

power of coördination of movements, and could walk, only he was observed to reel and totter when he walked. In reference to this case Vulpian remarks: "Here we have a case in which the cerebellum was destroyed, and yet the patient could walk, though in an unsteady manner. But if this (Flourens') hypothesis were well founded, he ought not to have been able to stand or walk a step, for the combination of muscular contractions necessary for locomotion or maintaining the erect attitude ought to have been altogether impossible."⁶ Ferrier, while admitting that lesions of the cerebellum cause disturbances of stability and locomotion, believes that the evidence from all sources tends "to show that the cerebellum is not specially concerned in the coördination of locomotion—a function which we have seen reason to localise in the optic lobes." It is necessary, however, that we should observe a distinction between injuries suddenly inflicted and diseases slowly progressing, for in the former case we have in addition the element of shock in operation. But it will be observed also that even allowing for this, Flourens' incisions, while they were confined to the outer parts, caused very slight disturbance, and that it was only when the deeper parts were reached that the symptoms of want of coördination were well established. Consciousness was never lost during the operation, and intelligence remained unimpaired. It may be stated then—and this will be further illustrated in the consideration of the next question—that in a wound of the cerebellum the person injured need not necessarily fall, and that it would be possible for him to make forward movements for some distance, irregular it may be, but so long as the cerebral functions were not interfered with, with absolute consciousness and intelligence.

3. Is a wound of the cerebellum a necessarily fatal injury, immediate or remote? Any lesion of the brain substance is always dangerous, and may be attended with immediately fatal consequences. But, on the other hand, there are numerous instances on record in which the most severe injuries have been unattended with any symptoms. Professor Bigelow vouches for a case in which an iron bar, weighing 13½ lb., 3 ft. 7 in. long, and 1½ in. in diameter, was driven through a man's skull by a blasting charge. It entered the cranium opposite the left angle of the lower jaw, behind the zygoma, and emerged on the left side of the centre of the frontal bone, near the sagittal suture. The man was conveyed home in a cart, in which he sat upright, descended of his own accord, and then with but little help mounted a long flight of stairs leading to a piazza, where he sat down, perfectly conscious, until aid could be procured. He recovered.⁷ A case more in point is that recorded by Brown-Séquard,⁸ which is from notes supplied by Mr. Brown-field, house-surgeon to the Poplar Hospital. A man fell into the hold of a ship a distance of sixteen feet. He fell so that the back of his head struck against a railway bar. The immediate effect was a slight stunning, but so slight that he was able to walk out of the ship's hold on to the deck. The surgeon who saw him found no symptoms, and told him to go home and rest. He walked one-third of a mile to the hospital, and on admission walked upstairs to bed. He, however, died the same night. On post-mortem examination there was a blood effusion under the dura mater on the surface of the left hemisphere. It was traced forwards and downwards around the anterior lobe, and then backwards along the base of the skull to a laceration of the cerebellum. This laceration was of the left lobe, on the inferior and posterior surface. It was vertical, an inch and a half in length, and half an inch deep. It was situated in the lobe quite away from the pons or crus cerebelli. Other cases from the history of the American war show certainly that injury is not immediately fatal, and the case I have just cited proves that a very extensive lesion of the cerebellum may be present without giving any symptoms whatever of want of power of coördination.

⁶ Op. cit., p. 89.

⁷ Medical and Chirurgical Review, 1850, vol. vi., p. 544.

⁸ THE LANCET, Nov. 30th, 1861.

CYSTINE IN THE URINE SUCCESSFULLY TREATED BY LARGE DOSES OF CARBONATE OF AMMONIA.

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CYSTINE is one of the most persistent of urinary deposits. After it has once appeared it may be produced, and in considerable quantity, over a period of twenty years or more, or its production may only cease with life. It is among the least common of urinary deposits, and usually its presence is not associated with any symptoms more serious or definite than malaise, a feeling of weakness, fatigue, or exhaustion, with depressed or very low spirits. One of the most remarkable cases of cystine deposit which I ever saw came under my notice many years ago, and has been under observation for fifteen years or more. During part of this time I saw the patient very frequently, and made many examinations of the urine, of the deposit, and of the calculi, which he passed in considerable numbers.

The patient (E. H. O——) was a fairly healthy-looking man, of thirty, 5 ft. 5½ in. in height, weighing 9 st. 6 lb., who was by trade a packer, an occupation involving pretty hard work and long hours. For four years before he came to me he had suffered more or less from lumbar pain and discomfort about the thighs, especially on exertion, and he often felt weak and low. He sometimes had to walk with a stick and had had to give up work now and then for a week or two at a time. About two years after the first commencement of the symptoms he suffered from a fixed pain in the left groin, and soon afterwards several stones were passed, sometimes to the number of twelve or more at once. One of the calculi, however, was so large that it remained in the bladder, and Mr. Coulson had to crush it.

I put the patient on carbonate of ammonia and told him to increase the dose gradually until it amounted to about fifty grains a day. He found the remedy agree with him so well that he soon exceeded this quantity, and for twelve months he took as much as fifty-five grains daily on the average, on some days consuming much more, on others considerably less, than this amount. In this time he did not pass as many calculi as before he had passed in a single month, and his weight increased to 9 st. 11 lb. In the next year he took about thirty-five grains of carbonate of ammonia per diem, and in the following only an average of about twenty grains a day. This patient's family history was not very satisfactory. His mother died at the age of fifty-two of phthisis, and two sisters died under the age of twenty-five of the same disease. He did not look a strong man, and the muscles of his arms and legs were below the average size and prominence. When a young man he used to take violent exercise and rowed in races. The quantity of urine passed was generally about the average, and never exceeded three pints. Every specimen that passed during a period extending over at least five years, he feels sure contained cystine. Afterwards the cystine was very frequently detected in considerable quantity. The crystals could be seen in the urine immediately after it was passed as small sparkling grains. The ammonia not only diminished the formation of the cystine, but the patient found that while he was taking it his bowels acted freely and he never required an aperient, although previously he had been much troubled by obstinate constipation. When the ammonia was not taken he says he did not feel as well as when he was taking it. He found no inconvenience from taking these large doses of carbonate of ammonia, and soon became so accustomed to the taste that he did not object to it in the least. I have seen this patient at intervals during the last few years, and although cystine in small quantities was generally present in the urine, it gave him no inconvenience, and no calculi seem to have been formed for the last three or four years. In this case, then, cystine has been found in large or small quantity during a period of at least eighteen years, and for the first five or six years of this time hundreds of cystine calculi were passed, the largest being about three-eighths of an inch in diameter, the smallest not larger than the head of a very small pin. The cystine crystals formed a visible whitish deposit, which varied much in quantity, even from day to day, but sometimes formed a sediment.

HOSPITAL DEMONSTRATION AT HAMPSTEAD.—A Friendly Societies' demonstration and church parade was held at Hampstead on the 24th inst. on behalf of the North London Hospital for Consumption. On the route of march to the parish church, where a specially arranged service was held, tables and collecting boxes were placed at convenient points, and a liberal collection was made at the church.

Another case was that of a gentleman about fifty, who had suffered from abundant cystine deposit for two years before I saw him, and had passed seven or eight renal calculi, some of them beautifully crystalline, and entirely composed of cystine. This patient took fifty grains of carbonate of ammonia dissolved in two ounces of distilled water three times a day after a meal for upwards of two years without any inconvenience, and during this time he had not even once required an aperient. If he gave up the ammonia he did not feel "up to the mark." As the amount of ammonia seemed very large in proportion to the water in which it was dissolved, I had twenty-five grains of Howard's volcanic carbonate of ammonia dissolved in an ounce of distilled water, and found that, although it tasted very strongly, it was not caustic. On inquiry, Mr. D— informed me it was only gradually that he reached this degree of concentration, but that he experienced no difficulty in taking it. He took it immediately after a meal—"on an empty stomach it produced nausea." For three years, with scarcely an intermission, 1050 grains of carbonate of ammonia were taken per week. The cystine deposit ceased during the last year of taking the medicine, and three years have now passed without its recurrence. I think, therefore, we may regard this case as really "cured" by the large doses of carbonate of ammonia.

It is to be feared that the tendency in the present day is rather to prescribe new remedies which are being continually introduced than to select from old ones such as are known to have valuable properties, and which have been proved by long experience to be really beneficial in certain pathological conditions. Far from condemning the new because they are new, like all who know the extreme value of such things as salicylate of soda and bromide of potassium I am most anxious to acknowledge my gratitude to those who devote themselves to the study and the discovery of the healing properties of every substance that can possibly be of use in treatment. But, while I am desirous not to say anything that could suggest to the reader that I am condemning the new things, I would impress upon the rising generation of practitioners the importance of being careful not to neglect the old. One cannot but desire that a drug like ammonia, so valuable in many forms of disease and departures from the healthy state, should not be forgotten or laid aside. The cases of cystine deposit to which I have drawn attention prove not only that large quantities may be taken without detriment or inconvenience, but that the use of the drug may be continued for a considerable period of time with advantage, and without the slightest derangement of any of the physiological processes being occasioned.

In our endeavours to help those who have acquired the vicious habit of consuming too much alcohol, ammonia is of great use, but it ought to be given in doses far larger than those in which it is usually prescribed. One of my patients assured me that he found ammonia very beneficial, that it relieved him of the feeling of tiredness from which he frequently suffered, and enabled him to perform hard work without getting exhausted. Not only have I found great benefit result from giving ammonia in considerable doses in many low forms of illness, but I have experienced its good effects by taking it myself. It acts very differently from any form of alcohol, although its effect upon the patient as judged from his own sensations appears to be somewhat similar. Though no feeling of hilarity seems to be induced by it, the lowness and depression of spirits and the tired feeling affecting the muscles, or rather the nerves and nerve centres by which they are supplied, are often removed in the course of half an hour or less by a dose of ammonia.

The cases I have adduced are sufficient to show that ammonia may be given in much larger doses than are generally prescribed, and that it need not be diluted to the degree generally supposed to be necessary. We used to be taught that five grains of carbonate of ammonia should be dissolved in at least an ounce of water, but as one of my patients took as much as twenty-five grains per ounce, and continued this three times a day for three years, we may feel satisfied that a solution of from ten to fifteen grains per ounce may be taken without difficulty, and I have prescribed this as often as once an hour in cases where the heart's action was very feeble and a decided stimulant was evidently necessary.

The public have discovered the value of sal volatile in cases of cold-catching and many minor ailments, but ammonia, like many other substances of real value in the treatment of many departures from the healthy state, has lately been some-

what neglected, and is, like some other valuable remedies, in danger of being forgotten amid the multitude of new preparations which thrust themselves upon our notice; and it is therefore desirable that attention should be directed to its usefulness, as well as to the value of many other drugs which have been of real service to past generations of patients.

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ON FIVE CASES OF SPORADIC CRETINISM IN SCOTLAND.

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(Concluded from page 316.)

CASE 4.—J. R—, male, aged thirty years, born at Falkirk, where he still lives. His parents are both in good health, free from goitre, and state that they knew nothing of the malady until it appeared in three of their children; to be noticed presently. The history is in other respects like that of the others, except that the father has occasionally indulged in drink. The patient is the third of eleven children, eight of whom are quite healthy; his eldest sister, who died lately, was affected like himself; his youngest sister is the subject of Case 5. Nothing was thought to be wrong with any of these three at their birth: they were like other children. It would seem, however, that there were certain indications of the malady, although of a very different kind from those existing in the former cases; for the mother stated that J. R— was an extremely beautiful infant, having a fine pink flush on his cheeks and ears like wax. After some time, although it was impossible to find out exactly when, he gradually changed; his complexion became dull and sallow; he grew slowly, and had a small appetite; years elapsed before he cut his first teeth; at seven he began to walk with a feeble and tottering step, and he was ten before he made the first feeble efforts to articulate. The neck is the only part of the body that has ever been swollen, where there is a bronchocele of considerable size. His height is 4 ft. 6 in.; circumference of the head $21\frac{1}{2}$ in.; there is a considerable posterior curvature of the spine in the cervical region; the head, trunk, and limbs are fairly proportioned; except a slight doughiness of the ears, there is no sign of myxœdema about the skin; no swelling anywhere. On the contrary, he is emaciated, and the skin is soft and free from desquamation. He has a double goitre, the swelling being as large as the fist on the left side, and somewhat less on the right; there is no trace of supraclavicular swellings on either side of the neck. He has the following features of the cretinous type of conformation:—Wide interval between the eyes; root of the nose much depressed; alæ nasi very wide, and the point of the nose elevated; arch of the palate narrow and high; lower lip depending, markedly thick in comparison with the upper, which is thin; tongue thick but moist; tendency to salivation. He is beardless but the hair of the scalp is abundant; abdomen slightly tumid; genitals not examined, but I had the opportunity of observing that there was a fair amount of pubic hair. The skin is generally dry; there are numerous pink spots over it, somewhat like faint petechiæ, some of these being apparently older and fainter than the others; veins are everywhere noticeable over the surface. He has his permanent teeth, and the lower incisors are notched as in Case 3; the upper are much worn. He is extremely slow in all his movements and cannot be hurried; he breathes heavily on the least exertion, from evident compression of the trachea; pulse and cardiac sounds weak; temperature in the axilla $97^{\circ}8'$; his skin always feels cold and he often becomes blue; he is extremely sensitive to cold, and last winter his mother says he was on one occasion nearly frozen to death. His articulation is hurried and indistinct, and seems almost painful to him; it is perhaps not so nasal as in other cases, but I heard only a few words, thrown out with a jerky effort. He could never be taught to read, write, or do any sort of work. All his senses are good, and he has no perverted idiotic propensities. His mother says the goitre is growing faster of late, and he is getting gradually weaker. The eldest sister of this patient was in a rather worse condition than himself, and was at