

SOME OBSERVATIONS ON THE MASTOID PROCESS
AND ITS CELLS.

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The various texts call attention to the presence of small cells in the apex of the mastoid process of the temporal bone and small cells at the base. The department of anatomy in the University of Iowa finds a goodly number show large cells toward the apex and small cells in the region of the triangle of election or Macewen's triangle. (Fig. 1).

A study of this quite common variation from the text has led to a study of the reason for this variation in the two types of cells. As the result of these findings we believe that the point should be emphasized that the mastoid process is a petro-squamo-mastoid process and not a petro-mastoid process.

Referring to Figures 2, 3, 4, 5 and 6A and B, we observe sketches of temporal bones or parts of these bones at term. Fig. 2 is a lateral view of the entire bone. Note that the squamosa extends well down, posterior to the external auditory canal. Fig. 3 shows the squamosa removed, leaving the petrosa. Note that the dependent portion of the squamosa closes in the lateral side of the mastoid antrum, forming therefore its lateral wall in the complete bone. The roof, floor and medial wall is formed by the petrosa. Fig. 6A.

Fig. 4 shows the lateral view of the squamosa and annulus. Fig. 5 shows a medial view of the same two bones. Note how this view indicates that the squamosa has two tables which separate in the region of the antrum and attic, leaving the single outer table as the lateral wall of the antrum and attic. This inner table at the place of separation articulates with the tegmen tympani and the outer table, at a lower level, with the petrosa, in the region of the antrum and with the drum membrane in the region of the epitympanic recess. (Figs. 6A and B). Fig. 6A is a schematic vertical section through the antrum at term, and Fig. 6B, through the drum membrane.

With the great lateral growth of the brain, after birth, the squamosa develops a horizontal portion, there being only a vertical portion at term. This horizontal portion develops into the eminentia articularis, glenoid fossa, roof of the external auricular canal, besides the mass of cells leading from the lateral wall of the antrum. (Figures 7D and C). Fig. 8 is one of a series. A vertical section was made through the external auricular canal, not injuring, therefore, the posterior wall of this canal and also exposing the antrum. The lateral wall of the antrum was painted with a wax, making it impervious to fluids. Pouring a colored fluid into the antrum, the apical cells were invaded, but not the lateral cells. Removing this wax, thus opening into these lateral cells, and then painting the remaining walls with a melted wax, on pouring into the antrum a differently colored fluid, the lateral cells were invaded, but not the apical cells. After these injections were made, the cortex was ground away with the resulting picture of the two sets of cells. Fig. 8.

In a certain number of specimens this sharp differentiation was not obtained, the two fluids mingling. That a few specimens showed this sharp differentiation indicates that there is a tendency for a persistence of this separation in the adult bone. The clinical men note that apical cells may be involved, and not basal cells, and vice versa.

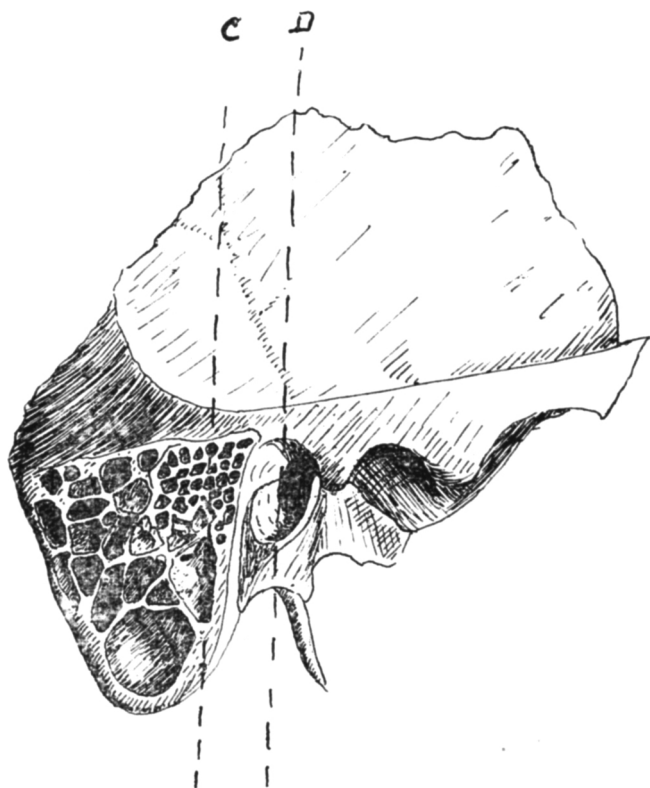


Fig. 1.

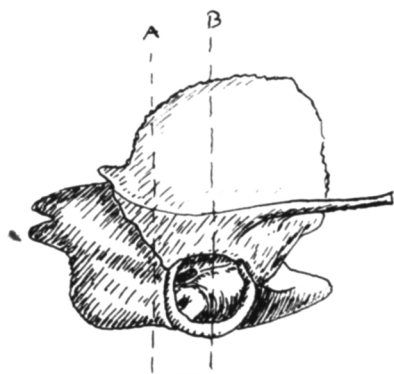


Fig. 2.

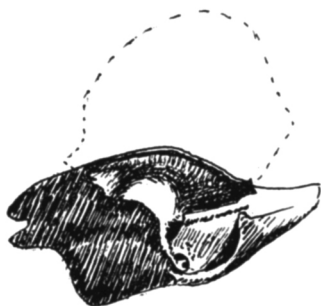


Fig. 3.

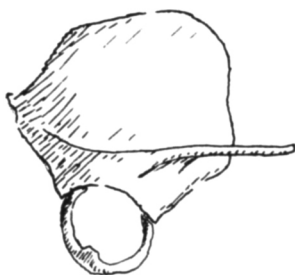


Fig. 4.

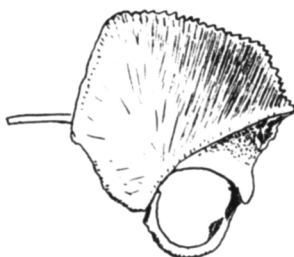


Fig. 5.

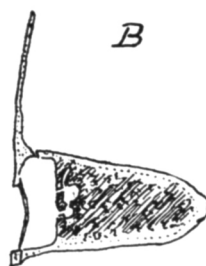
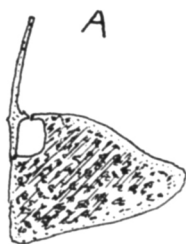


Fig. 6.

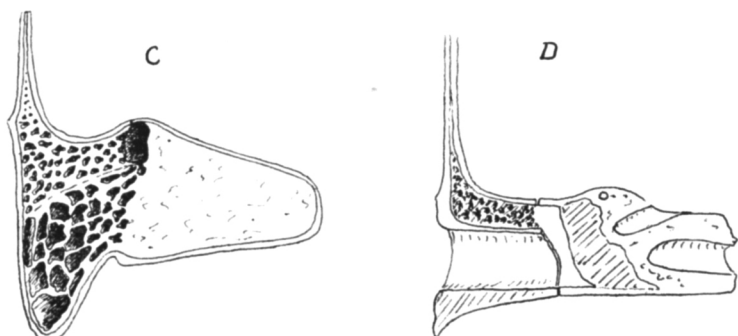


Fig. 7.

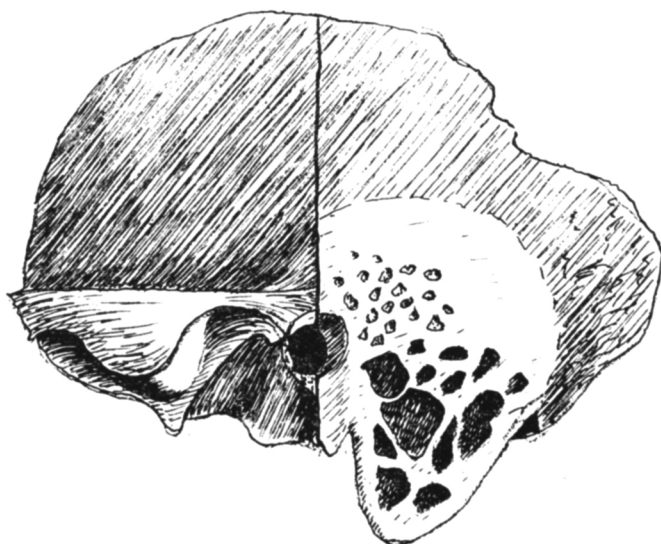


Fig. 8.