heats and chills, and irresistible sleep. The other gentleman, after inhaling the gas two or three times, was seized with giddiness, tremor, and incipient insensibility. These effects were followed by languor, weakness, and headache of some hours' duration.

Since those experiments were made, others of a more extended character were instituted by Tourdes and by Leblanc. Tourdes found that rabbits were killed in seven minutes when they were put into a mixture of one part of the gas with seven of atmospheric air. A fifteenth part of the gas in common air killed them in twenty-three minutes; and a thirtieth part in thirty seven minutes. Leblanc's experiments were made in conjunction with Dumas, and he ascertained that one per cent. of the gas in atmospheric air would kill a small dog in a minute and a half, and that birds were killed immediately in a mixture containing five per cent. of it.

Very recently I have myself ascertained that air containing only 0.5 per cent. of the gas will kill small birds in about three minutes; and that a mixture containing one per cent. of the gas will kill in about half this time. An atmosphere having two per cent. of the gas will render a guinea-pig insensible in two minutes; and in all these cases the effects are the same. The animals show no sign of pain; they fall insensible, and either die at once with a slight flutter—hardly amounting to convulsion,—or they gradually sleep away as if in profound coma. The post-mortem appearances are not very striking: the blood is a little redder than usual, the auricles are somewhat gorged with blood, and the brain is a little congested. In birds there is nearly always effusion of blood in the brain, and it may be seen through the transparent calvaria, by merely stripping off the scalp after death.

Accident has also demonstrated how injurious the gas is even to the human subject. For many years past attempts have been made to promote the use of water gas as an agent of illumination. The gas sometimes contains as much as thirty-four per cent. of carbonic oxide. It is obtained by passing steam over red-hot charcoal; and as the steam is decomposed by the ignited carbon, the hydrogen is set free, and carbonic oxide, with carbonic acid, is produced. Patents for this process of manufacturing gas date as far back as the year 1830, and they have at various times been put into operation in this country and on the continent. Sellique, in 1840, obtained permission to use the gas in the towns of Dijon, Strasburg, Antwerp, and two of the faubourgs of Paris and Lyons. At Strasburg an accident occurred which put a stop to its use. The gas escaped from the pipes into a baker's shop, and was fatal to several persons; and not long after an aeronaut, named Delcourt, incautiously used the gas for inflating his balloon. He was made insensible in the car, and those who approached the balloon to give him assistance fainted and fell likewise. The use of the gas has therefore been interdicted on the continent.

Another source of danger from it is in the combustion of carbon. It is found in the neighbourhood of brick-kilns and furnaces. The gases discharged from the latter contain it in large proportion. Iron furnaces produce it to the extent of from twenty five to thirty-two per cent., and copper furnaces from thirteen to nineteen per cent. In the year 1846, M. Adrien Chenol was anxious to ascertain the properties of the gases yielded by his process of smelting zinc ores with carbon; and, not having a suitable instrument for collecting the gases, he attempted to draw them out of the furnace by means of a pipette. Some of the gas was thus inhaled, and he fell immediately as if he had been stunned; the eyes were turned back in the orbits; the skin was discoloured; the veins were swollen, and presented a black tint under the skin; there were violent pains in the chest, and the brain felt powerfully oppressed. After removal to the open air, and the application of restoratives, sensibility gradually returned, but the internal pains were still severe, and there was a feeling of suffocation. For several days he felt depressed and languid; the digestion was bad; sleep was obstinate and heavy, and it was frequently disturbed by cramps in the knees and toes. Even for months afterwards there was a morbidly excited state of the nervous system.

In a more diluted condition the gas is still able to exert an injurious action, and it is very probable that the singular catastrophe which happened at Clayton Moor, near Whitehaven, in the summer of 1857, was caused by the diffusion into the air of carbonic oxide from the neighbouring iron furnaces. There is a row of cottages near to these furnaces, where, in the month of June, 1857, a number of persons were suddenly seized with insensibility, which soon passed, in some cases, into coma and death. About thirty persons were thus attacked, and six of

them died. The effects were attributed at the time to the escape of sulphuretted hydrogen from the slag on which the cottages were built; but it is more probable they were caused by the oxide of carbon from the furnaces.

Lastly, it is worthy of remark that very recently Boussingault has noticed that the leaves of aquatic plants give off carbonic oxide and marsh gas, when under the influence of solar light; and he asks whether this gas so produced may not be concerned in the unhealthiness of marsh districts.

A more complete acquaintance with the effects of this poison is a great desideratum, although enough is known to indicate its general mode of action, and to furnish evidence for its discovery.

Finsbury-square, Feb. 1862.

CASES OF CANCER TREATED SUCCESSFULLY WITH THE ARSENICAL MUCILAGE,

In the Brompton and London Cancer Hospitals.

By W. MARSDEN, M.D.,
SURGEON TO THE ROYAL FREE AND CANCER HOSPITALS.

It will be seen by the dates of the following cases, that they occurred some time ago. This delay in their publication was intentional on my part, in hopes of having it in my power to add to the history of the cases,—that most important of all results in the treatment of cancer,—that there had been no relapse; at least, for a long period. The mere recording of operations for this disease seems to me of little or no value, unless time be given sufficient to warrant at least a well-grounded hope that a relapse or return of the malady is not likely to occur.

CASE 1.—Charles M—, from Worcestershire, aged seventy, was admitted into the Cancer Hospital, Brompton, on the 13th of October, 1858, and was discharged cured on the 18th of May, 1859. A cancerous ulcerated sore occupies about a half of the lower lip, and the left angle of the mouth. It threatens to proceed upwards towards the cheek and upper lip. It resembles at first sight a warty excrescence, but has a very formidable look; nor can there be a doubt of its malignant character, whatever be the view of pathologists in respect of the true nature of epithelial cancer. The patient had been treated for three months in the Worcester Infirmary. Soon after admission, the arsenical mucilage was applied as a caustic dressing to the parts affected. Under this treatment he rapidly recovered, and continues well to this day.

The accompanying wood-engravings, taken from photographs

of the patient, give a very correct view of the patient before and after the treatment.

It may be useful to add, that the disease was of about eighteen months' standing at the time of his admission into the hospital. The arsenical mucilage was first applied on the 10th of November, and discontinued on the 16th of December. The progress towards a cure was uninterrupted.

CASE 2.—S. G—, aged fifty-six, married, and had had

two children, was admitted as an out-patient of the Cancer Hospital, Piccadilly, on the 15th March, 1859. The history of her case is as follows:—After a fall occurring about a year previously, there appeared to the left of the umbilicus and in the umbilical region a tumour, which, small at first, has now increased to about the size of an egg. The tumour is of a deep-red colour,

slightly ulcerated over the greater part of its surface. It is firm, and attached to the abdominal walls by a broad base or pedicle. As the means employed seemed to have no influence over the morbid growth, she was recommended to become an in-door patient in the hospital at Brompton. She was accordingly admitted on the 3rd of May, 1859. She enjoys pretty good health, and complains only of a sense of weakness in the limbs. After a few applications of the arsenical mucilage, the tumour sloughed off, leaving a clean surface, which speedily cicatrized, and she was placed on the list of out-patients on the 17th June of the same year. Soon after leaving the hospital this patient lost the use of the lower extremities, but from which she soon recovered. The cicatrix is quite sound, and she continues in good health, and without any relapse, to the present day.

In this case, as in all the others treated in the Cancer Hospital, the application of the arsenical mucilage was rigorously limited to the fungous structure, or, in other terms, to the diseased parts, experience having told me that to extend the application of the medicament to the healthy structures is a proceeding fraught with great danger.

The tumour thus removed is preserved in the Pathological Museum of the Hospital; it is numbered 56. A correct coloured drawing of the tumour, as it appeared when the patient first entered the hospital, will be found in the folio of pathological drawings forming a portion of the Museum; it is numbered 55.

CASE 3.—S. F.—, aged sixty-eight, of Calston Colne, was admitted into the Cancer Hospital, Brompton, on Sept. 21st, 1859, for an epithelial cancer (canceroid) of the lower lip, which first appeared about ten months previously. His general health seemed good. The arsenical mucilage was immediately applied twice a day, and simple soda powders were prescribed to be taken also twice a day. Under this treatment the fungous growth was speedily thrown off, the secretions from the surface became of a healthy character, and on the 5th of October the black lotion was substituted for the arsenical mucilage. He was discharged cured on the 14th October, 1859, and continues well to this day.

CASE 4.—M. N.—, aged seventy-one, was admitted into the Cancer Hospital, Brompton, on the 20th of June, 1860, for a fungous tumour, of the size of a small apple, seemingly growing from the scalp, close to the fronto-parietal suture, and somewhat towards the right side. To this tumour, which appeared to have no cranial or dura-matral attachments, though strongly resembling such tumours, the arsenical mucilage was applied with great caution; and, when the pedicle, which was of considerable breadth, had nearly sloughed through, it was divided with the knife on the 1st of August. No hæmorrhage followed. The bone was found bare and denuded of the pericranium for about the extent of a shilling. Granulations of a

healthy character spread over the wound, and a healthy cicatrix ultimately formed. A small red spot marks the original situation of the tumour. On the 12th of October last she had continued quite well, nor has the disease reappeared.

The wood engravings give a very accurate idea of the tumour as it appeared before operation, of the scalp after its removal, and of the small red spot which remained on the scalp. The tumour and the original drawings are preserved in the museum of the hospital. It is right to remark that the growth resembled very strongly those terrible tumours which, growing from the external surface of the dura mater, terminate by perforating the cranium and spreading over the surface of the scalp.

Lincoln's-inn-fields, Feb. 1862.

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. Proæmium.

ST. BARTHOLOMEW'S HOSPITAL.

LARGE NEUROMATOUS TUMOUR IN CONNEXION WITH THE SCIATIC NERVE; SUCCESSFUL ENUCLEATION.

(Under the care of Mr. PAGET.)

FOR the greater part of our knowledge upon the subject of neuroma the profession are indebted to Dr. R. W. Smith, of Dublin, whose important work on this form of disease is, we may correctly assert, the only standard authority upon it. By the term neuroma is meant a tumour growing upon or in connexion with a nerve. It is not necessary that it should actually consist of true nervous tissue to constitute the disease; but very commonly the fasciculi of the nerve either surround the tumour or become spread over it. Some good examples of these growths have been exhibited before the Pathological Society during various sessions, and descriptions published in its "Transactions." Mr. Shillitoe exhibited one, of the musculo-spiral nerve (vol. ix.); Mr. Sibley, one of the fifth and sixth cervical nerves, and another of the musculo-spiral nerve (vol. viii.); Mr. Toynbee, one of the auditory nerve (vol. iv.); Dr. Wilks, specimens affecting the nerves of nearly every part of the body, one as large as a pigeon's egg on the sciatic nerve (vol. x.); and lastly, one on the posterior tibial nerve was exhibited by Dr. Van der Byl (vol. vi.)

The tumour varies in size from that of a millet-seed to that of a melon, and is commonly found to be solid and composed