

His attention was first drawn to the significance of the petro-squamosal sinus by the case of Dr. Cleveland, of Philadelphia, which Mr. Cheatle quoted, and of which Dr. Cleveland had sent the speaker his manuscripts, with the remark that in text-books of aural surgery, and also in those of descriptive anatomy, nothing, or almost nothing, was to be found. He looked up the subject and found only a short, but very good, description (about fifteen lines small type) in Quain. Now that authoritative attention had been directed to this sinus they should hear more about it. He felt sure that by its knowledge they should be able to understand many symptoms *in vivo*, and at autopsies conditions would be clear to them which thus far had been obscure.

THE TOPOGRAPHY OF THE FACIAL NERVE IN ITS RELATION TO MASTOID OPERATIONS.

BY ROBERT DWYER JOYCE, M.R.C.S. (Dublin).

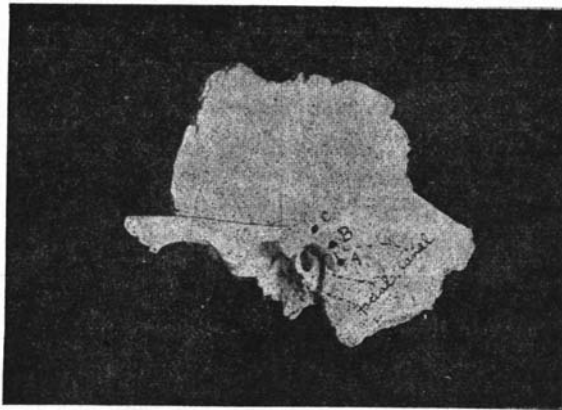
In connection with this subject I have made a systematic examination of thirty temporal bones, with the object of ascertaining the precise relations of the facial nerve to the surface of the adult skull; its depth, as well as that of the external semi-circular canal from the surface; and the relation of both these structures to the operations on the mastoid region.

For the material upon which the examination was conducted, as well as for many valuable suggestions, I am greatly indebted to Professor Birmingham, in whose laboratory the work was carried out.

Method.—Each temporal bone was cut vertically from before backwards, beginning in the angle between the petrous and squamous portions, so as to expose the aqueduct of Fallopius in its entire extent; the external semicircular canal was also cut across by the same section in every case.

Then I projected the facial canal on the surface by drilling from the exposed canal outwards. In order to do this correctly, it was necessary to make the holes accurately at right angles to the sagittal plane, and of course parallel to one another. For this purpose I constructed the following simple contrivance: A wheel-drill was fastened down on a sliding bed, so that the drill was capable of backward and forward movement only. An end-board was then fastened at right angles to the end of the base-board in which the drill-bed moved. This end-board was so fastened that it could be shifted about in a vertical plane perpendicular to the line

in which the drill worked. Each bone was now fastened to the end-board in correct (physiological) position by embedding it in dentist's "modelling composition," with the exposed facial canal towards the drill. Now, the drill always working in the same direction, and the bone capable of adjustment while remaining in a plane at right angles to the drill (*i.e.*, sagittal, as the bone was in correct position), I was enabled to get a perfectly true projection of the facial canal on the surface. Next I measured the distance of the facial canal from three points on the surface of the bone (see figure) viz., A, a point immediately behind the external auditory meatus on a horizontal line passing through its centre; B, a point immediately behind the upper part of the meatus and immediately



below the level of its upper margin; C, a point high up over the middle of the meatus on the posterior root of the zygoma. The points A and B are taken as representing the anterior lip of the bone wound, when the mastoid is opened below or above respectively. Also B is the point from which, as Birmingham has shown, the antrum may in every case be tapped, with least danger to both the lateral sinus and the cranial cavity, by a small drill or trephine sent straight in. The distance of the facial canal from C is of importance in removing the outer wall of the attic from the external auditory meatus.

Results.—The line of projection of the facial nerve lies on the posterior and superior walls of the external auditory meatus, about midway between the sulcus tympanicus and the outer margin of the bony meatus. As regards the relation of the facial nerve to the mastoid process, a straight drill-hole 3 or 4 mm. behind the posterior wall of the meatus, and parallel to it, will in every case strike the nerve if sent in far enough. This holds true from the

level of the floor of the meatus to within 4 mm. of the roof. I have found the distance of the facial nerve from the surface to vary very considerably. From the point A the average distance was 16.75 mm., the minimum being 13.25 mm. From the point B the average distance was 18.5 mm., and the minimum 14.75 mm. From the point C the average was 19.4 mm., and the minimum 16.25 mm.

The average distance of the external semicircular canal from B was 18.56 mm., and the minimum 13.75 mm. The average distance from C was 18.5 mm., the minimum being 16.25 mm.

Summary.—1. The facial canal lies altogether in front of the mastoid process, and a drill sent *straight* in from any point on the surface of the latter cannot injure the nerve.

2. Measured from the point B, the facial canal was in 43.3 per cent. of cases more superficial than the external semicircular canal; in the same per centage of cases this was just reversed; and in the remaining 13.4 per cent. these two structures were the same distance from the surface. Thus, the external semicircular canal cannot be taken as a guide to the depth of the facial nerve.

3. The average distance of the facial canal from the point B, is slightly less than that of the external semicircular canal from the same point.

4. In removing the outer wall of the attic, it should be remembered that the external semicircular canal is almost always (91 per cent.) nearer the surface, at the point C, than the facial nerve; however, as it is 1.5 mm. higher than the latter, it is almost out of danger; besides, it has a thicker covering of compact bone in this situation (attic) than the nerve.

ON A CASE OF RETROPHARYNGEAL ABSCESS OF AURICULAR ORIGIN.

BY DR. URBANO MELZI (Milan).

Among the different causes which may give origin to retropharyngeal abscess, one of the least frequent is doubtless recent or chronic suppuration of the middle ear, and, in fact, from the researches made by me in the literature, I have been able to find only twenty-two cases cited, so that I think it is interesting to record the case I observed during last May.

The case is one of a child, two years old, who was put under my charge for suppuration of both ears. The otoscopic examination revealed extensive perforation of the tympanum as much on the