VII.

Case of Tetanus cured by Injections of Tobacco Smoke. By THOMAS DUNCAN, Surgeon, Grenada.

THE following case of tetanus is communicated, not with the view of exalting the merits of a plan, which, in this solitary instance, has succeeded, or of raising my reputation on the result, but of drawing the attention of my medical brethren to the management of a most formidable and fatal disease, in which the same method of treatment, in two successive occurrences, cannot be depended upon, and of inducing a trial of remedies not in general use, although I think, in some degree, warranted by the appearance of the disease. The tonic and stimulating plan of bark, wine, mercury, and cold-bath, has had the suffrages of Drs Cochrane, Wright, Rush, Currie, Hosack, and others, and, no doubt, deservedly; but I think the latter goes too far when he says, that the failure of these must be attributed to the complicated and inert manner of giving them, and not to the principle of their action; because the proximate cause of the disease is an exhausted state of the sensorial power, from violent irritation, applied to the nervous system. (Vide Duncan's Annals for 1799.) Although I cannot enter upon the nature of a disease so little understood, experience authorizes me to say, that neither antispasmodics nor tonics, sedatives nor stimulants, either by themselves or variously combined, can be relied upon, even under the most faithful administration, for cures and failures have taken place under each. It is no wonder that Boerhaave says, "Ex his vanitas apparet omnium specificorum et methodorum quæ inanis jactantia contra hoc malum laudat;" and that, meeting with continual disappointment, we fly to every thing that gives but a ray of hope, even out of the routine of common practice.

Sylvest, the subject of the present communication, is a negro attached to Palmiste estate, the property of Bogle French, Esq. of London, a stout and hale young man, of 20 or 21 years. On hoisting up a mill-roller, the tackle gave way, and the edge of the iron cylinder fell on his left foot, which produced excruciating pain. When called, I found considerable laceration and contusion of the metatarsus, without, however, exposing the bones, or, as far as I could discover, fracturing any of them. As is usual in such accidents, there was little hemorrhage. The

wound was dressed with spt. terebinth. which Dr Rush, in the Medical Inquiries, gives us reason to suppose is a perfect prophylactic against tetanus; and at night an anodyne draught was ordered. During the first three or four days, warm poultices and fomentations were employed to produce suppuration, and the draughts continued. A slight sphacelus followed, which being removed on the 9th day, left the sore clean, and discharging good pus. Until the 15th, matters went on favourably under the opiate at night and emollient dressings; the pus was healthy, and the granulations advancing; but on that day he complained of stiffness in the muscles of the neck, and difficult deglutition, which being taken for cynanche tonsillaris, then very prevalent, owing to the spring rains, was unnoticed. At my visit the following morning, viz. the 18th May 1812, the circumstance was accidentally told me, which, from repeated experience of this simple and insidious commencement, called my immediate attention. On desiring him to show his tongue,—a question I prefer to any other, as it conceals suspicion,—I found he could not separate his teeth sufficiently to put it out. I foresaw what was approaching, and having given him tinct. opii gutt. lx. in a glass of mulled wine, and directed the neck and fauces to be well rubbed with the former, I sent for my brother, with whom I had laid down the treatment of the next case of this kind which should occur, having lost the two preceding by the tonic and stimulating plan; but before he came, I was called to some distance off, and did not see Sylvest again until next morning. In the mean time, my brother ordered the warm bath, gutt. lx. tinct. opii every third hour, in a glass of mulled wine, unless sleep should be produced, and a warm poultice sprinkled with pulv. opii to the sore.

Next day, the 19th, we found all the symptoms of a confirmed tetanus present—the jaws locked to within one-eighth of an inch—violent convulsions and contorsions backwards of the whole body occurring every few minutes, and increased by attempting to drink, or when spoken to—that pathognomonic sign, the pain under the sternum, excessive, and, as he expressed, unbearable;—slept none, although he had taken the laudanum three times during the night, and once this morning. Pulse 88, and firm; skin cold, and covered with perspiration; belly costive; sore looking well.

Adeat baln. tepid. pro hor. dimid. bis indie; postea bene fric. ol. olivar. calid. præcipue spina dorsi, et exhib. enema fum. nicotian. toties.

Cap. tinct. opii ʒi. in vin. Mad. ʒii. omne nocte.

We saw him in the afternoon, about five hours after, using

the bath, &c. He was in a profuse perspiration, being covered up with blankets. The enema produced fainting, which lasted some time. On recovering his senses, he expressed himself well, and unconscious of being sick; had a large hard and fetid stool soon after. No abatement, however, of the symptoms, although the spasms did not recur for half an hour after the syncope. Wishes for heat. Let him be wrapped in flannel, well covered with blankets, and have a charcoal fire burning close to him night and day.

20th.—The enema yesterday afternoon produced only nausea and sickness. Sweated much, and continues to do so. The jaw is so firmly fixed, that the thinnest fluids with the utmost difficulty pass, and he is averse to take any, from the severe spasms which are consequent upon the action of swallowing. Opisthotonos unabated; the fits return every few minutes with increased anguish; feels the charcoal fire pleasant, and objects to any distraction from its heat, which is so great as to be uncomfortable to a bystander. Sore looking kindly, and yielding a moderate quantity of good pus; but the foot is much swelled. No sleep from the draught, nor has he closed his eyes for the last 48 hours. Pulse 94; skin warm; no stool from the injection yesterday evening. Let thin panada, with Madeira wine and strong sangrée, be sucked down frequently.

Rep. baln. et frict. ol. calid. ut heri præscript. et inj. fum. nicotian. donec superveniat syncope; necnon rep. tinct. opii hora somni.

21st.—Mouth clenched most firmly, and the spasms equally frequent, though not so severe; thinks the pain at the scrobiculus cordis less; has taken a good deal of sangrée, but can receive nothing more substantial. Sweats profusely. Each enema, after a long exhibition, produced slight syncope; felt them comfortable in his bowels, and had an operation from them. Attributes the sickness and fainting to the fumes reaching his head. Slept about twenty minutes after taking the draught, but the spasms returned with increased violence, and he passed a very bad night. Sore healing under emollient dressings; pulse 90; thinks the heat does him much good.

Cont. omnia ut heri præscript.

22d.—The enema yesterday produced complete syncope, and to-day he feels much easier. Can open his mouth a little in the absence of spasms, which, although they return as often as before, are by no means so violent. The pain at the scrobiculus cordis is diminished, and he had two operations after the injections. The sensation of fainting is so dreadful, that he says he would rather bear the convulsions, painful as they are. Feel

his neck and jaws very stiff and sore; sweats most profusely, more especially after fainting. Has taken a little panada, but convulsions are sure to follow deglutition. Ulcer mending; pulse 90 and full; skin warm; slept a little.

(Considering this the 4th day of the disease, I augur favourably of its termination, for in almost all other cases I have found that one critical. The great Hippocrates in his fifth Aphorism, says, what meets my perfect concurrence, "*Quos tetani vis magna exercet intra quantum diem intereunt, quodsi hos effugerunt tetano levantur et sani evadunt.*")

Pergat ut heri.

23d.—An evident alteration for the better, and an abatement of all the symptoms; can open his mouth half an inch, and the spasms are neither so frequent nor severe. The draught procured some sleep; slight syncope from the injections. Sweats very profusely, to which he attributes his meliorated state. Objects so strongly to the bath that it was omitted yesterday. Sore healing, and swelling gone. Pulse 87; belly open.

Contr. alia.

24th.—Mending; has had only six attacks since last report, and can open his mouth somewhat more. The enemas are not so long exhibited as formerly, and nausea and sickness only are produced. Belly open; slept well; sweating continues; fire and blankets still used.

Habt. frict. et enem. semel indies.

Capt. cort. Peruv. ʒi. ter indies et rep. haust. anod.

27th.—Continues to improve in every respect; opens his mouth full an inch, and has from two to four spasms only per day, and these not severe. Deadly sick from the enema, which he begs may be left off. Continues the fire and warm covering, and is in continual perspiration. Pulse 90; tongue clean; belly costive.

Omitt. inject. fum. nicotian.

Cont. frict. ol. calid. Cont. etiam cort. Per. sed admisc. quotidie p. jalap. ʒss. prima in dosi.

31st.—Doing well. Opens his mouth freely, and is rarely seized with spasms. Continues the friction, sweating process, and bark; takes a good deal of nourishment, and sleeps well at night. Pulse 76; belly open; tongue clean; sore closing.

4th June.—Gaining ground daily. The heat of the charcoal fire has been gradually diminished, and is now entirely withdrawn. He is directed, however, to continue the flannel, and not to move from his bed.

Cont. cort. Peruv. et tinct. opii u. a.

11th.—Improving. No more convulsions, but great stiffness

and stricture of the jaws. Is gaining strength. Got out of bed to-day for the first time, well wrapped in flannel, which he must use for some time. Functions natural, and sore healed.

Cont. cort. Peruv. sed dimin. dos. tinct. opii ad 3ss.

By the end of June, this patient was perfectly recovered from the disease, the only remains of which was stiffness and rigidity. He wore the flannel for a long time after, and is at this moment in good health, except an occasional pain and swelling of the feet in wet weather.

At this distance from the emporium of medicine and seat of improvement, it might justly be reckoned presumption in me to enter upon the pathology of a disease which has puzzled both ancients and moderns, and towards a systematic treatment of which they have done so little; but it may be expected that I should account for my practice in the case of Sylvest, unsupported as it is in some respects by great living authority, and in one entirely new.

As I have already observed, that the two preceding instances of tetanus died under a strict observance of the tonic and stimulating plan, where the cold-bath, opium, wine, and mercury, were faithfully administered, I was determined to depart from the usual routine of practice, and try a relaxant one, without, however, the aid of venesection, which, if carried to any extent, might weaken the system beyond recovery. For this purpose, I had recourse to the hot-bath, and directed warm olive-oil to be well rubbed over the whole body, more especially on the spine. The use of oil is as old as Hippocrates, who says, in treating of this disease, "*Totum corpus oleo immergatur tepenti maximaque cervix hapsis foveatur.*" The Spanish practitioners, in the new hemisphere, use it. Dr Warren thought well of it. Dr Cochrane of Nevis employed, with good effects, embrocations of the ol. terebinth.; and Dr Moseley mentions it among the remedies used by the negroes in Jamaica. To keep up the free perspiration, which was induced by the bath and frictions, the patient was covered with blankets, and wore a flannel shirt. At his own request, a fire was added, and sweating carried to a considerable extent. I may here notice, that, from the difficulty of swallowing, and his unwillingness to take any thing at the beginning of the complaint, antimonials, and other sudorifics, were inadmissible. But, in a disease so formidable, and so generally fatal as this, we dare not trust to a single remedy; neither did I intend that sweating alone should be relied on in the instance of Sylvest.

I had remarked, in a recent case of hernia, syncope caused by the administration of tobacco-smoke injections, and it occur-

red to me, that, if I could produce the same in tetanus, the bowels, which are always constricted, would not only be relieved, but, by its action on the sensorium, the spasms might be overcome. The famed Dr Cullen says, "It is highly probable, that, in this disease, the intestines are affected with the spasms that prevail so much in other parts of the system, and, therefore, that costiveness occurs here as a symptom of the disease," &c. ; and, again, "That a relaxation of the intestinal canal will contribute to a relaxation of the spasms elsewhere." Dr Hamilton's recent publication on the effect of purgatives induces a belief of the same. But I am not aware that tobacco-smoke, thrown into the *intestinal canal*, had been practised in the treatment of tetanus previous to this case, and on it I placed my principal reliance. It is true there is mention made by Dr Willis (*de motu musculare*) of a lady, affected with convulsions, being relieved by the fumes of tobacco blown up her nostrils ; and Mr Harris, surgeon of the Magnificent, after Rodney's victory in April 1782, used it in the same way with a tetanic patient that recovered. But, whether the cure of Sylvest is to be attributed to the warm-bath, and oil frictions,—to the artificial heat, and profuse perspiration,—or to the effects of the tobacco fumes ;—or whether it might have been owing to a particular state of the patient's constitution,—or an unusually pliable form of the disease, which, by the bye, was not to be expected from the cause,—or from a combination of some or all of these circumstances, I cannot pretend to determine.

I have detailed the case as it occurred. I have given my reasons for walking out of the beaten path ; and, from the success of this, I shall feel myself authorized in repeating the experiment.

Before concluding this subject, I may observe, that a boy, about eight years of age, the orphan of a clergyman of this island, and at present in Edinburgh for his education, Daniel Mactair, recovered from the same disease, brought on by cold, under the use of the warm-bath and unctuous frictions, with a very small proportion of laudanum internally. And, a few weeks ago, I knew an infant, of seven days, recover from the trismus infantum, by the warm bath only.