

a portion of the tartrate of antimony ; but it is not quite clear that it is well founded.

CASE 2.—A young lady, aged 19, of leucophlegmatic habit, and emaciated, related the subjoined history :—She casually suffered a few drops of cold water to fall on her foot, being at the time in her usual health, but this was attended by a very trifling, although impressive sensation, lasting for a moment. Next morning, to her surprise and alarm, she could not open her mouth. This occurred in the country, whence, after remaining five weeks, during which time she received not the slightest benefit from her medical advisers, she came to town, and having heard of the last case, placed herself under my care. She now stated, that fluid aliment did not allay her appetite, which is craving as at first, and that she lost flesh, though continually using soups, dissolved jellies, &c. ; in fact the stomach, from debility, did not digest half the ingesta, which of course ran into the acetous fermentation, producing, as is well known, the craving above-mentioned. Under these circumstances, croton oil, in the form of emulsion, was taken, producing nothing further than an aperient effect ; the evacuations dark and offensive. The plan adopted in the last case was resorted to with results so similar as to render it superfluous to repeat them, and the moment relief was obtained, and the stomach eased, although still nauseating, she ate very heartily, chewing with facility. It is curious that her sister suffered for a short time in the same way, the exciting cause being different.

9, Stafford Street, Mary-le-Bone,
Sept. 2, 1829.

ON HYDROPHOBIA.

By H. ROBERTSON, M. D.

OF late years hydrophobia has, apparently, become much more frequent than it formerly was ; so much so, indeed, as to make it a subject of very general interest. But notwithstanding its claims to professional attention, every investigation into its pathology seems to have been abandoned as hopeless and unavailing ; the disease, consequently, is in no instance treated upon systematic principles, and, with but few exceptions, the cure of hydrophobia has been regarded as a subject of the most vague and abject empiricism. In this case it may, perhaps, be truly asserted, that even an erroneous view of the proximate cause of hydrophobia might lead to a more advantageous mode of treatment, than the present uncertain and indefinite notions respecting it admit. By investigating this disease in a systematic way, and by detecting, and

consequently avoiding, errors that may have been previously entertained, we may gradually ascertain the truth.

It is with this view that I venture to give my opinion of the nature of hydrophobia ; not, however, with the idea that I shall do more in the attempt than induce others to direct their minds to this important question. In the few observations I have now to offer, I shall confine myself to the particular point I have alluded to in explanation of hydrophobia, as it occurs in the human race, and leave others to pursue a full investigation of the history of that dreadful malady in all its bearings.

It need scarcely be observed, that hydrophobia is commonly understood to be a specific disease, manifested by a peculiar train of symptoms, and excited in the functions, by the introduction of a poison which has been previously generated in the bodies of certain animals labouring under disease ; that the animals in whom this spontaneous malady most usually occurs, are those of the canine race ; that, so far as we yet know, the saliva is the secretion in which this peculiar poison is most abundant ; and that, consequently, animals of other natural classes commonly contract what we call, (when it occurs in man,) hydrophobia, by being bitten by those in whom the peculiar disease called rabies exists. I do not, by the above, mean to limit the origin of rabies to animals only of the canine species. There are well authenticated instances in which hydrophobia was occasioned by the bite of an irritated cat, and it has also appeared from similar injuries by other animals ; nor do I presume to deny, that hydrophobia has been occasioned by the bite of a dog under temporary irritation, and otherwise in good health. I have merely advanced the generally received opinion of the origin of this disease, as a minute inquiry into these particulars does not bear upon the point I have in view, viz. the ascertaining the proximate cause of hydrophobia when it occurs in man.

Every matter that occasions a deviation of the functions from their regular and healthy train, when introduced into the system, may be denominated a poison, and in this respect, the substances capable of such an effect, are of endless variety. Many of them are the most subtle gaseous fluids, and others are either generated in some animals under a state of disease, or are the secretions peculiar to certain organs. The different classes of poisons mentioned, (except those of a corrosive nature, which directly act upon and destroy the organ itself,) communicate their specific properties to the animal economy, by an impression upon the nervous system, either directly acting upon the brain itself, as in the respiration of contagious and other noxious gaseous fluids, or indi-

rectly through the medium of the circulation, by abrasions of the surface, as in bites, stings, punctures, &c. It is, moreover, to be observed, that whatever may be the nature of the poison communicated to the healthy system, whether it be gaseous or liquid, a morbid poison, or the healthy secretion of some function, besides the impression upon the nervous functions, a febrile state of the body is the uniform result. Cælius Aurelianus says it was the opinion of the most celebrated ancient philosophers, that the brain and nerves were the seat of hydrophobia, and it is to be lamented that this idea was ever lost sight of. However, I do not mean to infer, that the impression is equally simultaneous in all. The period that elapses from the application of the poison, will vary according to the susceptibility of the person, the virulence or concentration of the poison, and its specific variety. What I intend to advance is, that whenever the impression becomes evident on the nervous system, from the communication of any specific poisonous matter to the body, a febrile state of the functions simultaneously appears. This is particularly evident from every morbid poison; and all those venoms that are the natural secretions of certain animals. In proof of the opinion here advanced, of the effect of these matters in occasioning fever, I may adduce the similarity of appearances on dissection of those who have died from fever, and of those who have died from hydrophobia. Every matter capable of exciting the nervous system, either generally or partially, always produces a peculiar impression, differing from that occasioned by any other matter of the same class; yet the febrile action of the functions, the consequence of their stimulant powers, is common to the whole. Hydrophobia has accordingly appeared occasionally in people labouring under other diseases of excitement and irritation. The assertion, that the introduction of natural or morbid poisons into the system, produces fever, may appear too general, and admit of exceptions; all of them, however, occasion local inflammation when communicated by wound; and when the system is infected, there takes place a derangement of the functions that more nearly resembles fever than any other general malady. I allude to those morbid poisons that are commonly held as not occasioning such effects, but which derange the functions by inducing an impression on the minute vessels that operates in destroying their organisation. My opinion of the proximate cause of fever is, that the remote cause, as in the present case, (a specific poison,) communicates a specific impression to the brain and nervous system; that the specific poison, independently of its general effects, acts as a stimulant upon those

organs; that the specific impulse is given, either by sympathy through the organs of respiration, or by absorption through the circulation; that the irregularity which appears in the nervous functions in the course of the disease, arises from the violence of the exciting cause; hence originates the irregularity and increased energy of the circulating powers; that, of course, the excitement will appear greatest in the organ most immediately and principally affected, viz., the brain, or in such viscera as are connected with that organ, in health, by sympathy, as the stomach, the liver, &c., or in such organs as have been previously affected with disease. In this way, I imagine, that vertigo, foul tongue, delirium and inflammation of the brain, nausea, and affections of the stomach and bowels are secondary symptoms only, in every case of idiopathic fever, and that they depend entirely on the primary excitement of the brain itself. Upon this view of the nature of fever, in applying it to hydrophobia, I should infer, that our views in the treatment of that dreadful malady should be directed to the state of the cerebral functions, considering the leading symptom of the disease, the *horror aquæ*, merely as a sympathetic affection, similar, in that respect, to the retching and diarrhœa, common in cases of ordinary fever. Should it ever be my misfortune to be called to treat hydrophobia, I should, with the above view, inculcate most strictly every part of the antiphlogistic regimen, particularly that of low diet, tranquillity, and exclusion from light. I would permit of no experiments that might induce a spasmodic paroxysm; whatever might be necessary for nourishment or medicine, I would convey into the stomach by means of an elastic gum catheter, or some other contrivance; I would shave the head, keep the bowels open, and avoid, as much as possible, every medicine, or any thing else of a generally stimulant nature. With regard to bloodletting, I should be guided by circumstances, and do so by opening the temporal artery, or cupping the neck and occiput, bearing always in mind the reciprocal energy between the powers of the cerebral functions and the force of the circulation within the head. Whilst we endeavour to lower the action of these vessels by subtracting a portion of their contents, care must be had, that the quantity so withdrawn, shall leave the vessels in sufficient tone to support a certain degree of nervous energy; for although the excessive action of the heart and arteries adds proportionably to the danger in febrile diseases, we must always keep in mind, that it is only through the moderated action of these organs that the system recovers its healthy condition. My next step in the treatment of hydrophobia

would be to re-open the wound, and to bring it to a state of suppuration; by doing so, I should certainly effect, to a certain degree, a counter irritation to that excited in the brain, and probably prevent a fresh secretion of poisonous matter. The use of ammonia or lead, as remedies for hydrophobia, I should only adopt on finding my proceedings, according to the above outline, not likely to succeed. The wound might, with propriety, be bathed with solut. cupri ammon., liquor ammonia, or potassæ. It does not fall within my intention, in these observations, to make any remarks on the different plans of treating hydrophobia that are on record, or of the specific remedies that have been given to the public for its cure; for, without questioning the existence of such remedies, which I see no reason to doubt, we have specific remedies against other animal poisons, and, eventually, one for the cure of hydrophobia may be discovered; but till that happy event takes place our views are as likely to be successful by proceeding in a systematic manner, as by administering, indiscriminately, the first thing that suggests itself, according to the appearance of the patient. But impressed with the opinion, that hydrophobia is occasioned by the power of the peculiar poison acting on the brain, and considering the great influence of every preparation of zinc and copper, in curing diseases arising from irregularity in the functions of that organ, I should certainly have recourse to the most powerful of that class of remedies, the ammoniuret of copper, as soon as every symptom, depending on an increased circulation, had begun to abate; and, by the same reasoning, that remedy bids fair to be of the greatest utility in the protracted stage of typhus, and other severe cases of hydrophetic fever.

Boulogne-sur-Mer, Aug. 28, 1829.

RABIES IN ANIMALS.

A CORRESPONDENT, under the signature of J. B., objects to the proofs adduced by Chirurgus, page 652, with regard to consumption of fæces by animals, as a characteristic of rabies. He adds the following observations on hydrophobia and madness:—

Drinking water is now no criterion by which we can judge of the existence or non-existence of rabies; the name of hydrophobia, formerly given to this disease, is now universally allowed to be incorrect, there being no dread of water itself, but of the horrible spasms which the attempt to swallow liquids induces. Even this is not so constant an attendant of the disease as it was formerly supposed to be; there are many well-marked cases of rabies, without

either a horror of fluids, or difficulty of swallowing. The *true* characteristic of rabies, (that, at least, which is considered to be such by those who have paid the greatest attention to canine pathology,) is an inflammatory appearance of the mucous lining of the stomach and larynx, generally, in both, in a circumscribed patch; and although, in the case related by Chirurgus, the inflammation does not appear to have been circumscribed, yet Chirurgus says, there was a preternatural redness of the mucous lining of the stomach, as well as the œsophagus, which is rather confirmatory, than otherwise, of the opinion that the dog was rabid. With regard to the appearances in the head, the brain was formerly supposed to be the principal seat of disease in rabies, but in numberless instances no visible affection of the brain having been discovered, disease there is not now considered essential to rabies; the inflammatory spot in the stomach and larynx is thought so conclusive, as to render an examination of the brain unnecessary; and, consequently, when the dissection is merely to establish the fact of the disease being rabies, it is frequently omitted; but still, as inflammation of the brain may doubtlessly coexist with the true characteristics of rabies, the appearance of effusion and turgidity of the vessels in the present case, can surely be no proof of the dog not being rabid.

FAILURE OF AN ATTEMPT TO ARREST HÆMORRHAGE BY TORSION OF THE VESSEL.

To the Editor of THE LANCET.

SIR,—Having read in No. 311 of THE LANCET, an account of M. Amussat's new operation for arresting hæmorrhage by torsion, I was induced to try the experiment on a spaniel dog, and am sorry to say, it did not coincide with those of M. Amussat. Having laid bare the femoral artery of the dog, I made an incision through it, and taking up the end nearest to the heart, I twisted it according to the mode proposed by M. Amussat. The hæmorrhage appeared to be perfectly arrested for the space of a minute, when, upon the animal making a slight exertion, the bleeding burst out as freshly as if nothing had been done to arrest it; I then tried the experiment upon the other leg of the animal with a similar result. From this I should conclude, that it would be very dangerous to trust to this mode of arresting hæmorrhage from large arteries, in consequence of the velocity with which the blood is propelled through them. Hoping some of your able physiological correspondents will fully investigate the subject,