

from the attacks of spasm, he conversed freely with those about him. Being asked if he recollected the inhalation on the day before, he at once said that it was the only thing had given him relief, and begged it would be repeated. Preparations were indeed made to gratify him in this respect, but as the apparatus was about to be applied, he was seized with a kind of convulsive twitchings or clonic spasms of the muscles of the face and neck, which had ushered in all the later paroxysms, and after a short spasmodic struggle he expired about twelve o'clock, being ninety hours from the time the accident occurred, and about seventy from the first manifestation of the symptoms.

An examination of the body could not be obtained.

Dr. Brady, in the course of some observations on the subject remarked, that though the report was thus necessarily imperfect, and that no very satisfactory conclusions could be arrived at with respect to the employment of the inhalation of ether in tetanus, from the limited extent to which it had been used in the present instance, yet considering all the circumstances connected with the case, he thought it deserved to be submitted to the profession. Tetanus resulting from a shock or concussion was, he believed, a very rare occurrence. In this instance, no other probable cause could be assigned. The man had no recollection of having received any other injury; no recent wound or cicatrix could be discovered on any part of the body by the most minute examination: his head was shaved on his admission into hospital, and no trace of contusion was visible on it or on any part of the back. On the other hand, he had not been exposed to cold or any other obvious general cause to which the production of the disease could be ascribed. It may be observed, that from the first decided manifestation of the symptoms the disease assumed a very acute form, and referring its origin to the accident, its course may be considered remarkably rapid. In reference to the preceding circumstances, it may not be undeserving of notice that the patient had been for some years subject, from time to time, to violent attacks of painful distension of the abdomen, accompanied with severe cramps in the calves of the legs. Indeed his family were so accustomed to witness his sufferings in these attacks that they seemed to have had no apprehension of danger on this occasion till the day they applied for his admission to hospital. The pathology of tetanus is involved in such complete obscurity that its treatment must be at present entirely empirical. The results of experience on this subject, however, go far to indicate that, whatever may be the proximate cause of the disease, (whether it be inflammatory, as some suppose, or not,) those remedial means that benumb the sensitive and relax the muscular systems, as tobacco, opium, and other narcotics, must always form an important element in the treatment. Of those agents the vapour of sulphuric ether promises to be the most prompt and efficacious; and when it is considered in what large doses it has been found necessary to exhibit the other remedies, for this purpose, it may be added that it will probably be found the most safe. The publication of this case may therefore not only suggest to others, the employment of the inhalation of ether in similar circumstances, but induce them to enter upon the use of it with more confidence and give it a fuller and fairer trial.

*Academy of Sciences.—Physiological Effects of Ether.*—The effects of the inhalation of ether, and the mode in which they are produced, formed the prevailing subject of investigation and debate; and this, in some measure, to the neglect of other medical and physiological questions. Numerous have been the experiments performed upon the lower animals to determine the effects of ether upon the nervous centres, upon the blood, upon the fœtus in utero, and also upon the actions of the uterus itself, and lastly, upon some of the animal functions.

The chief experiments touching the action of ether upon the nervous centres are those by Baron Flourens, long celebrated for his researches into the functions of the several segments of the brain and spinal cord, by means of vivisection. From his recent experiments with ether, he concludes that its action upon the nervous centres follows a definite course; that it at first acts on the brain, properly so called, (the cerebral hemispheres,) and disorders the intelligence; in the next place, on the cerebellum, and disorders the equilibrium of the movements; it then acts on the medulla oblongata, extinguishing the principle of sensation and motion; and lastly, on the spinal marrow, and having extended its action thus far, extinguishes life. Baron Flourens also ob-

serves that hydrochloric ether produces the same effects as the sulphuric. He also considers the phenomena of etherization to resemble asphyxia. To show this, he placed some dogs in a certain confined portion of air, and thus asphyxiated them. He then exposed the spinal marrow, and pinched and pricked its sensory and motor columns, but no sensation was evinced, and there were but a few feeble muscular contractions.

M. Roux, on the contrary, from seeing the effects of ether on those operated on surgically, believes that there is not the sequence in the occurrence taught by Baron Flourens; but that they often occur simultaneously; and very frequently consciousness, a readiness in comprehending questions, and in answering them by voluntary gestures, remains till the moment complete insensibility sets in. Further, M. Roux would rather compare the phenomena of ether to intoxication than to asphyxia. M. Roux narrates a case of traumatic tetanus following upon the removal of a testicle. The ether was administered on the fifth day from the accession of the tetanus, and when that had gone on to great degree, there being trismus and opisthotonos, and the muscles of the abdomen affected, yet the pulse was tolerably full and regular; but the power of swallowing was lost, and the breathing was embarrassed. The ether-vapour soon brought on somnolency, but this was of short duration. At the moment of waking, which took place without agitation, cold water was sprinkled on him. The patient having regained his consciousness, it was thought there was some movement of the head, and that there was less stiffness in the muscles of the neck. But almost immediately, or at least after a few seconds, the respiration became short and rapid, the pulse enfeebled, and half an hour had hardly passed, when the patient was no more. His death M. Roux believes to have been hastened by several hours or more by the administration of the vapour of the ether.

M. Mandl communicated, in a note, some observations he had made respecting the action of ether on the peristaltic movements of the intestines. Having produced complete insensibility in a dog, he opened the abdomen, when he observed that the peristaltic motion of the intestines had entirely ceased, nor did mechanical irritation reproduce it. The complete state of etherization lasted for ten minutes, when the dog moved, and his respiration became accelerated. He was then killed. Consistently with this there was a general tremor, and some contractions of the cervical muscles: besides this, the peristaltic action of the bowels reappeared, although feebly, and continued for some time.

This seems to show that the ganglionic system may be influenced by the ether equally with the cerebro and spinal systems; and it also supports the hypothesis which regards the ganglionic system as independent of the functions of the spinal cord. Indeed, respiration and circulation, which, according to Baron Flourens, depend on the spinal system, continue, whilst the vermicular motions cease entirely.

*Effects of Ether on a Pregnant Female.*—M. Cardan sent to the Academy an account of a case of pregnancy in which the vapour of ether was inhaled. A young woman in the sixth or seventh month of pregnancy was submitted to the respiration of ether. Intoxication was long in being established; the pulse was hard, but the number of pulsations was not sensibly augmented. She was seized with a disorderly hilarity, as is often observed. After ten or twelve respirations, the infant made some struggles and convulsive movements, very painful to the mother; these movements became more violent, and succeeded each other with greater rapidity, in proportion as the ether became absorbed; but as the mother grew insensible at the same time, she evinced only a vague kind of consciousness. When the mother recovered herself from the effects of the ether, she complained of pain in the uterine region, such as might arise from blows and bruises.

The heart of the fœtus beat with extreme rapidity, so that the individual pulsations could scarcely be distinguished; it might be said, indeed, to be in a constant tremor. The rapidity of the pulsations appeared to be in pretty direct relation to the motions or struggles of the child. The placental bruit lost its simple continuous character, and took place in fits, which varied according as the strugglings of the fœtus were more or less rapid.

*Practical application of Ether to Medical Jurisprudence, to distinguish feigned from real disease.*—M. Baudens illustrates its application to this purpose by two cases:—1. A soldier who had been enlisted, applied for discharge, on account of spinal curvature, which was strongly marked. The man was placed on a table on his back; but from the dorsal curvature, which was like