

coal powder. This meat, however, is found rather solid when used.

A host of different modes of drying meat have been proposed. After a method, for example, somewhat similar to the mode of drying organic matters for analysis; as by passing air first over quick lime, or chloride of calcium, then through a heated chamber or tubes, and then through a reservoir containing the substance to be dried, which might then be wrapped in a cement of plaster of Paris and charcoal, made up with solution of alum, and the whole enclosed in tinfoil.

The vapours of carbonic acid and peroxide of azote have preservative properties, and may be employed to expel oxygen from the substance to be preserved in a reservoir. Most of the anæsthetic agents, especially chloroform and the Dutch liquid, are antiseptic, and their vapours have similar properties, but of all the gaseous bodies, none have had such good results as sulphurous acid gas. The following is the process of M. Robert:—After death, insufflation should be practised, and the parts to be preserved freed as much as possible from blood and serosity, then dried in a current of air produced by a ventilator, then suspended in a close chamber, and exposed to a current of sulphurous acid gas for a period of from ten to twenty-five minutes, according as the weight of the meat to be preserved varies from two to one hundred kilogrammes; then exposed to the air, and covered with a layer of some impervious substance; after which it may be packed in barrels. (1855).

Fatio and Verdeil proposed (1855) to cook in a current of steam under a pressure of from four to five atmospheres, and then dry.

It has been proposed to inclose the dried substance in a case, produce a vacuum by the heat of the salt-water bath, the apparatus being so constructed that by opening a stopcock the preservative substance—melted fat, for instance—might enter.

Of all these methods, MM. Chevallier give the preference to the use of sulphurous acid. The conservative powers of this gas, and the solution of the acid, have been often tested. Entire sheep killed at Algiers, and cleaned there, have been exposed to a current of this gas, brought to Paris, and found at the end of a month in such a state that they might be sold in any butcher's shop in the capital. Meat so treated in France, in the hot weather of August last, was found quite good at the end of a month.

The preservation of vegetables may be conducted on the same principles as that of animal substances, but in general the former require less pains. Quantities of compressed vegetables, forming part of the stores brought from the East, are now to be purchased in the grocers' shops of the metropolis.

Of course there is another way of utilizing the excessive abundance of animal food in some countries—viz., by preparing an extract of meat according to the principles laid down by Liebig. Dr. Daubeny, in his address to the British Association, at Cheltenham, 1856, says: "Chemistry has shown how our supply of animal food may be obtained at a cheaper rate from the antipodes by simply boiling down the flesh of cattle now wasted and thrown aside in these countries, and importing the extract in a state of concentration." In THE LANCET of August 26th, 1854, will be found a letter from me on the "Provisioning of Armies," in which I urge the importance of sending out a large supply of this preparation to the East, pointing out the great advantages which its facility of transport afforded. Afterwards, I had often to prescribe it myself, as we had plenty of it at Scutari, towards the close of the war. The soup prepared from it was certainly not so good as from fresh meat, but it was still excellent, a most valuable resource to the medical man, and an agreeable relief to the patient.

One great drawback to the realizing of the enormous alimentary resources of such countries as Buenos Ayres, the Cape, and Australia—viz., the scarcity of fuel, is removed by the use of sulphurous acid as the preserving agent. For the combustion of the sulphur once excited is easily maintained, and the article itself is cheap enough.

The utility of preserving the flesh of sheep fresh is even greater than in the case of cattle, on account of the difficulty with which the former takes salt, and the great abundance of flocks in many places far exceeding that of cattle. Admitting that much of this mutton may be inferior to prime English meat, it may still be an immense boon to the working classes.

But, moreover, the establishments in these countries at which food was so prepared could also be turned into account in producing useful materials from other parts of the animals, of which only the horns, hides, and tallow are now useful, artificial manures, for instance, and various chemical compounds, which need not be enumerated here. Patents have been taken

out in this country for the application of sulphurous acid in various ways.

I have not thought proper to allude to all the processes for preserving food, but merely to the more important. M. Gannal proposed to inject the veins of recently killed animals with chloride of aluminum—in fact his embalming process, but this, only a modification of salting, is clearly inadmissible.

In conclusion, I conceive that the preservation of animal food, so as to convey it fresh from distant countries is a question of national importance not inferior to any other, and well worthy the attention of government. It seems to me not of an inferior rank to the repeal of the corn laws. But it is a subject for the investigation of scientific men, and as such we can hardly expect it to be taken up amid the contentions and turmoils of party war.

March, 1858.

ON A CASE OF TETANIC CONVULSIONS, SIMULATING POISONING BY STRYCHNIA.

By JOHN ROBERTS, M.D.,

PHYSICIAN TO THE SALISBURY INFIRMARY.

RICHARD T—, aged twenty-eight, a gardener, was admitted into the Salisbury Infirmary at noon on Feb. 17th. He was a dark, sallow, and feeble-looking man, and appeared to be much older than he really was. He stated that, although not strong, he had always enjoyed good health, and that he never required medical attendance except once, about four years ago, when he was attacked with great pains in the abdomen, apparently of an inflammatory character, for which he was freely leeches and cupped, the marks of the treatment being plainly visible. For several months past he had been travelling about the country in search of employment, and two days before admission he had travelled from Bangor, in North Wales, to Bath. On the following morning he started for his mother's house at Southampton, reaching Salisbury at seven o'clock in the evening, having walked the last twenty miles of the journey. Being distressed for money, he had sold his only pair of stockings; and, as the weather at the time was very cold, he keenly felt the want of them, for his legs by the time he reached his lodgings, felt benumbed. Having partaken of some tea and bread-and-butter, he went to bed, but continued to feel cold and chilly. After he had been some time asleep, he was attacked with a slight diarrhoea, griping, and sickness, which, however, soon passed off. Though not feeling well, he rose before seven o'clock, and attended the early morning service at the cathedral; after which he returned to his lodgings, and had his breakfast, which consisted of tea, bread, and a small piece of fish. Although feeling rather weak, he was comparatively well until about twelve o'clock, when he was suddenly attacked by a fearful and strange disease, which I (as well as every body else who saw him) expected every moment to prove fatal.

Symptoms on admission during a paroxysm.—His eyes were starting out and prominent, with a glare and wildly anxious look; the nostril spread, mouth widely open, and all his features fixed and ghastly. He was flinging his arms violently about him, gasping for breath, and his whole body was convulsed. There was a general contraction of all the muscles, but those of the neck and back were most severely affected. The pressure upon the respiratory muscles was enormous, and the sense of strangulation terrible in its intensity. His face was congested and livid, and the pressure upon the veins of the neck was so great that they stood out and looked as large as a good-sized walking-stick. When the paroxysm was coming on he uttered loud shrieks, and beat with his arms the bed and his chest with great violence; there was frightful laryngismus, vain efforts at expiration, and complete opisthotonos of the neck and back; the extremities also were stiffened and jerked out. During the whole of this time he was perfectly conscious. When the paroxysm was over, there was no stiffness of the jaw or neck; he was able to swallow, and frequently called for drink; he breathed easily, and was free from all suffering. The convulsions invariably commenced with a digging pain at the pit of the stomach; soon after the abdominal muscles became contracted and rigid as a warped board. At this stage he always earnestly asked to be rubbed, and when the feeling of strangulation came on his cries and prayers for relief were

most painful to witness. Complete opisthotonos invariably followed, and after a few moments of mortal agony, all his muscles became relaxed and flaccid, and he was again free. The intervals between the paroxysms varied; a quarter of an hour, and even twenty minutes, sometimes elapsed without an attack; but very often he was hardly free from one before another commenced. As time went on they became less violent, and by seven in the evening they had quite ceased, the attack having lasted something under seven hours.

As he derived no benefit from the various remedies employed, it is needless to allude to the treatment. Chloroform, however, gave him great relief, and while he was fully under its influence there was no spasm or rigidity; but as soon as the effect began to wear off, the symptoms returned in all their intensity. Mr. Darke, the house-surgeon, assiduously administered the chloroform, and carefully watched the case from its commencement.

Remarks.—The eccentric course the symptoms took, and their extraordinary violence, were so unlike anything I had ever seen and read of, that I at once concluded they were the effect of strychnia. The patient was closely questioned on this point, but he emphatically denied all possibility of poisoning; and as he was a man strongly imbued with religious feelings, it was impossible to listen to his earnest prayers in his agony, and to his emphatic denial of having taken poison wilfully, without believing the truth of his statement. The terrible train of symptoms which set in at twelve o'clock, while he was walking in the street, and which set in in their full power from the commencement, appeared to me at the time to have no connexion with the trifling disorder of the night before; but that they were the result of natural causes there can be no manner of doubt. If we glance at his history immediately before the attack, it is quite clear that his condition rendered him very liable to nervous irritation. He had a feeble constitution and a nervous temperament, and he stated that his feelings were easily excited. He had lately suffered a good deal from mental anxiety, and he had, moreover, been many hours exposed to severe cold. The slight attack of diarrhoea and sickness during the night also proved the existence of irritation in the intestinal canal. As it is well known to surgeons that a slight scratch or cut is sometimes the existing cause of tetanus, it is not unreasonable to infer that the frightful series of symptoms I have endeavoured to describe were produced by the combined causes noted above, in a person preternaturally susceptible. Had there been any suspicious circumstances in his case—had food or medicine, for instance, been administered to him by a person who would have benefited by his death, and had he actually died in one of the paroxysms, I shudder to think how confidently I should have stated my opinion in a court of justice that the symptoms were caused by strychnia, and that they were inconsistent with any known disease.

February, 1858.

A Mirror

OF THE PRACTICE OF MEDICINE AND SURGERY IN THE HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum et dissectionum historias, tam aliorum proprias, collectas habere et inter se comparare.—MORGAGNI. *De Sed. et Caus. Morb.* lib. 14. Proœmium.

GUY'S HOSPITAL.

POMPHOLIX IN A GIRL, AGED SEVENTEEN, EXISTING SINCE BIRTH; RELIEF FROM TREATMENT.

(Under the care of Dr. ADDISON.)

Of the various skin affections which present themselves for notice, one of the most curious, and, perhaps, uncommon, is that known by the name of pompholix: we prefer to use this term, which was first employed by Willan and Bateman. The various French writers on diseases of the skin, amongst whom may be mentioned Cazenave and Gibert, call this affection pemphigus. The following extract from the writings of the latter author gives, in a few words, a correct idea of the disease.

“This eruption is characterized by bullæ, (blebs,) filled with serum, which are rapidly formed upon an erythematous patch of the skin, and acquire a size varying from that of a pea to a nut, or even an egg. These serous tumours, precisely analogous to those produced by the application of cantharides, soon allow the fluid which they contain to escape, and dry up in small delicate squamæ, which leave behind them a slight mark.”* When once seen this disease is not soon forgotten, and is generally easily recognised. There are several varieties of it, the two principal being, as described by Willan, according to the progress and severity of the symptoms which accompany it, the *Pompholix benignus*, a mild form common to children teething, or delicate young persons, and the *Pompholix diutinus*, or chronic form, described as a long and painful affection, met with in bad constitutions, depending upon a variety of causes, of which insufficient nourishment is not one of the least important. The case which we bring under notice is an example of the second, or chronic form, commencing in childhood, and continuing without intermission to the present time. The blebs formed in the mouth as well as on the skin, and we have no doubt, unless the occurrence of puberty may produce a change for the better, that she will have them along the alimentary canal, and become a great sufferer. When this is the case, the patient has a sensation of burning coals moving about in the intestines. We recollect seeing two instances of pompholix in the Hospital of St. Louis, in Paris, in which the whole tegumentary system was involved, in two old women; the affection was incurable, and terminated fatally in both. The simple and mild form of the disease is often simulated; we to-day also record an instance of the kind recently occurring in University College Hospital.

The following is an abstract of the case from the notes of Mr. W. J. Addison, one of the clinical clerks:—

Mary Elizabeth R—, aged seventeen, was admitted July 1st, 1857. She states that from her birth she has been covered with blisters, first in one place then in another. The whole surface of the back is marked with numerous scars. She never has had any dangerous disease. Sometimes the blisters come inside the mouth and on the tongue; some are painful, others not at all. Everything she takes causes sickness and vomiting; her bowels are never open without taking medicine; she states they have not been open for three weeks. On admission she presented a wasted appearance; the functions of the chest normal; urine not albuminous; micturition natural. On the 4th, when seen by Dr. Addison, he pronounced the disease to be pompholyx, and ordered compound iron mixture, three times a day. She has a large blister on her hand, and has had her bowels relieved without medicine.

July 7th.—Another blister has this morning appeared on the tongue; complains of shivering, which continued for three days, and then ceased.

14th.—The blister on the hand broke. She has taken quinine since the shivering commenced.

On the 15th, steel mixture, conjoined with aromatic spirits of ammonia, was ordered, which agreed well with her.

22nd.—Another blister on the tongue; her health was pretty good, and she walked about all day.

There was no great improvement up to the 12th of August, when Dr. Gull, who saw her for Dr. Addison, ordered one drachm of the syrup of iodide of iron, twice a day, and cod-liver oil, also twice a day.

On Sept. 9th the skin was very red and inflamed over the abdomen, but she is in good spirits, and her bowels regular.

23rd.—The skin has broken, and is very sore over the abdomen. Dr. Addison ordered it to be well dusted with flour. In a week from this all the blisters had dried up, and she was much better.

She left the hospital at the beginning of January, on the whole much improved in health, having continued her medicines. The disease was not, however, cured. There was a peculiarity about the bullæ worth noticing: when the fluid within them was clear and watery they were not painful; but if they contained a deep yellow serous-looking fluid, they were extremely painful. Almost every part of her body was subject to them, her mouth, fingers, &c. She had not attained puberty, and her breasts were incompletely developed; she would have been called good-looking were she not disfigured by the remains of her disease.

Shephard's translation of Gibert, 1845, p. 79.