with symptoms of suffocation, and died. On dissection it was found that a large lumbricus which had come up from the stomach, had, when it arrived at the glottis, turned into its orifice, and, by irritating the larynx, produced spasmodic closure of that organ and suffocation.

The sympathy between the bladder and alimentary canal is so frequently observed as scarcely perhaps to justify remark. When the latter is infested with worms to any great extent, the former invariably is disturbed;—I shall, therefore, merely

observe, that the frequent disposition to micturate, and the thick milky state of the urine, must not mislead: or be treated otherwise than by anthelmintics. The same remarks occasionally are applicable to infantile leucorrhœa; as Vermination is one of the sources of this last mentioned affection.

Having described three varieties of worms, our diagnosis ought not to be limited to distinguishing between Vermination and other maladies—but should extend to the enquiry—how may the *particular form* in any case be determined? On most occasions this is no difficult task. If a child, having great anal and nasal pruritus, be free from inordinate appetite, tumid abdomen, or disposition to cachexy, we may feel assured the irritation is purely *ascarideal.* Again, if a child be cachexial to a great extent—have but little of the pruritus just mentioned—have an inordinate liking for improper food—and be troubled with the before detailed symptoms; in such a case great part of the intestinal tube is doubtless affected by these parasitic animals, and, most probably, under *the second form.* Lastly, should a convulsive paroxysm, cerebral disorder, or particular abdominal pain suddenly arise, and be unaccountable, excepting on a verminative explanation, the presence of the *teretral variety* is strongly indicated.

In conclusion, very little attention has been paid

to the post-mortem appearances in this disease; a fact too easily ascertained by reference to the pages of Baillie, in past, and Martinet, in more recent times. Doubtless the chief reason is the comparative infrequency of children dying solely from Vermination; but still cases do occasionally present themselves; and should the author of this essay ever venture to resume the subject, it will be to request attention to this much neglected field of pathological enquiry.

ACUTE HYDROCEPHALUS, OR WATER IN THE HEAD.

Although Acute Hydrocephalus, from the very constitution of the human race, must, at all periods of time, have existed; in the early records of medicine there are few observations to be found which indicate anything approaching to a familiarity with that important disease. A circumstance so singular should probably be referred to the difficulty which ever accompanies the diagnosis of infantile cerebral diseases, and the few post-mortem examinations which the first cultivators of medical science are known to have enjoyed

In later days the attention of Morgagni, Ruysch, Schenck, Haller, Blackmoor, and Petit, was successively awakened to the malady; but as to its intrinsic nature, causes, and treatment, little was definitively known previous to the researches of Paisley, Whytt, and Cheyne. To these last mentioned pathologists we are unquestionably indebted for the first distinct views of this interesting disorder. Nor, in the grateful enumeration of those

who have contributed to our knowledge of Acute Hydrocephalus, should Dr. Golis, of Vienna, be forgotten. His splendid monograph on the complaint (translated by the late Dr. Gooch) will, I feel convinced, ever be regarded as a most valuable contribution to practical medicine.

But to proceed.—Infantile encephalitis, or Acute Hydrocephalus, is essentially a disease of early life. In a paper written by Dr. Mills a short time ago, the details of twenty fatal cases are published; and from that paper it appears, in reference to the ages of the several children, that twelve of the twenty died before attaining the sixth year; seven between the third, sixth and eighth, years, and one at the age of twelve. The truth appears to be that Hydrocephalus is observed both at the early and late periods of childhood. Indeed the sudden deaths occurring to very young children are more referable to this disorder than is generally imagined; and, on the other hand, examples of Acute Hydrocephalus are occasionally met with, even after the fifteenth and twentieth year. In the very young the disorder sometimes runs its course, or rather, I should say, proves terminal of existence, in as many hours as it generally continues, days in those of more mature age. It is of all infantile complaints at once the most common and the most fatal. According to Dr. Coindet, twenty thousand children die annually from its ravages in France; whilst, on reference to the annals of the

Universal Dispensary in London, (published by Dr. Davis) it appears that of every forty-five cases, terminating unfortunately, no fewer than eight are distinctly referable to this source of mortality.

Acute Hydrocephalus I shall venture to define *a specific affection of the brain, generally leading to serous or lymphatic effusion.* The malady presents, provided it run its usual course, a *congestive*, an *inflammatory*, and an *effusive* stage. Some writers, for example Dr. Golis, add to these a fourth, or stage of *palsy*, which I apprehend, is better omitted, as it very frequently happens that the child dies before any paralysis is observed; and, moreover, when present, the phenomenon is a mere *effect* unconnected with the *causation* of the disorder, and therefore only to be regarded as a morbid symptom consequent upon the disease. The three stages mentioned are those generally observed, and those through which, in the majority of cases, the child successively passes; but it is occasionally noticed that distinct inflammatory symptoms constitute the first evidence of the child's being ill, as it does sometimes doubtless happen that an *effusive* state has presented itself without a preceding *inflammatory* one. We see an example of the former in metastasis of various affections which, suddenly leaving their original site, fall upon the brain; and as to the latter, in young infants, observation has satisfied me that effusion does occasionally take place without the

occurrence of the usual preceding morbid affections. Dr. Golis has called this latter, or suddenly effusive phenomenon of Hydrocephalus, by the expressive term, "*the water stroke.*" "To it," remarks that writer, "belong all those depositions on the brain which arise from small-pox, measles, erysipelas, and other febrile eruptions; and also those convulsions which follow the sudden cessation of chronic or habitual discharges, the repulsion of chronic eruptions, as *crustea lactea, tinea*, discharges from the ears and the like, or from diarrhæa, dysentery, general perspiration when the same has been suddenly stopped without previous perceptible turgescence or inflammation. In all these cases of sudden death there is found, on examining the bodies, an effusion of fluid in the head, for the most part in the ventricles of the brain itself." Whilst, however, occasional irregularities in the course of the complaint should be acknowledged, lest the student of medicine be misled, for our practical purpose it will suffice and be most useful to consider the disorder under its three generally observed forms.

The *congestive* symptoms (constituting the *premonitory* stage) of infantile encephalitis I have observed to be as follows.—The indisposed child seems languid, listless; sometimes surly and irritable; and is noticed occasionally taking deep drawn sighs. Its pulse is variable, but generally *slow*. The countenance changeable, sometimes hectically flushed, at other times unusually pallid.

Sleep takes place at unaccustomed hours, affords little refreshment, and is characterised by an unequal respiration, and slight disposition to delirium. The skin feels hot; the tongue is observed to be coated with a thin white film; the fauces are dry; there is considerable thirst and little appetite; the breath is peculiarly offensive; the alvine evacuations are few and irregular, both as to time and appearance. Considerable exacerbation of the febrile symptoms is generally observed towards evening; and in this stage, children of six and seven years of age I have known to particularly complain of the weight of their heads, of giddiness when in the erect posture, and of pains in the various parts of the body; whilst younger children may be observed to rock about their little heads, (the anterior fontanelle of which is not unfrequently tumid,) and to become suddenly silent in the midst of loud cries. These last mentioned symptoms (first particularly adverted to, I think, by Dr. Thomson) are very characteristic of impending mischief.

Should the disorder progress, more unequivocal phenomena mark the next stage, or presence of *cerebral inflammation*.—The child complains of pain chiefly referred to the forehead. Upon examination the head feels unusually hot, particularly at the fore and back parts of it. The countenance is, in some cases, flushed, with slight conjunctival suffusion, but more frequently pallid, anxious, and

shrunken. The child's hearing is acute. The eye is turned upwards under the lid, which appears as if it were dropped ; the pupil expands frequently during the occasional convulsions. There is more or less moaning, interrupted occasionally by those shrilly screams so characteristic of Hydrocephalus. Grinding of the teeth is not unusual ; the tongue is coated and dry ; the skin is hot ; the pulse is unequal in strength, quick, intermitting, and, on disturbance of the child, hurried to double its usual rapidity. (On this last pathognomic feature, Dr. Cheyne remarks, " the pulse beats perhaps ten or twelve beats at the rate of sixty, and the next six or eight at the rate of 100. The same kind of pulse has been observed after poison has been swallowed. At a first visit, when I have found a child asleep," continues Dr. C., " I have several times detected the disease by this state of the pulse.") There is a great disposition to sickness on even slight motion. The child's digestion is materially impaired, food passing almost unchanged, and accompanied by a remarkable fœtor. The abdomen is shrunken, frequently referred to as a seat of pain ; and the bowels are constipated ; The urine is scanty, high coloured, and, on standing, frequently throws down a copious deposit. When the little sufferer awakens from its short and unrefreshing slumbers, it is never satisfied with its position; one moment wishing to be on its mother's knee, the next desiring its crib—vainly thinking,

by variation of posture, to remove its uneasy sensations.

The symptoms indicative of the *effusive* stage are still more marked. The countenance is changed—the eye's pupil is insensible to light and dilated, or, as I have occasionaliy seen in a few cases, irregularly contracted. Strabismus presents itself. The body is extremely emaciated, bathed in cold perspirations, and in various parts often ecchymosed. The lips are dry; tongue coated with a brown fur; and deglutition all but impossible. The child turns the palm of the hand outwards, and passes it to the cheek when it is forcing the offered medicine or drink from its mouth. The pulse rapid, feeble, and intermitting; the natural evacuations are involuntary; the stools, dark green, and glairy. Lastly, more or less subsultus, spinal spasms and general convulsions, are observed to be present in this closing scene of the hapless child's suffering. The animal heat lessens—the bronchial rale is heard—the distorted countenance becomes placid—the heart falters—and the distressing scene is closed!

From the date of the first symptoms of indisposition, Dr. Whytt calculated the general duration of the malady to be five weeks. Dr. Fothergill estimated it at three. The disorder's duration, according to my experience, as well as its degree of intensity, varies in almost every two successive cases, and I do not possess data whereby to ascertain the average time.

Medical writers generally state that a child attacked with Acute Hydrocephalus will pass through the stages just described ; and, that on their post-mortem examination, certain appearances will probably present themselves. For example, that the *dura mater* will be found more adherent, and the *pia mater* more turgid than usual ; that lymph will be found between the membranes ; a larger or smaller quantity of fluid (uncoagulable by heat) in the ventricles ; each *choroid plexus* blanched and flabby ; that the cranial bones are frequently separated ; that tumours of various kinds are discovered in the brain or cerebellum, or attached to the membranes ; and that where the cerebral substance has been inflamed, and a large effusion has not ensued, the brain itself, on cutting, presents a great number of minute bloody points ; and if the complaint has been protracted, certain portions of it are softened. Now all these appearances have, at various times, doubtless been observed. To most of them, from personal experience, I can individually testify. But (as before stated) it sometimes happens that children die in the first stage of this malady ; and it has occurred to the writer, to see young children, labouring under the premonitory symptoms, seized with a fatal convulsion, and upon being opened presenting no tumours, no effusion,—in a word, little abnormal condition of the brain, further than perhaps a slight apparent disposition to a *congestive* state of the cerebral

mass. Again, many children die in the second stage of the malady, and the morbid condition which autopsy reveals, is found to be a state of cerebral inflammation. Further, should the child's decease take place in the *effusive*, or third stage, the post-mortem inspection presents the characteristic morbid appearances more developed. Hence it obviously results that the appearances after death must, in speculating on the nature of the disease, be regarded not merely *per se*, in any given case, but in relation to the time the child has lived ; and not merely are they dependent on the *duration* of the disorder, but on the constitution of the sufferer. Acute Hydrocephalus in a previously healthy child presents one character ; in a delicate strumous child quite another ; and in both, the disorder differs from the encephalitis of the adult. If this were not the case, active depletory measures, employed early, would be as successful in the child as they are found to be in the man. Yet they are otherwise. Cerebral congestion and inflammation, in early life, are assuredly not as tractable as at a later period of man's existence. The post-mortem evidence goes far to shew that the cerebral condition or status, in the child labouring under Hydrocephalus, and in the adult under encephalitis, are not analogous ; as proved by the effects produced. In a young person the effused fluid is scarcely ever flaky, or the substance of the brain much softened ; whilst, in the adult, both these

appearances are every day observed. Whence is the difference; and is it one that invalidates the presumed *inflammatory* character of the disease? The question involves reflections of interest.

A belief that Hydrocephalus is essentially an *inflammatory* disorder is founded, first, on the character of the symptoms during life—secondly, on the observed efficacy of antiphlogistic medicines—thirdly, on the beneficial operation of counter irritants and evacuants—and fourthly, on the general character of the appearances after death. Instances may and do occur of those symptoms being indifferently marked; of antiphlogistic means vigourously employed failing; and of few indications of preceding inflammation being observed upon opening the head. A *sub-acute* form of the complaint, however, answers the first of these objections, viz: the indistinct character of the symptoms—as to the second, anti-inflammatory remedies failing, do they not frequently do so in tubercular degeneration of the lungs (an admittedly inflammatory affection) —do they not do so in glandular diseases of the young—and is it to be wondered at that they should do so in cerebral disease, occurring at a period of life when the constitution and particular structure are both opposed to them? I apprehend not.—And lastly, as to little evidence of previous inflammation being traceable on autopsy, when a child dies in the second stage, that evidence *is* found; and if it survive through the usual course of the malady,

one of its undoubted effects, *effusion*, is almost invariably present; and moreover, the mere absence of an apparently inflammatory state is not conclusive against either its previous existence, or the essentially inflammatory nature of the past morbid affection. The usual duration of Acute Hydrocephalus, as before stated, is from a fortnight to three weeks, and in that time it is obvious that the cerebral mass may have undergone considerable congestion and inflammation; although, on afterwards inspecting the head, we perceive neither the one nor the other. Dr. Monro, of Edinburgh, lately attempted to revive the old doctrine of Hydrocephalus being the effect of *debility*, as formerly thought by Drs. Whytt and Darwin, and not the result of inflammation. His ingenious arguments in support of (I had hoped) an exploded doctrine, met, in the journals of the day, a masterly refutation from the pen of Dr. Mackintosh.—"Debility indeed!" well may we exclaim, with a late writer, "debility, the Circe of fevers, which has been more hurtful to suffering humanity than earthquakes to the physical world."

Dr. Rush has written to prove that the disease, in its first stage, is the effect of causes which produce a less degree of that inflammation which constitutes phrenitis; and that its second stage is the effect of a less degree of that effusion which constitutes serous apoplexy in adults. The first morbid status he has termed phrenicula; that

existing in the latter stage, chronic apoplexy. Commenting on this view by Dr. Rush, Dr. Cheyne remarks as follows—"It ought to be recollected that Hydrocephalus scarcely ever affects the adult, and frenzy as seldom occurs in childhood. They are diseases of different conditions of the brain, the nascent and adult state of the organ. Frenzy is an endemic disease. Hydrocephalus I should suppose to be a very general disease, at least it prevails in very different climates, both in the new and the old world. Hydrocephalus I have oftener seen in children with dark eyes and complexion; phrenitis is the disease of the sanguine and the choleric. All this should imply something different in the essence of the two diseases. Lastly, it should be recollected that in Hydrocephalus the centre of the brain is the part generally affected; at least, in most cases, we find the effusion on the surface of the brain bearing no proportion to that of the ventricles, and the cortical part of the brain sound, while the central parts are broken and dissolved; whereas the effects of phrenitis are more superficial, being sometimes apparently confined to the membranes. The assertion of Dr. Rush, that the second stage of Hydrocephalus is the effect of a less degree of that effusion, which produces serous apoplexy, is gratuitous; and the violation of nosological propriety, in giving a distinct name—chronic apoplexy—to this stage, is unnecessary; for it is not effusion which produces apoplexy, neither are the

symptoms of the second stage of Hydrocephalus, the effect of effusion; nor is the effusion less in degree in Hydrocephalus than in apoplexy." Granting due weight to these arguments of Dr. Cheyne, I cannot but think with Dr. Rush, that Hydrocephalus is truly an inflammatory affection of the brain. Yet, whilst so judging, must it be inferred that, in the writer's opinion, the disorder is strictly analogous with adult encephalitis? Assuredly not: the structure of the child's head presents a status different to that of the adult, and its functions and disorders are doubtless greatly modified by its imperfect condition. But, admitting thus much, I feel anxious to substantiate the *inflammatory* nature of the disease, aware, as I am, that professional opinion widely differs on the subject; feeling, as I do, that treatment based on a different view will prove inefficacious; and convinced, as I am, that if the inflammatory symptoms are ever indistinct during life, or the appearances inconclusive after death, they are so, not from the doubtful nature of the disease, but from the peculiar cerebral organization of early life. Sprengel has satisfactorily demonstrated, and even Dr. Monro admitted, that a strumous diathesis is the great predisponent to Hydrocephalus. Now, granting this fact, and recollecting, in other parts of the human economy, the *character of strumous inflammation*, is not much of the obscurity attending the pathology of the disease, on this simple explanation accounted for? I really think it is.

Infantile encephalitis, or Acute Hydrocephalus, although a disease, as before stated, so frequent, is not uncommonly confounded with others ; for example, with *Vermination*, with *Typhus*, with *Infantile Remittent Fever*, and occasionally with *Chronic Hydrocephalus*. The appearance of the evacuations, the condition of the abdomen, the state of the pupil, and the character of the pulse, enable the attentive practitioner to distinguish the complaint from the first of these. In Hydrocephalus the evacuations are few, in vermination frequent and scanty. In vermination the abdomen is tumid, in Hydrocephalus generally otherwise ; in the latter the pupil is always greatly affected, in vermination only occasionally so,—and lastly, the pulse in vermination is but little disturbed, whilst in Hydrocephalus it is abnormal, not merely as regards its frequency, but as presenting an intermittent character. The first stage of the complaint is occasionally stimulated by phenomena arising from repletion or improper food, causing directly disorder of the stomach, and indirectly congestion of the brain. Of all diseases, however, none approach its character so closely as vermination. As to the diagnosis between Hydrocephalus and typhus, suffice it to quote the simple but practically valuable remark of Dr. G. Gregory ; "The only manner" observes that useful writer, "of distinguishing between the diseases is by bearing steadily in mind that idiopathic fever is not common in young subjects,

and that Hydrocephalus is. Unless, therefore, the evidence be very unequivocal, (as where the disease can be distinctly traced to contagion) the symptoms should always be attributed to Hydrocephalus, and not to typhus." Minuter diagnostics might readily be laid down, but reflection upon the two diseases, and still more a little observation of the two maladies, will readily suggest them; and, equally applying the observation to Chronic Hydrocephalus and Infantile Remittent Fever, let us now proceed to the next practical consideration—a most interesting one.

The question, as to Acute Hydrocephalus being curable, is one frequently mooted by experienced men. Conversant with this fell enemy of the young, they observe how impossible it is, in many instances of recovery, to satisfactorily determine whether the *essential* constituent of the developed disease has or has not been present. They know from reiterated observation how difficult a thing it is to check even the undeveloped disease; and they are painfully sensible how almost invariably, when effusion has ensued, it baffles every measure which anxiety can suggest or medical art supply. On the other hand, we daily read recorded cases of Acute Hydrocephalus cured, and, in doing so, cannot fail frequently to be surprised at the apparently simple means by which a task, considered by the bulk of the profession so difficult, has been achieved. Whence the discrepancy? Wherefore is

it that instances of the malady, treated with every thing that could promise good should prove fatal; whilst, in other instances, it appears to have yielded to remedies generally regarded as all but inert? Whence is it that a performance to one practitioner so insuperable, to another should be so easy? The answer, I apprehend, is to be found in the vague state of medical phraseology, or rather medical logic. If a child have laboured under the premonitory stage of the disease, on its return to health, the little patient is said to have been cured of Acute Hydrocephalus. If the inflammatory stage, or active aggression of the complaint, in another instance, has been promptly met and overcome, it is equally asserted that a wonderful recovery has been effected. But unless a qualified explanation of these suppositious cases accompany their relation, how delusive are they to the student, how prejudicial to medical science! Fischer, Percival, Whytt, Cheyne, Mosley, and Quin, have severally recorded successful cases. But their records are what medical records should be, not unqualified assertions, but the dispassionate reflections of thinking and impartial men on well authenticated data. "If this disease," writes Fischer, "fatal in most cases, is now and then subdued by art, it is only when it is detected in the first moments of its origin;" a sentiment echoed by Quin.—Dr. Whytt declares that he did not save more than one in twenty cases. Cheyne observes, "when the disease

is discovered early, it is a dangerous, not an incurable malady," by implication saying that when developed it is mortal. Formey relates that in the *effusive* stage he has seen *one* child recover. Thomson, Golis, and many other eminent authorities assert that Acute Hydrocephalus, when fully formed, that is, when effusion has ensued, "yields to no remedy." My own humble opinion is, that the disease is occasionally remediable, although it may have developed even its third, or *effusive*, stage. That this is the case perhaps once in thirty cases I feel, from extensive experience, satisfied; as I am equally convinced that in the twenty-nine, or very great majority, the stage just alluded to is but the harbinger of death. A child, particularly if not of strumous diathesis, should never be condemned and left to its unaided powers, even in the apparently eleventh hour of its existence. Although convinced of effusion the medical attendant cannot estimate its extent, cannot appreciate the power of nature's efforts, or by possibility know what the cerebral mass, in the way of absorption, is equal to, particularly if the latter be aided by well directed remedial means. It is stated by Martinet (when speaking of the anatomical characters of this disease,) that "sometimes no fluid is found in the ventricles, though dilated, which *arises from the fluid being absorbed immediately before death had occurred.*" Provided this inference, drawn by one of the most esteemed pathologists of

our day, be correct, is the possibility of cerebral absorption so imaginary as some would have us to believe? Hence, whilst considering all cases presenting the fully developed disease as most unpromising, I would anxiously advocate their never being regarded as utterly hopeless. "If by Hydrocephalus" remarks a late author, "be meant water in the brain, I hesitate not to assert that it never was and never can be cured, since admitting the existence of absorbents in that organ, which I am not disposed to deny, although they never have been demonstrated, it is physically impossible that under such a state of the system, they can remove the deposition, and restore the inflamed parts to their integrity." Let us dwell a moment on this sweeping declaration of Dr. Pearson Dawson. That children, thus situated, have been cured it is obviously impossible to *prove;* but I am thoroughly satisfied that many cases, by judicious treatment, have been recovered, which from their very recovery may have been presumed never to have passed through the *effusive* stage of the disorder. Nor, although I entertained a contrary opinion, should I venture upon such an unqualified assertion as Dr. Dawson's—knowing, as he must do, that it runs counter to the testimony of not a few of the most experienced in the profession. The brain, it may be, has few *absorbents,* strictly so called, to be "demonstrated;" but it is most amply endowed with *veins*, and perhaps Dr. Dawson can demon-

strate that those vessels in the head are deficient in a faculty pretty generally granted to them in other parts of the body. The same author, in continuation of the subject, observes, "Nothing is more injurious to the art of medicine than for practitioners to be smitten with the love of accomplishing great cures, since those who are on the alert for them will seldom be disappointed." The remark, *per se*, is partially just, and, as all Dr. Dawson's sentences are, well worded; but once admit its principle as universally applicable and as influencing our conduct, and the injury to poor humanity, as well as to medical science, would be incalculable. An advocate labouring for his client, when ordinary means fail, has recourse to those extraordinary measures which the law or his own ingenuity can afford. Similarly, I apprehend, ought to act the medical practitioner whose anxious efforts for recovery should only expire with his patient.

To proceed to the *treatment*.—As soon as a child presents any of the premonitory symptoms characteristic of impending Hydrocephalus, minute inquiry should be instituted to determine, if possible, the *cause* which may have given rise to the disturbance of its health. The most obstinate attacks assuredly are referable to *family predisposition*, the influence of which upon cerebral disease is daily observed. Suffice it, therefore, on this subject to remark that Dr. Underwood noticed six children, born of the same parents, die successively of Acute

Hydrocephalus, at the age of two years; and Dr. Cheyne mentions a father so unfortunate as to lose no fewer than seven children by this devastating malady. It is obvious that all attempts must fail in removing *this* cause of the disorder; but its known operation should lead to early and energetic measures. Should *exposure to cold* have taken place, additional clothing, mild diluents, the warm bath and nauseating medicines must be had recourse to, along with the remedies hereafter to be mentioned. If, on enquiry, it appears that the child's stomach has been deranged by *improper diet*, a few brisk emetics, by unloading the primæ viæ, and equalising the circulation, will be found useful. Provided *teething* excite the cerebral disturbance, free gingival scarification should occasionally be made, not generally, but over the teeth most advanced. The relief afforded by this simple measure can only be fully credited by those who are daily witnessing the mal-effects of difficult dentition on the sensorial organs of the child. If *vermination* be discovered to be the foundation for the disorder's aggression, anthelmintics must be had recourse to. Should *eruptions* have injudiciously been suppressed, artificial ones must, as soon as possible, be substituted for them.

The medicines, in the first stage of Hydrocephalus, which I have found to answer best for preventing the full development of the malady are purgatives, such as jalap, senna, rhubarb, scam-

mony, castor oil, the neutral salts, and calomel. Respecting the last mentioned we have the following concurrent and emphatic testimony from Dr. Golis.—"Of all the medicines which have been highly praised for the Acute Hydrocephalus, calomel is the most efficacious; in the turgescence and beginning of the inflammatory stage, I may almost call it a specific; it excites, as it were, an abdominal or intestinal ptyalism, loosens the coagulating power of the lymph; lessens, by the action which it excites in the alimentary canal, the orgasm in the head; and awakens more activity in the ends of the serous vessels by which absorption is increased." Whilst, however, appreciating and, equally with Dr. Golis, advocating this remedy, it is necessary to caution the junior practitioner against its too long continuance, or too free administration. Judiciously employed, calomel assuredly is the most powerful means we possess for combating the early stages of Acute Hydrocephalus; but when abused, as the remedy in common with most others occasionally is, its effects in this climate are deplorable. "In all things which our art contains," well remarked Dr. Mead, "there is nothing that does good but what may also do harm; and when any remedy is used *indiscriminately*, it must, of necessity, be very often used improperly." Calomel, then, must be administered discreetly, in combination with the purgatives before mentioned. As adjuvants, calculated to

relieve the congested vessels of the brain, cold applications and vesicatories have long enjoyed considerable reputation. The former, even with the youngest, are agreeable to the feelings, diminish local heat, and lessen sanguineous determination. To the latter, however, viz: blisters, as applicable to the head, on the first aggression of Hydrocephalus, I am generally opposed; not however meaning to say that, in congestive cases arising from suppressed scalp discharges, they are not appropriate remedies, but wishing to be understood as applying the remark to vesicating the head under all circumstances, on the approach of the complaint. The local vascular excitement thus induced, previous to the cuticle being raised, I apprehend, does more harm to the cerebral mass, at this *early* period, than good attends upon the partial abstraction of resulting fluid. Sub-acute forms of the malady do however, occasionally present themselves, wherein the child's sanguiferous system is little affected. In these less common varieties of the disease, early blisters to the head are probably allowable; and, if kept permanently discharging, may constitute an appropriate means of cure. To their application on the calves of the legs, round the arms, or on the sternal bone, in every variety, and at all periods of the complaint, there can be no objection, but otherwise, as they may prove useful as derivants. *To remove, then, all exciting causes—to administer smartly acting*

purgatives, especially calomel—to constantly apply cold lotions to the head, with an occasional blister to distant parts, appear, and have proved to the present writer, the best means of combating the *congestive* or *premonitory* period of the disease under consideration. And now to its second stage.

Considering that when Acute Hydrocephalus is fully formed ; in other words, when those various morbid phenomena detailed as the symptoms of the confirmed disease are present, that we have neither more or less than *infantile cerebral inflammation to treat*, the remedies to be employed suggest themselves on established principles of therapeutical science. It is necessary, however, to premise, before alluding to them, that as hydrocephalic inflammation is a modified one, so must the application of curative means, in reference to particular cases, be also modified ; and, moreover, that if the present writer errs in estimating the comparative value of any of the agents mentioned, it is neither from lack of most ample opportunity whereby to have arrived at more just conclusions, or the absence of a sincere desire impartially to have done so.

From the marked influence of *blood-letting* in cases where its employment has been judiciously timed, many practitioners have been led to imagine the remedy applicable to each and every variety of Hydrocephalus—whilst others who have probably

only seen it misapplied, both as to *period* and *extent*, not merely consider blood-letting unnecessary, but actually prejudicial in a disease presumed uncontrollable by ordinary antiphlogistic means. The truth appears to be, that abstraction of blood is, generally speaking, superfluous in the turgescent stage, as it is injurious when effusion has supervened; but in the intermediate stage, now under consideration, most invaluable. For children under five years of age, I consider local blood-letting preferable to general, and behind the ears or the temples, the sites most favourable for its employment; as, at these parts, pressure easily regulates the quantity to be taken. The first abstraction should ever be a free one; large, of course, relatively to the age and constitution of the suffering child; as reiterated observation and the testimony of most practical writers on the complaint equally tend to prove that one bleeding, to a certain extent, will prove infinitely more efficient than the same abstraction of blood at two or more different times. In some cases the inflammatory stage of Hydrocephalus comes on quickly and tumultuously, in others slowly and insidiously; some children are full blooded, and others exsanguineous; hence it is impossible, or rather would be improper, for any writer to specify a given quantity of blood as the appropriate measure to be taken, or to lay down the number of times the operation must be repeated. I have, even in smart attacks, succeeded

with once bleeding; but more frequently have had occasion to bleed twice or thrice; or even oftener. Of course this important practical point can only be determined by the circumstances of the case, and the intuitive judgment of the medical attendant. It may however generally be remarked that we had better over-bleed than take too little; as nature seldom fails to repair the error in the former instance, whilst disease will baffle every remedy in the latter. Nauseating medicines are advantageous in the inflammatory stage; they lessen the excitability of the heart, and, by their sudorific properties, diminish the quantity of circulating fluids; thus, in a double way, relieving the labouring vessels of the head. Tartarised antimony and ipecacuanha are those generally had recourse to. In the cases of very young children I prefer the latter, in powder; for children of more advanced age I would recommend the former under the vinous form. These medicines have a third beneficial effect by materially aiding the operation of purgatives, which are never to be overlooked in any stage of this malady. The remedies of this last mentioned class, adapted for the period we are considering, are those before mentioned (treating of the turgescent stage) to which with advantage may be added aloetic enemata, should the bowels be torpid, or the stomach refuse medicine—two very common occurrences. If the practitioner has not been summoned to the sick child until this stage of the malady, no time should be

lost in delaying the employment of mercury, as, after blood-letting, this remedy is most important. And, if it has been administered previous to the setting in of the inflammatory symptoms, its use must steadily be persevered in. Those who have seen much of the disorders of children, well know that their most anxious endeavours to control the violence or check the progress of infantile disease occasionally appear altogether fruitless. Thus, the inflammatory symptoms of Hydrocephalus may have been promptly met by repeated abstractions of blood—by the administration of active aperients—the depressing operation of nauseants, and the alterative influence of mercury—and, yet, the child's vascular system shall continue excited, the head be still incessantly rolled about, and the characteristic scream be still heard. At such a time, in practice too frequent, it has been my custom to administer opium, under the form of Dover's powder or Battley's drop, with the happiest effects. Indeed, with children *so circumstanced*, a full opiate occasionally acts like a charm. The heart's action abates—the cerebro-nervous system is soothed—the harrassed child, after nights of watchfulness, drops into a slumber—awakes in the morning refreshed—saved! Having witnessed this desirable change frequently, I cannot understand how Dr. Clarke (experienced as he doubtless was) acquired his universal antipathy to opiates in infantile disease. It is true they are frequently abused, still

more frequently mis-used ; but of what remedial agent can we not affirm the same ? Every medical practitioner is familiar with the physical operation of opium ; but few, very few perhaps, sufficiently study the *timeing* its administration !

Many entertain the opinion that as soon as evidence of *effusion* having taken place exists, the treatment of Hydrocephalus should be merely *palliative*, and that all remedial measures, in a curative point of view, being useless, our sole object should be to avoid every thing calculated to disturb the little sufferer. Having alluded to the extreme difficulty of attaining a *conclusive* diagnosis as to the exact cerebral status ; having asserted the occasional curative influence of nature and art upon even admitted effusion; and differing *toto cælo* with the advocates of the palliative plan, even on the very ground alledged by themselves, viz : humanity, I shall venture to submit some measures which experience has shewn me not to be entirely unworthy of trial even at the eleventh hour. For cerebral effusion, then, no remedies equal, in my opinion, foxglove and mercury ; the first in the form of tincture, and the latter under that of ointment. To comment on the virtues of so universally known a medicine as digitalis, might possibly be thought superfluous ; but treating of it, relatively to Hydrocephalus, it may be allowable to record my additional testimony in its favour. By its action on the kidneys, digitalis relieves the vascular

system without impairing the animal powers, as blood-letting would do; by its singularly sedative influence on the nervous system generally, and brain more particularly, it diminishes the number and lessens the violence of the convulsions; and lastly, I apprehend, it exerts a beneficial influence, by aiding the operation of mercury,—not to mention its preventing those shrill screams so distressing to a mother's ear. The mercury can be introduced into the system by inunction on the axillæ, or at the inside of the thighs. Our object is gentle continued ptyalism.—Enemata, either sedative or aperient, as the case may demand, are, for the *effusive* stage, very suitable; as it rarely happens that the child will, or is able to, take much medicine by the mouth. Nor indeed, for regulating the first passages, is it desirable, when the former means of relief are so easily had recourse to. The whole of the head should be vesicated, in successive third portions, and the blistered surface be kept discharging, as long as feasible, by the stimulant application of resin, savine, or mercurial ointment. Setons in the neck have been highly lauded. They are, in the estimation of the present writer, derivants more particularly adapted to the complaint after it has assumed a chronic character, —and useful in obviating a threatened relapse. Should the child's deglutition be unimpaired, there is occasionally evidenced considerable desire for food. When this is the case, nutritives, as beef

tea, veal broth, or well made jelly, *in small quantity*, should be frequently allowed—and if the animal powers are greatly prostrated, spiced wines may, with advantage, be added. "Many children," remarked that admirable practitioner, Armstrong, "are lost by *continuing* an active treatment after the original disorder has been removed; another, in truth, being thus set up and supported."

With the view of diminishing the irritability attendant upon weakness, camphor, valerian, and bark will be found useful; as also will the tincture of iodine. To conclude—in a great majority of *confirmed* cases of Hydrocephalus, all remedies will fail. In a few our endeavours are crowned with the most gratifying results,—hence we should never despair. "On reviewing our conduct in these trying scenes," writes, on another occasion, the eloquent Lawrence, "when all our efforts have been unavailing, the reflection that nothing has been omitted which the resources of our art rendered possible—nothing neglected which more diligent study and more active pursuit of knowledge could have supplied, will be a support and a consolation. What must be the feelings of those to whom this consolation is denied! who feel a doubt whether the fatal event has merely exemplified the limited efficacy of art, or has been owing to their own ignorance or incompetence!"

THE END.

Preparing for the Press.

(BY THE SAME AUTHOR)

PATHOLOGICAL RESEARCHES

ILLUSTRATIVE OF THE

DISEASES

MORE PARTICULARLY INCIDENT TO

COMMERCIAL LIFE.