II.

On the Nature and Treatment of Tetanus and Hydrophobia, with some Observations on a natural Classification of Diseases in General. By Robert Reid, M. D. Licentiate of the King's and Queen's College of Physicians in Dublin, Member of the Royal Medical Society of Edinburgh, &c. Dublin, 1817. pp. 136.

This little treatise, of which a part first appeared in another form in the Transactions of the College of Physicians of Ireland, Vol. I., is divided into three chapters, and a short appendix. The subject last enumerated in the title-page occupies the first part of the book, and presents us with the author's ideas on the classification of diseases, according to the nervous masses by which the organs are supplied, viz. the brain, spinal marrow, and ganglions. The principles of this classification are subsequently applied to the pathology of tetanus and hydrophobia. As we do not intend to enter into any theoretical discussions at present, we shall confine our critical analysis principally to Dr Reid's practical remarks; and of these we shall chiefly select such as illustrate the morbid anatomy of tetanus; for, from no inconsiderable experience, we are assured that it is in the dissecting room principally we can arrive at any just pathological views on the subject. Speculations are endless; the disease affords food for them even to satiety; and to how little purpose they have hitherto been pursued, must be quite apparent to any cool and reflecting man who opens any one of the countless treatises which have been written upon nervous diseases, from the time of Hippocrates to the present day.

The spine is the point to which Dr R.'s views are directed. In this he is by no means singular, for we know it to have been the object of particular inquiry among several well informed practitioners for some years past; and we must confess that it has long appeared to us to be the situation in which the morbid anatomist is most likely to be repaid for investigations which, from the very nature of the dissection, must be more laborious than those in any other part of the body. We claim no originality in this; and we are by no means inclined to concede it either to Dr Reid or to any other British physician; although
the Doctor seems to think that the state of the spine has not been taken notice of by any modern except himself. Now, not to mention Burserius, from whose Institutes a long passage is quoted by Dr Reid, in which reference is made to Fernelius, Morgagni, Lieutaud, and Valsalva, besides others less known in this country, surely few well informed physicians, though they may not have had access to the admirable dissertation by Dr Frank, ("De Vertebralis Columnae in Morbis Dignitate," Pavia, 1791,) can be ignorant of its existence. Since that work was published, many teachers and writers in Italy, France, and Germany, as well as in our own islands, have turned their attention to the subject.* Periodical essayists and debating societies have also of late been much occupied with it; and without any precise theory having been publicly promulgated from the press, every one knows, that for some years, it has been quite a medical rage to refer all diseases to the spinal marrow, whatever may have been their nature, symptoms, or degree; and the junior proselytes to this doctrine are as active and clamorous in the enforcement of their opinions, as was the "Toinette" of the inimitable Moliere, in representing the lungs as the seat of the countless maladies concentrated in the person of Monsieur Argan;

"Le poulmon! Le poulmon! Le poulmon! vous-dis-je."

The following is Dr Reid's account of the morbid appearances.

"In the first two patients, which I had an opportunity of examining, the disease did not prove fatal, until the fourth day. No morbid appearance could be discovered in the viscera of the thorax or abdomen. The only appearance of disease that could be observed in the brain, was some increased vascularity, particularly in the membranes; but there was a considerable quantity of water flowed from the spinal canal, after the brain had been removed.

"On the 25th of February, having occasion to visit, about three miles from town, I was requested to see a boy, aged thirteen, who, the night before, had received a severe burn in the toes of the left foot. I was informed he was a beggar, who went about the country, exposed to the vicissitudes of the weather, during an inclement season; and that the evening before, he went to rest in a lime-kiln, where he was found, the next morning, in the state I saw him. Having no friends, nor habitation, I directed that he should be sent to

* We particularly allude to the Lectures of Dr Saunders, delivered in this city, we believe since 1808. And we would refer to the valuable paper of Dr Abercrombie, in our last volume, for notices of many other authors besides those already named.
the Richmond Surgical Hospital, where he remained under treat-
ment for four or five days, when tetanus came on, with the usual
symptoms, and in thirty-six hours after the first attack, he expired.
I did not, however, see him again until after he died.

"On examination of the body, after death, the viscera of the ab-
domem and thorax appeared perfectly natural, and there could not be
discovered any morbid appearance in the muscular parts. The
brain appeared healthy in every respect, except some increased vas-
cularity in its investing membranes.

"Upon opening, however, the cavity of the spine, from the back
part, there appeared to be a fatty substance, deposited in the cellular
tissue, investing the dura mater, for the extent of several of the dor-
sal vertebrae. On raising the nervous mass (with its dura mater
entire) from the spine, there appeared a considerable effusion of
blood into the cellular tissue, connecting it to the upper lumbar and
lower dorsal vertebrae. A similar effusion occurred also along the
bodies of the upper dorsal, and two inferior cervical vertebrae. On
slitting up the dura mater, on its anterior surface, or that next the
bodies of the vertebrae, the nervous mass appeared highly vascular,
and the vessels, of every description, remarkably tortuous. In the
part which was situated opposite to the ninth and tenth dorsal verte-
brae, there appeared a whitish substance, very nearly resembling the
medullary matter effused between the arachnoid coat and pia mater,
occupying the space of about an inch and half, and covering about
half the circumference of the nervous mass. On breaking the mem-
brane enclosing it, I could wipe it off, and there could not be the
slightest rupture discovered in the pia mater, or any of its ves-
sels. The only appearance in the nervous substance itself, that I
could discover, was a deeper tinge than natural, in its cortical and
medullary parts." p. 34—37.

Dr Reid illustrates this last dissection with a plate, which
certainly we cannot compliment as any proof of graphic skill.
He then proceeds to draw some practical conclusions from his
dissections, and those which he quotes from Burserius. The
sum of them is,—that the disease is of an inflammatory nature,
and that its principal seat is in the membranes investing the
nervous mass of the spine, the vessels of which present the tor-
tuous appearances characteristic of membranous inflammation;
the peculiar characters of the opisthotonos, emprosthotonos, &c.
&c. will, he thinks, be determined by the situation in the spinal
channel, which is occupied by the effusion. Watery, or other
effusions, will be thrown out into the canal, when the disease
has not been so violent as to destroy the patient before the
third day, and may always be expected to occur where it has
been of long continuance; and lastly, he mentions, that irri-
titating the spinal marrow of a decapitated animal, without com-
pressing it completely, throws the muscles into a state resem-
bling tetanus.
We find but one observation which strikes us as new and remarkable, in his section on the "Causes of Tetanus." It is this: That soldiers are more liable to tetanus than sailors; to which it appears to Dr Reid they may be very much predisposed, in consequence of their wearing knapsacks! Horses also, he assures us, are more subject to this disease than other animals, from analogous reasons. As we conceive this to be a very curious speculation, we shall extract the passage, in hopes that some active measures may be taken to unload the spine and its vessels, by those official persons to whose province it peculiarly belongs to attend to those weighty concerns; contenting ourselves with suggesting the propriety of transferring the burdens to the bellies of the men and horses; this might diminish the chances of tetanus, and it might moreover tend considerably to obviate the calls of hunger by the pressure on the stomach, after the fashion of the Indian warriors.

"The exposure of the body to the vicissitudes of the weather, appears to be the most general predisposing cause to this disease. Thus we observe, that in the army it is prevalent during the campaigns, where the men have been exposed to the inclemencies of the season. It is, however, a remarkable circumstance, that this dreadful malady is very seldom met with, even in its slightest stages, among the navy, while it is found generally fatal to military men." p. 46.

The Doctor accounts for this by the regularity of the naval service, which habituates the seamen to the vicissitudes of the weather, while soldiers, though defended in barracks, are much exposed in an active campaign. He then proceeds to the affair of the knapsacks.

"It may be useful to take notice here of another circumstance which gives a predisposition in soldiers to this disease, and to which sailors are not exposed. We observe that soldiers are unavoidably obliged to carry a certain portion of their luggage in their knapsacks on their backs. Now we know that, in an active campaign, it is impossible for nature to adapt itself to the various changes which must occur in the temperature of the parts in the vicinity of the spine, by wearing the knapsack or not, at such uncertain periods.

"Indeed, circumstances analogous to this would seem to account for horses being more liable to this disease than any other quadruped."

We do not find that military officers are less liable to tetanus than their men, although they carry no loads on their backs; but we believe we have found a clue to this ideal naval exemption. Dr Dixon, whose admirable paper in the Medico-Chirurgical Transactions is known, no doubt, to almost every British surgeon, has observed, that tetanus was much less common
in the fleet in the West India islands of late years than formerly, when Sir Gilbert Blane, and other able physicians, wrote their accounts of the diseases of seamen. This he attributes, not to any difference in the physical constitutions of seamen, or in their modes of living, &c. &c. but to improvements in the treatment of their wounds, medical as well as operative, and particularly to the greater attention paid to the state of their bowels. This, we believe, to be the foundation for the idea of sailors being less liable to tetanus, after their wounds, than soldiers; at least, if any other grounds exist, we must profess ourselves ignorant of them. Although Dr Reid takes very little notice of the distinction between idiopathic and symptomatic tetanus, a matter which we conceive to be of the utmost importance in the treatment, yet, in common with all other writers, he observes, that it most generally happens in consequence of wounds. We confess, that had we not his assurance that this dreadful malady was seldom met with among seamen, even in its slightest stages, we should have been led to look for it particularly in them, considering their activity during war, and recollecting what we have seen in the journals of many naval surgeons. On referring to some of these which have been placed within our reach, and particularly on again consulting Dr Dixon's communication, we find, that this supposed exemption did not exclusively apply to the navy, but was extended also to the army in the West Indies, as may be seen in the letter of Dr M'Arthur annexed to Dr Dixon's report.

* Med. Chir. Transactions, Vol. VII. p. 476. Sir Gilbert Blane informs us, that the number of wounded in the actions of April 1782, in the West Indies, was 810, of whom 20, or one in 40.5 were attacked with tetanus, 17 of whom died. (vide Diseases of Seamen, p. 3. chap. 4.) In the army in the Peninsula, from December 1811 to June 1814, 20,886 wounded soldiers were admitted into the regimental hospitals. Sir James M'Grigor has not been able to state to us particularly how many of these died of tetanus; and, indeed, considering the multiplicity of hospitals, their dispersion over an extensive country, &c. &c. it is little to be wondered at that he could not. But we find in his valuable Tables, (Medico-Chirurgical Transactions, Vol. VI.) that no more than 506 of these men died of their wounds. Now, if we suppose that every one of these individuals was carried off by tetanus, still it will not amount to the proportion observed in the navy, being little more than 1 in 41.

Making every allowance, however, for the West India climate, &c., on one side, and the deaths that may possibly have happened in general and detached hospitals, or which may have been unnoticed, on the other, still we have no reason to suppose that soldiers are more peculiarly liable to the disease than sailors, or that it is slighter, or less fatal in one service than the other. We may here remark, that it is well known to practical men, that tetanus occurs much oftener in some seasons than in others, and in certain districts, or even hospitals of the same town, than in others, (vide Hennen's Military Surgery.)
Dr Reid on Tetanus, &c.

We now turn to the section on the treatment of tetanus. Now and then we hear of cures, but they are "few and far between;" and, we believe, that those military practitioners who are the best acquainted with the complaint, and whose experience is recorded in the valuable paper of Sir James M'Grigor on the Diseases of the Army in Spain, are those also who have the least sanguine hopes of its admitting of a fortunate termination.* Of the comparatively few successful cases on record, perhaps not one-half have been treated upon the principles deduced from any preconceived pathological views, but the "methodus medendi" has been taken up on the purely empirical ground of experience or imitation. We would by no means wish to damp the spirit of investigation by this remark, or by any other which may fall from us in this paper; our object is rather to excite it,—to direct it to the proper channel, and to keep it steadily in that direction, undisturbed by the effervescences of fancy, and unbeguiled by that destructive mental "Will o'-the-wisp," premature generalization.

In justice to Dr Reid, we shall give an outline of his theory of tetanus before proceeding to his plan of cure. Some muscles, he observes, resist the tetanic spasms for a long time, viz. those of the thoracic and abdominal viscera, and those which belong to the five senses; thus, though vomiting sometimes occurs it seldom continues; the appetite remains;—digestion and secretion are carried on;—and, during the remissions of spasm, circulation and respiration usually return to their natural state. All this shows that the ganglionic system is little affected. The tongue retains its mobility for a considerable time; the arms are not affected till long after the lower extremities; and then those muscles which move the fingers are the longest exempted from spasm. Besides this, there is seldom delirium or even confusion of thought. This shows that the cerebral system and organs of the senses are little affected. Again, he remarks that the only parts of the body affected with the disease are the muscular; all the nerves distributed to these parts, and which are the proper stimulants to muscular action in the living body, take their origin from the nervous system of the spine. No derangement is

Yet, even admitting that the year 1782 was peculiarly productive of tetanus, and the years 1812, 13, and 14 peculiarly the reverse, still we shall find that there are no grounds for saying, "that it is very seldom met with, even in its slightest stages, in the navy." Indeed, we know, that after the action of Copenhagen in 1801, as large a proportion of tetanic cases occurred in the fleet, as after any land-battle during the war.

* Medico-Chir. Transactions, Vol. VI.
found on dissection in the structure of the muscles, hence it must be in the nervous system of the spine. He conceives, that the other systems, so far from being the seat of the disease, have rather a tendency to oppose it; but what seems, in the Doctor's mind, to set the theory beyond dispute, is the examination of the body of the wretched beggar boy, already detailed.

Dr Reid himself observes of this dissection, "that the remarkably circumscribed appearances of both the extravasations of blood, would at first lead one to imagine that they were the result of local injury." To this opinion we do "most seriously incline," considering that the unfortunate pauper was without friends or habitation,—exposed to every species of accident, and at length reduced to the dire necessity of going to rest (as the Doctor expresses it) in a burning lime-kiln. It is much to be lamented that the state of the nerves from the injured extremity up to their spinal origins was not examined; this would have given probability at least, if not a perfect confirmation, to Dr Reid's opinion.

We are by no means inclined to withhold from Dr Reid an allowance of praise for his chapter on the morbid appearances; for the dissections which he gives, and all other dissections in which we do not mistake the effects of disease for its cause, are of great importance to assist in yielding materials for the foundation of a rational theory, and of an effectual mode of cure. But it is not upon one solitary dissection, however scientifically conducted, nor upon the history of one or one hundred cases, however striking in their details, that we are to commence a premature pathological superstructure. How admirably has the illustrious Stewart pointed this out to our observation, and how happily has his vigorous language been adopted in the preface to the Transactions of that very association to which Dr Reid's paper on tetanus was originally read. The enlightened practitioner, it is remarked, "distrusting conclusions which rest upon this or that individual case, is anxious, by combining those of an immense multitude, to separate accidental conjunctions from established connections, and to ascertain those laws of the human frame which rest on the universal experience of mankind." * On examining the annals of physic, we do not find that the most enlightened practitioners have been the most distinguished for the boldness of their theories, or for their readiness in forming them; nor, indeed,

* Stewart's Philosophy of the Human Mind, Vol. II. p. 469, 2d Edition, as quoted in the preface to the First Volume of the Dublin Transactions.
is every medical philosopher, even among the ingenious, qualified for minute inquiries in morbid anatomy, and particularly for spinal dissections. The author himself, in his note at page 36, furnishes us with a striking lesson of the necessity of a pathological anatomist being intimately acquainted with the sound structure before he undertakes to theorize upon the morbid. "Since writing the above," says the Doctor, alluding to the case of the boy formerly quoted, "I find that this fatty substance is natural to the part. It was taken notice of in the examination of this case on account of its being absent at both parts of the column exactly opposite to where the extravasation was afterwards found, on raising the mass from the vertebrae." On this we shall observe no farther. It speaks for itself, and it assuredly harmonizes very badly with a subsequent attempt to correct the common descriptions of the accessory nerve of Willis, given at page 94. This, the Doctor in another note informs us, he has not yet found accurately described in any English author.

Dr Reid asserts positively, that the thoracic and abdominal viscera are never primarily affected, and that the disease cannot take its rise in the nervous substance supplying these organs. (p. 26.) Some authors, indeed, he observes, have mentioned morbid appearances in these parts, but they were evidently the effects of the disease, or of the remedies employed for its relief. Now, it so happens, that there are cases on record in which primary affectations of the par vagum, and of the phrenic nerve, have been the causes of tetanus. We have not an immediate opportunity of reference to the works of either Meyer or Vetter to give the cases or observations on them at length; but the former author states an instance of that disease proceeding from an ossification of the pleura irritating the phrenic nerve; and Vetter gives another instance in which an irritation of the par vagum from an ossified gland in the trachea produced the same effect.* We have ourselves seen, or had access to the knowledge of various instances of tetanus, produced from injuries of the jaws and neck. It may be said that, in the latter situation, there is room for doubt as to the particular nerves which may have suffered the injury; the phrenic, or the recurrent, or the origins of the axillary plexus, &c &c. may have been affected; but tetanus has occurred under less equivocal injuries or irritations of the nervous substance, supplying the organs in the thorax and abdomen. Baron Larrey and others give instances where injuries of the pharynx by foreign bodies sticking in it have produced the disease. Intestinal irritation is a common source

* Sammlung med. Beobachtungen, p. 676; and Vetter, Aphorismen, p. 131, referred to by Ploucquet.
of it in children; and, perhaps, the most common of all, in that species of it, the lock-jaw of new-born infants. With regard to the injuries of the cerebral system, including the intellectual powers and the five senses—to what, we would ask, are we to refer the instances of tetanus from terror and from sympathy, on seeing others under the disease, if not to a certain degree of affection of the intellectual powers? We would by no means be understood as denying that, in a vast majority of cases, tetanus proceeds from injuries of the extremities, and principally affects the muscular parts; but it has also proceeded from injuries of other parts, rare though they have comparatively been. It has proceeded, as Dr Reid himself states, (p. 51,) from a slight stroke of the lash of a whip under the eye, which did not even break the skin. The extraction or insertion of a tooth has produced it in some instances; and the cases are extremely numerous, in which the injury has been so slight as not at first to have been felt beyond the sentient extremities of the nerves which form the organs of touch in the fingers. How, then, can that doctrine be maintained which denies the possibility of its production from affections of the organs of sense, or of any other system of nerves, but those proceeding from the spine? We have already professed ourselves convinced of the importance of inquiries into the state of the spine in this disease, but to make it exclusively answerable for all cases, appears to us to be a position altogether untenable in the present state of our knowledge, and likely to call down upon it the most untoward visitation that can possibly befall a theory, the indiscriminating ridicule of the thoughtless, and the silent pity of the thinking part of the profession.

We shall pass over the diagnosis and the prognosis, to come to the treatment; and here Dr Reid presents us with nothing novel in the mode of cure, or at all corresponding with the expectations we had formed from his previous pathological views of the cerebral, spinal, and ganglionic systems. He furnishes us, however, with a recapitulation, which we shall transcribe:—

It is prefaced by a remark, the veracity of which we are by no means disposed to question, viz. "that many particular circumstances may occur, which therefore ought to be left to the judgment of the practitioner."

"When tetanus is idiopathic, our first proceeding in the treatment should be to apply a blister along the whole length of the spine: for we find, that, in this case, the disease generally runs through its course with the utmost expedition. When, however, it has been induced, by an extensive injury, and that, from what has been stated, it would appear disposed to take on the chronic form; there is every probability advantage would be derived, by putting the patient under a mercurial course, and the blister may be held in
reserve, lest the disease may suddenly gain strength, before the mercury could take effect.

"The bowels should be evacuated once a day, or at least every second day, and when necessary to employ medicines for this purpose, calomel should be a principal ingredient.

"Copious general perspiration, which is most powerful in reducing the force of the disease, should be excited by the compound powder of ipecacuanha, (occasionally assisted, when necessary, by James's Powder,) and may be given in quantity, of from five to ten grains, every third or fourth hour.

"When the cerebral functions are threatened in this disease, we must support this system by stimulants. The Madeira wine, or something of that nature, is the best, and should be given in small quantities at a time, which may be frequently repeated, not, however, so as to cause intoxication." p. 76, 77.

We have a very few remarks to make on the theory and the treatment.—It has been our lot to see, or obtain correct notices of, perhaps, one hundred cases of traumatic tetanus; in no two did we ever find the symptoms exactly alike; and they most obstinately and pertinaciously resisted all attempts at classifying them under distinct or separate heads, or affections of systems. We have seen all the systems equally and synchronously affected. We have constantly seen the diaphragm among the first parts attacked, and pain from the scrobiculus cordis, along its whole course, the most urgent symptom. We have repeatedly remarked affections of the oesophagus, and of the muscles of deglutition, as the leading morbid phenomena. We have also seen severe retching, and even vomiting, from the very commencement to the end, in several cases; and, in almost every instance, we have remarked violent spasmodic affections of the intestinal canal, together with various other convincing and early marks of ganglionic and cerebral affection, and all these seeming to precede, rather than to be influenced by, the spasms of the muscular parts. We assuredly have also seen a progress of the disease the reverse of this. Dr Philip's experiments certainly show us, that on slightly touching with a wire the cut end of the spinal marrow of a decapitated animal, after the violent spasms had ceased, the muscles of voluntary motion are immediately excited into action; but they also show us, that, on approaching that part of the brain whence the spinal marrow and nerves originate, violent spasms are produced.*

We are not aware what effects would ensue on applying stimuli to the fore or back part of the spinal marrow, whether opisthotonos or emprosthotonos; but we are assured by the eminent physiologist above quoted, that the convulsions produced by opium, which cannot be supposed to act upon one part of

* Phil. Trans. for 1815.
the spine more than on another, invariably assume the form of opisthotonos.* Were we to offer an opinion without trying the experiment, we should doubt these consequences of mechanically irritating the different parts of the spinal cord. Baron Larrey, we know, long since supported the opinion, that injuries of the nerves on the anterior part of the body produced emprosthotonos, while those on the posterior were followed by opisthotonies. The answer to this is very simple;—wounds of the front of the body are much more frequent than those of the back, while emprosthotonos is an occurrence of so great rarity, that many surgeons doubt its existence altogether.

With regard to the cure, it appears to us to be a most essential point to separate the traumatic from the idiopathic species. The former is generally a rapidly fatal disease; the latter, so far from being, as Dr Reid describes it, a disease which "generally runs through its course with the utmost expedition," is often a much more mild and tractable affection, a fact well known to every planter in the West Indies, who never considers his negroes as safe when the disease supervenes on a wound, but is frequently successful in alleviating the idiopathic species. It is chiefly in these cases, and not where it occurs from wounds, that it is so apt to put on the chronic form. We shall not enter into an examination of particular remedies, as applied to either species; but we would ask any practitioner, when has he ever seen Madeira given so as "to cause intoxication"? For ourselves, we can safely assert that we have never seen an instance of a patient truly tetanic having been made drunk; nor have we ever known a single case where even an approximation to such a state has been produced by the most liberal, nay unbounded supplies of wine, brandy, and laudanum. Blisters we have often known applied to almost every accessible point of the body, without any relief; and as for sudorifics, the patients in the majority of cases have been in a constant profuse flow of perspiration of a most ammoniacal odour, which has produced no alleviation whatever of their symptoms. In truth, whenever we reflect upon what we have seen of tetanus, our hopes of a rational pathology, and of a successful practice, are sadly depressed.

We have left ourselves but little room to follow Dr Reid into his third chapter on Hydrophobia, which is, also, according to him, a spinal disease; and we the less regret it, as we found that we were not able to keep pace with his reasonings; for, with our utmost exertions, we "toiled after him in vain."

With regard to the treatment of hydrophobia, we must diff-

* Vide Experimental Inquiry into the Laws of the Vital Functions, by A. P. Wilson Philip, M. D. P. 105, 108, 148. London, 1817.
fer from the Doctor on the practicability and propriety of excision, which we conceive to be the most promising and easiest of all the modes of prevention. Of the powers of oxygen and acetic acid, which he recommends, we know nothing more than we do of at least an hundred other remedies proposed for the "cure of the bite of a mad dog." Of blood-letting, however, we happen to know the very important fact, that it has often relieved, and sometimes cured; although Dr Reid states, "that in no one instance is it asserted to have been attended with any advantage." In the 9th Volume of this Journal, however, (p. 22. et sequent.) he will find cases by Dr Berry, and by Dr Shoolbred of Calcutta, abundantly satisfactory on that point; and in the 11th Volume, (p. 413,) he will see references to several others.

In the appendix is a case and dissection of a soldier, which the author thinks strongly in support of his opinions on the spinal origin of tetanus and hydrophobia. We cannot afford room to transcribe it, and must refer to the work itself.

We suspect that some of the opinions supported in the present work are not quite unknown to us, and that, like the good Vicar of Wakefield, "we have heard all this before;" but whether our knowledge has been derived from reports of the lectures already alluded to, or from orations in the debating societies of the students of the university, we cannot say; we by no means, however, wish to deprive Dr Reid of the credit of having supported them with considerable boldness, and occasionally in a manner different from the ordinary mode in which we have heard them stated. Sometimes, indeed, his views have been presented to us in a way quite beyond our comprehension. This we might have tolerated; and we could have made ample allowance for an author pushing a cherished theory somewhat "à outrance," especially when we are satisfied that the basis of that theory is, in many points, sound; but we cannot reconcile to our sense of literary candour, the total silence which pervades the work, with regard to almost all that has been done upon the subject of spinal physiology and pathology, by contemporary individuals.* Whether this may have arisen from accident, from design, or from defect of information, it is not for us to decide; but we may venture to predict, that the future fame of Dr Reid would have suffered no diminution by a recognition of the labours of others.

We confess that we have not derived much satisfaction or in-

* Mr Brodie is once named in the first chapter, but neither Dr Wilson Philip, Mr Clift, nor Le Gallois, are mentioned throughout the book, and the existence of the Edinburgh Lecturer is not even hinted at.
struction from this essay, and certainly infinitely less than we anticipated from its first pages. We have no hesitation, however, in saying that its author is, in our opinion, an acute man, whose talents, if directed to points of pathology, and not warped by a favourite theory, may yet effect something much superior.

We have already stated it as our opinion, that much valuable information may be gained, by having more frequent recourse to examinations of the state of the spine. The difficulty of performing these has deterred many surgeons from the attempt, and it therefore becomes an object of importance to strike out a suitable and easy mode of conducting the process. We have seen the spinal marrow laid bare, by sawing on each side of the spinous processes from behind; a much easier, more simple, and more effectual way, is to saw through the bodies of the vertebrae obliquely on each side from within. A saw, after the model of Mr Hay's, may be advantageously employed for the purpose, but somewhat stronger and larger. The preliminary steps need differ in nothing from the ordinary mode of opening the cavities, and when the spinal canal and its contents have been examined, the bone can be dropped into its place again, and no greater mutilation will be apparent externally than in dissections as commonly conducted,—a matter of considerable importance in private practice.

We are not so sanguine as to suppose, that, in every case where the spine may be suspected, we shall be able to discover either the cause of disease, or a clue to its removal. We know, that in some instances a morbid state of the nerves has been discovered from the point of lesion to their origins; but we know also that very frequently no morbid appearances whatever have been detected by the most expert anatomical investigator. Nor will this appear singular, when the extensive sympathy which exists between the different parts of the body is considered. Indeed, we often find that parts which suffer sympathetically are more severely affected than those in which the organic lesion exists. How often do we see this in severe attacks of dyspepsia, in which the most violent symptom is pain, and sense of tension, and fulness in the head, while scarcely any morbid sensation is referred to the stomach itself. Blows on this organ often occasion fatal apoplexy, and blows on the head often produce their most immediate and distressing effects on the stomach. Frequently, indeed, we find severe injuries of one of these organs without any sympathetic affection being exhibited by the other; but we should not be discouraged by these and other seemingly inexplicable anomalies. Much has been done by ingenious and scientific men who have placed the reins of fancy under strict control; much, it is true, is still left unexplained, but the results
of the past afford us strong assurance of the ultimate success of future investigations. Le Gallois in France, and Dr Philip in our own island, have set before us most brilliant examples of patient and truly philosophic industry. By experiments ingeniously conceived and ably executed, they have removed many of those apparently insurmountable obstacles which perplexed the path of truth, and their labours, if duly appreciated, may enable less acute, and less original inquirers to explore it to its termination.

We had one additional observation to make to the junior classes of our readers, who may be inclined to prosecute the inquiry into the connection which may exist between the state of the spine, and that horrible and obscure disease which has formed the principal part of our critical analysis; we had intended to warn them against the error of overlooking all other causes except that favourite one which either the peculiar tenets of their early teachers, or some accidental circumstances, connected with their own practice or their speculative opinions, may have led them to adopt, but we find our ideas so admirably expressed by a well known philosopher, that we shall rather avail ourselves of his words, than run the hazard of enfeebling the remark by employing any language of our own: "Ces sortes de prejuges etant les premiere impressions que nous ayons eprouves, ils ne manquent pas, de nous paraire des principes incontestables." Condillac, Essai sur l'origine des Connoisances Humaines.

III.

Observations on Contagion, 2d Edition, corrected and enlarged by original Communications. By Whitley Stokes, M. D. Honorary Fellow of the College of Physicians, Lecturer on Natural History to the University of Dublin, late senior Fellow of Trinity College, and late Professor of the Practice of Medicine. Dublin, Hodges and M'Arthur. 1818. pp. 67.

The opinions, we believe, of all well-informed persons are pretty nearly settled as to the contagious nature of typhus fever. But it is of such vast importance that the public at large should also entertain correct notions upon this subject, and every production which puts the question into a new and forci-