predicate the same of the hyoid and mandibular arches; but are we to stop there? May not the maxillo-palatine processes and the trabeculae cranii be the most anterior members of the same lateral series? Both the arrangements of the nervous and vascular structures favour this view. Should such be accepted, we have then vertebrate structure at its anterior end, in the form of descending arches (one behind another) on each side of the most anterior part of the notochord. The most anterior part of these arches (one arch on each side) will then unite together in front of the pituitary space, and form the trabeculae cranii; the next pair will form the maxilla, etc., on each side; the next pair, the mandibles; and the fourth pair will be the foundation of the hyoid arches, behind which will come the branchial ones.

One singular fact of anatomy thus receives an explanation. This fact is the existence, in the Myxinoidea, of but a single nasal sack, which is continued down between the trabeculae, forming thus a cleft in the middle of the skull. This, then, would be the first visceral cleft between the most anterior pair of arches—viz., those which form the trabeculae. If this view were to be accepted, the mouth must be regarded as the third visceral cleft of one side, joining uninterruptedly that of the other. The notion here promulgated was, however, presented to his audience by the Professor as a mere hypothesis, which perhaps might hereafter help towards an explanation of this *vexata quaestio* of comparative anatomy—the true nature of the skull.

DIABETES TREATED WITH CARBONATE OF AMMONIA, ADMINISTERED LARGELY.

By F. W. PAVY, M.D., F.R.S.

IN a recent number of the BRITISH MEDICAL JOURNAL, I referred to a case of diabetes mellitus, that I was treating with carbonate of ammonia, administered to a larger extent than is usual; and I promised, a little later, to send for publication an account of the result. This I now propose to do. The history of the case is drawn from the notes furnished to me by my clinical clerk, Mr. W. B. Taylor.

William F. aged 50, No. 2, John Ward, Guy's Hospital, admitted March 24th, 1869, a married man, by occupation an engineer on board a steam-vessel, plying between London and Yarmouth, states that about two years ago he noticed that he was losing flesh rapidly, and becoming very weak, and that at the same time he experienced an unusual amount of thirst and hunger, and passed a large quantity of water. The medical man whom he consulted told him he was suffering from diabetes, and sent him to Guy's Hospital, where he was admitted and remained for six or seven weeks. During this time he much improved, and upon his discharge passed between three and four pints of urine in the twenty-four hours, which was much less than he had formerly voided. He afterwards attended for three months as an out-patient, and still continued improving. Whilst under treatment, and for some time afterwards, he kept to a restricted diet; but about a year ago he resumed an ordinary mode of living, except that he avoided sugar, and only partook of potatoes occasionally. He also resumed his employment, and continued well up to a week before Christmas last. At this time he was shipwrecked at Yarmouth, and narrowly escaped being drowned. Two days afterwards, he noticed a return of his old symptoms; his urine began to increase in quantity, and he became again very thirsty. He resumed his former diet, but his complaint continued unabated, and finding himself daily getting thinner and weaker, he applied for admission into the hospital.

It is interesting to notice that after the complaint had been subdued and kept under for several months, a return of it in a state of severity seems to have been brought about by the shock received from his exposure to shipwreck. It is a fair conclusion, I think, that this was so, and it agrees with what I have noticed in other cases. I have long been of opinion that the complaint is susceptible of being influenced in a marked manner by mental states.

For the first few days after admission into the hospital, the patient was put upon a mixed diet. The quantity of urine ranged from 8 to 10½ pints *per diem*, and the sugar from 6,000 to 8,000 grains. Without change of diet at first, he was ordered to take 100 grains of carbonate of ammonia during the course of the twenty-four hours. It was dissolved in a pint of water, and administered in small frequently repeated portions. The effect to begin with was to cause an increased quantity of urine to be passed, but the proportion of sugar being rather diminished, the quantity for the twenty-four hours remained about the same; a decided influence was exerted upon the cerebral functions. The patient felt giddy, stumbled, and upon one occasion almost fell in walking; and had dimness of sight, with occasional bright flashes before his eyes. He also experienced a feeling of sickness, but there was no actual

retching or vomiting; and notwithstanding the feeling of sickness, he was able to take his food as usual.

On account of these symptoms, it was only for two days that the 100 grains of carbonate of ammonia were continued; on the third day, 90 grains were taken, and the next day it was taken off altogether, and aqua camphorae given instead. The patient was also now placed upon a restricted diet, which, as is usual, brought down the quantity of urine and sugar in a very notable manner.

In ten days' time, the carbonate of ammonia was administered again. During the first day, 75 grains were taken, and then, as before, 100 grains. This time no particular inconvenience was complained of, and the patient was ordered to persevere with its employment. The first day, the urine was higher in quantity, and continued afterwards rather higher than it had been, although the sugar remained for awhile about the same. Then, whether from the effect of the restricted diet or carbonate of ammonia, the sugar disappeared altogether, and after it had been absent for about ten days, the carbonate of ammonia was again taken off, and camphor-water given instead. The urine immediately rather fell in quantity, and remained devoid of sugar. After a lapse of nine days, a little ordinary bread—at first two ounces, and then four ounces, *per diem*—was allowed, and still the urine continued for a time free from sugar. Later, however, sugar reappeared, but not to any great extent. Again the carbonate of ammonia was given, and again an increase in the quantity of urine was noticed. For a few days the amount of sugar passed underwent no material change; subsequently, however, it again disappeared.

Looking at the facts of this case, taken altogether, it would certainly seem that the carbonate of ammonia exerted a controlling influence over the disease. No immediate and decided effect, however, of the kind that is produced by the administration of opium was traceable.

CLINICAL MEMORANDA.

[Under this head, we shall publish from time to time, as materials accumulate, short records of remarkable cases in practice which are sufficiently rare, interesting, or instructive, to deserve record, but do not call for lengthened statement or comment. Brevity and point should be the valuable characteristics of cases forwarded for this column.]

IODIDE OF POTASSIUM IN SYPHILIS.

By BALMANNO SQUIRE, M.B. Lond.

I BEG to add my testimony to that of Mr. W. Tyrrell and Mr. Langston Parker respecting the toleration by many individuals of large doses of iodide of potassium. My habit is, in cases of chronic disease, to increase gradually the dose of the remedy, on which I am depending, until I meet with some kind of indication that I have reached the maximum dose that can be tolerated without disadvantage, or, at the least, without inconvenience to the patient.

Acting on this principle, I am now giving a gentleman, aged 40, who has for the last five years been affected with extensive tertiary (tubercular) syphilitic skin-disease, as much as double the maximum daily quantity mentioned by Mr. Parker, and considerably more than Mr. Tyrrell's maximum. The gentleman referred to has been for the last fortnight taking a daily dose of two drachms of iodide of potassium. No symptom of any kind has presented itself to indicate that that dose is, in his case, an excessive one. He has none of the "coryza" which is the received indication of an over-dosing with this drug. His urine, which at first was increased in quantity by the medicine, soon subsided to its usual average amount. His appetite is unimpaired; and, so far as I am able to judge, he is all the better and none the worse for his medicine. He is now, after two months' treatment, almost completely well of his disease. At the beginning of this period, nearly the entire surface of his face, neck, arms, buttocks, thighs, and legs, was covered with large patches of tubercular syphilide, and he could only speak in a whisper, owing to similar disease of his larynx. The left half of his tongue was so swollen by a gummy tumour in it that he could eat only in distress. His voice is now merely rather rough, and he eats in comfort, his tongue being well. His face, neck, arms, and thighs, are quite clear of disease; and his legs and feet, which at first were so enormously swollen that he could not move about, are reduced to very nearly their natural size, so that whenever he wishes it he can run pretty fast.

It is fair to say that his medication was not confined to the use of large doses of iodide of potassium. He took also one drachm of iodide of iron, an ounce and a half of cod-liver oil, and six drachms of tincture of hops, in the day; and this internal treatment was backed up by an equally energetic administration of local remedies.

I believe that, had I been less bold with my physic, I should not have