and back; she does not now suffer from pain when she passes her water; the bowels have not been again relieved.

18. She has had relief from the bowels, and says she feels much better, and in good spirits; she continued gradually to improve after this, and is now quite well.

Although in the above case the symptoms were violent, and the patient's sufferings very great, I do not believe that many grains of the poison entered the stomach. She emptied the contents of one of the powders, which contained half a drachm of the bichloride of mercury, into her mouth; it acted powerfully upon the mucous membrane, wherever it came in contact with it, and produced ulceration within the lower lip, and underneath the tongue. The first quantity of the white of egg which I gave her, after remaining down a few minutes, was forcibly rejected. This was fortunate, for whatever poison had reached the stomach, and had become mixed with the food, must have been thrown up. The saliva flowed abundantly from the mouth, and the lips were swollen; this was not occasioned by salivation, but by the violent action of the poison locally upon the mucous membrane. The poison had a remarkable effect upon the pulse, which at one time was under 30 in the minute, and intermitted very much; she complained also of great drowsiness. Dr. Christison, in his work on Poisons, mentions this drowsiness and slowness of the pulse, but does not state that it ever intermits. The following passage commences the section upon the symptoms of poisoning with mercury:—"The effects of mercury on the animal body are more diversified than those of any other poison. It acts on a great number of important organs, and in consequence the phenomena of its action are proportionately various. It is not surprising, therefore, that some ambiguity still prevails as to its mode of action, and the circumstances by which it is regulated."

CASE

OF

SLOW POISONING BY ARSENIC.

By R. JONES, Esq., Strefford, near Shrewsbury.

Oct. 20, 1843.—Miss B., of spare habit and pale complexion, has been subject to an obstinate diarrhoea for the last six weeks, and has now the following symptoms:—Frequent griping pain in the bowels, with almost constant desire to act; considerable tenderness over the whole abdomen, which is distended; constant pain and nausea after taking food, and frequent vomiting of all ingesta; the skin cool and dry; intense thirst; tongue clean and red, resembling raw beef; the pulse is 100, small, and feeble; there is a sense of constriction of the throat, and a copious flow of saliva; she has some gastric cough, and frequent raking of the throat and fauces, of a muco-purulent secretion, mixed with specks of blood. There is much pain and tenderness down the spine, and frequent muscular tremors; a crampy feeling of the lower extremities, with partial loss of motion and sensation; they are much swollen, of a livid color in places, and showing a tendency to slough; there is great emaciation; she is unable to procure sleep,

owing in some measure to the frequent action of the bowels; the motions are white, watery, and frothy; urine scanty, high colored, and passed with an effort; catamenia absent. She informed me she has been subject to a chronic disease of the skin (psoriasis guttata) for the last four years, and that after having recourse to a great variety of means for its removal, including the local application of sulphur in all its forms, she consulted a physician at Hereford, who prescribed "the liquor arsenicalis." This at first gave her a month's respite, after which the complaint returned in an aggravated form; she again consulted the same physician, who advised her to resume the remedy in five drop doses, to be gradually increased to fifteen drops, three times a-day. On this occasion she took it for about a month, "sometimes taking rather more, sometimes less," until the above train of symptoms set in, without, however, any benefit to the disease.

The above is, undoubtedly, a case of slow poisoning by arsenic, but I treated it as an aggravated form of "gastro-enterite." She was directed to use a warm bath every other day, to take a farinaceous diet, with a little chicken or veal broth; to allay the thirst with linseed tea and barley-water; to keep in bed. A blister was applied over the region of the liver, and the abdomen, spine, and lower extremities, rubbed twice daily with camphorated oil and laudanum; mild mercurials were of service in restoring action to the liver, and opiates in allaying pain and irritation. All her worst symptoms have now left her, but there is still great prostration, and she has still a feeling of numbness in the lower extremities. She is taking at present liquor potassæ, and decoction of bark.

Strefford, Nov. 9, 1843.

SOME REMARKS

ON THE

PRODUCTION OF SULPHURETTED HYDROGEN GAS IN THE ALIMENTARY CANAL,

AND ITS EFFECTS ON THE SYSTEM.

By J. BOWER HARRISON, M.R.C.S.L., &c.,
Surgeon to the Ardwick and Ancoats Dispensary.

[For the *Provincial Medical Journal*.]

We may almost pardon the zeal and exclusiveness with which that accomplished surgeon, Mr. Abernethy, regarded the disorders of the digestive organs, when we come to consider how many derangements originate in these parts. When we further reflect how many secondary conditions of disease proceed from imperfect digestion, and how greatly our remedial measures are directed to improve this function, we are still more impressed with the paramount importance of the subject. It must always be borne in mind that the stomach and bowels are the immediate recipients of our medicines, and that most of the changes we are desirous to produce can only be effected through the mediation of these parts. Disorders of the digestive organs have thus properly drawn the attention of several able inquirers, but it is still to be regretted that many different affections pass without sufficient discrimination under the common denomination of dyspepsia.

Of the food which is taken into the stomach, a certain portion is received as nourishment, and the

rest evacuated through the alimentary canal. The excrementitious part of the chyme is precipitated by the bile, and the chyle which remains is absorbed by the lacteals. The mucous surface of the intestines is itself capable of absorbing watery matter, but the chyle globules can only be removed by the vessels dedicated to this purpose. In various morbid states of the stomach and bowels, only a portion of the aliment undergoes the change we have described, and a quantity of undigested matter passes into the alimentary canal. The residue of the digestive process does not, therefore, consist simply of faecal matter, but contains a mixture of improperly assimilated food. The chemical influence or vital control of the intestines is inadequate to arrest the affinities which conspire to the decomposition of this undigested mass. Thus it corrupts into offensive gaseous products, or lodges in the great guts, becoming a fruitful source of irritation and disease. I have little doubt that many derangements are produced by the absorption of matter thus produced. The colon was intended for the transmission and reception of purely faecal matter, and, if it receive other matter, irritation and derangement are the consequence. Sulphuretted hydrogen is not uncommonly found to be an ingredient among the injurious products disengaged in the process of decomposition. It has been stated that the absorption of the nutritious portion of the aliment is exclusively carried on by the lacteals, but the whole surface of the alimentary canal also exercises an absorbing influence. Thus, much of the watery matter of the faecal residue is gradually removed during its progress through the bowels. It cannot be doubted, also, but that gases are readily absorbed from the surface of the mucous membrane; and this is rendered evident by the very able researches of Abernethy, Cruikshank, Autenreith, and Beddoes. It would seem, therefore, far from improbable that the gaseous productions which arise in the alimentary canal may be subsequently absorbed by a process of endosmosis.

Now, the sulphuretted hydrogen gas is the most pernicious of all gases, and there can be no question that its presence in the bowels would be most deleterious to the system. It appears; from the experiments of Professor Chaumier made on animals, that in a very moderate quantity it proves fatal, "whether it be inhaled or injected into the cellular tissue, stomach, or anus, or simply applied to the skin. *Nine quarts of the gas injected into the anus of a hare killed it in one minute*, and a rabbit, whose skin only was exposed to it, died in ten minutes."* It may be thought that this gas is frequently found in the bowels without producing any inconvenience or derangement, but it must be remembered that "smell alone must not be relied on, as putrescent animal matter exhales an odor like that of sulphuretted hydrogen, though none be present."† The gas is best tested by exposing to it a piece of bibulous paper, moistened with a solution of the acetate of lead.

The effects of the inspiration of sulphuretted hydrogen, and its consequent absorption through the lungs, are well known; air impregnated with a 1500th part of the gas kills birds, and in twice that

proportion it is even fatal to dogs. The most complete account of the effects of this gas are said to be contained in M. Hallé's "*Reserches sur la Nature du méphitisme des fosses d'aisance*." In a recent and interesting work on the Medical History of the Niger Expedition, under Captain Trotter, in 1841-2, it is conjectured that, if the formation of sulphuretted hydrogen on the banks of the river be not the cause of fever, it is probably one occasion of the insalubrious nature of the climate. When vegetable matter is in a state of decomposition, it attracts oxygen from the oceanic sulphates, leaving the sulphurets, which are afterwards decomposed by the carbonic acid of the atmosphere, and sulphuretted hydrogen is, therefore, evolved.*

My attention was first directed to the generation of sulphuretted hydrogen in the bowels by the following case:—A gentleman of studious habits, previously in good health, and in the pursuit of his customary avocations, was seized with a dimness of sight, so that he could not see distinctly the outline of the faces of his friends. On trying to read small print, he found it difficult to decipher more than a few letters at once, the lines seeming to run into each other. He was unable even to read a sign-board across the street. This lasted about an hour or an hour and a half, when a very violent headache came on, being chiefly confined to one side. The eyesight became clearer, but the headache was intolerable, and kept increasing in intensity, until followed by complete faintness and prostration, so that he was obliged to lie down. Free vomiting then ensued, and by the next day the symptoms had passed off, though he still continued unwell. He took calomel and colocynth, followed by a senna draught. The same affection, not deviating in the slightest particular, has occurred to this gentleman on other occasions. Supposing that the gas of his bowels, which was very offensive, was strongly impregnated with the sulphuretted hydrogen, this gentleman had the curiosity to expose to it some paper moistened with a solution of the acetate of lead, and, as he expected, found it distinctly blackened. I scarcely feel competent to discuss the question as to the precise manner in which the sulphuretted hydrogen becomes poisonous to the system; but I perceive, from the recent work of Dr. Liebig on Animal Chemistry, that he ascribes its agency to its influence on the iron in the blood.

In smaller proportions, the presence of sulphuretted hydrogen in the bowels gives rise to headache, lowness of spirits—anomalous pains which are compared to rheumatism and dimness of sight. It cannot, however, be fairly admitted to be present, unless it be ascertained by the test which has been named. Mr. Abernethy, in his work on the Constitutional Treatment of Local Diseases, which is so generally and deservedly known to the profession, has some observations on a kind of pseudo-rheumatic affection arising from a disorder of the digestive organs. He also alludes to the origin of hypochondriasis in a depraved state of the bowels, and notices an excellent dissertation by M. Hallé, inserted in the eighth volume of the "*Memoires de la Société Royale de Médecine de Paris*," for the year 1806, entitled *Réflexions sur*

* See Christison on Poisons, p. 693—1832.

† Christison, Op. Cit., p. 702.

* See Medical History of the Niger Expedition. By Dr. McWilliams, p. 172.

le Traitement de la Manie Atrabiliare, comparé à celui de plusieurs autres maladies chroniques, et sur les avantages de la méthode évacuante. In these instances it seems not improbable that the absorption of matter from the bowels is one source of the derangement.

Certain febrile disorders, which originate without being traceable to any specific contagion, may take their rise in the poisonous gases of the bowels, and this is rendered more probable from the circumstance of their being often preceded by long-continued mental uneasiness, and other causes which are known to embarrass the functions of digestion. Little need be said of the treatment of these cases; for it may here be remarked, that increased precision in our knowledge of disease does not necessarily carry with it any more effectual means of combatting derangement, and we are often obliged to continue the same measures which were adopted when less correct notions were entertained. The occasional exhibition of calomel or blue pill, followed by suitable doses of the sulphate of magnesia, are usually found efficacious. In many instances the enema of warm water, or soap and water, may be used with advantage; and of course every attention should be devoted to the condition of the stomach, both as to the quantity and quality of the ingesta. These subjects, however, have been so exhausted by writers of all descriptions, that I shall not fatigue the professional reader with suggestions which must readily present themselves to his own mind.

The alkaline sulphurets seem to produce their poisonous influence by the sulphuretted hydrogen which is occasioned by their decomposition. "In a case related by Dr. Chartourelle, where four drachms were taken (of the liver of sulphur), so rapid and abundant was the disengagement of the sulphuretted hydrogen, that the patient died from asphyxia."*

The alkaline sulphurets were formerly given as antidotes to the metallic poisons, but are in themselves highly dangerous. The best antidote for the sulphurets is the administration of common salt (chloride of sodium), which acts by decomposing the sulphuretted hydrogen, the cause of their fatal properties. Common sulphur is well known to be harmless. The gas exhaled from ordinary privies is too much diluted to be noxious. Thackrah states that the nightmen of London are generally healthy. "Appetite, they declare, is increased by the effluvium."†

Broughton Nov. 6, 1843.

* Beek's Medical Jurisprudence, p. 719.

† The Effects of Arts, &c., p. 62.

OVARIAN DROPSY.

Mr. Southam, of Salford, has been successful in an operation for the removal of an ovarian tumor. It weighed four pounds and a half. Mr. Southam is decidedly in favor of the *long* incision through the abdominal parietes.

TWO CASES

OF

EXCISION OF THE UPPER JAW.

By SAMUEL SMITH, Esq.,
Senior Surgeon to the Leeds General Infirmary.

[Reported by Mr. Wollaston.]

TO THE EDITORS OF THE PROVINCIAL MEDICAL JOURNAL.

GENTLEMEN,—As the case of Arabella Leeming was seen at the infirmary, during the meeting of the Association in this town, by several eminent surgeons, who expressed a wish to know the result of the intended operation, and as a second case came soon afterwards under Mr. Smith's care, I have been requested by him to report the two cases for the Journal of the Association. Hoping you may find them worthy of insertion,

I remain, Gentlemen,

Your most obedient servant,

W. O. J. WOLLASTON.

CASE I.—Mary Whitaker, of Wakefield, twenty-one years of age, unmarried, works in a worsted-mill, and is in tolerable health; was admitted a patient under Mr. Smith, August 14, 1843. She states that about three months ago, without any apparent cause, a small tumor, about the size of a bean, very hard, but without discoloration, made its appearance on the right ala of the nose; it was soon afterwards felt in the palate, and has continued gradually but rapidly increasing to the present time. During the middle period of its growth she experienced much severe lancinating pain, extending from the tumor to the ear and head, but latterly this has much abated.

Present Condition.—Her general health is good; there is a large, slightly elastic tumor on the right side of the face. It commences anterior to the maxilla, at the second left incisor, extends along the whole jaw, half an inch above the alveolar process, to the third right molar; from thence, in a semicircular direction, to the middle of the lower anterior border of the orbit, the inner half of which it involves, and then encroaches on the nose, which is so much pushed to the opposite side by it, that both nostrils are completely obstructed. She can only see with the right eye objects which are on a level with it, the range of vision of the left eye being circumscribed by the great elevation given to the nose by the tumor. The skin on the apex of the tumor is inflamed, and many enlarged veins traverse it, giving it a suspicious appearance.

Measurements.—From the malar bone to the tip of the nose—right side, four inches and a half; left side, two inches and a half. From the inner angle of the eye to the angle of the mouth—right side, three inches and a half; left side, two inches and a half.

A small tumor, the size of a pigeon's egg, occupies the roof of the mouth on the right side, but it is confined to the maxilla. In consultation, it was decided to operate by excision of the jaw, as the only chance for preserving her life, although suspicions were entertained the disease might be of a malignant nature.

The day previous to the operation, Mr. Smith, thinking there might be some difficulty in replacing the divided parts *accurately* to each other, made