the tympanic part, four for the petrous and mastoid parts, and two for the styloid process. Just before the close of fetal life (Fig. 142) the temporal bone consists of three principal parts: 1. The *squama* is ossified in membrane from a single nucleus, which appears near the root of the zygomatic process about the second month. 2. The *petromastoid* part is developed from four centers, which make their appearance in the cartilaginous ear capsule about the fifth or sixth month. One (*proötic*) appears in the neighborhood of the eminentia arcuata, spreads in front and above the internal acoustic meatus and extends to the apex of the bone; it forms part of the

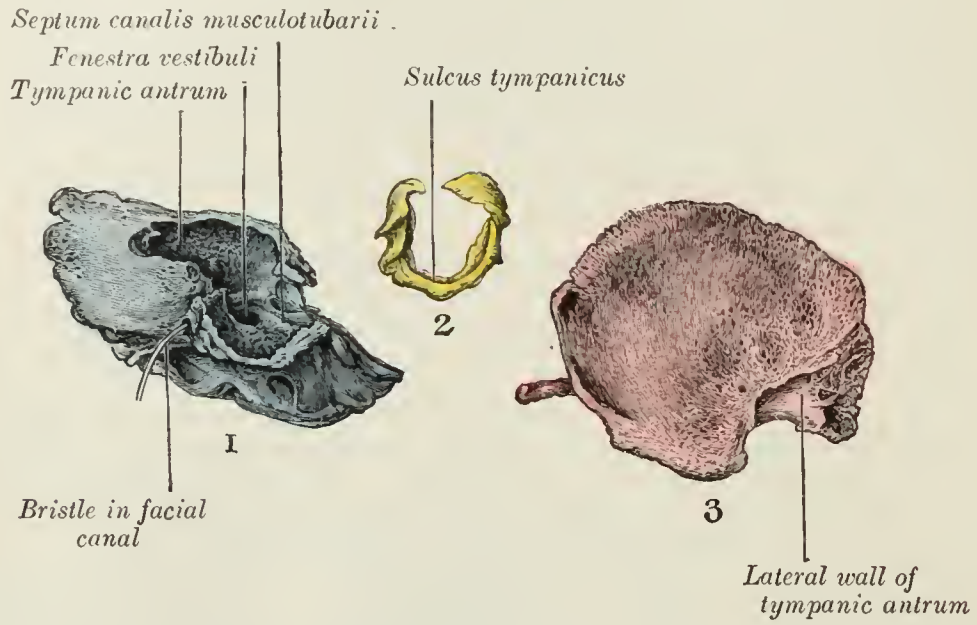

Fig. 142.—The three principal parts of the tempora bone at birth. 1. Outer surface of petromastoid part. 2. Outer surface of tympanic ring. 3. Inner surface of squama.

cochlea, vestibule, superior semicircular canal, and medial wall of the tympanic cavity. A second (*opisthotic*) appears at the promontory on the medial wall of the tympanic cavity and surrounds the fenestra cochleæ; it forms the floor of the tympanic cavity and vestibule, surrounds the carotid canal, invests the lateral and lower part of the cochlea, and spreads medially below the internal acoustic meatus. A third (*pterotic*) roofs in the tympanic cavity and antrum; while the fourth

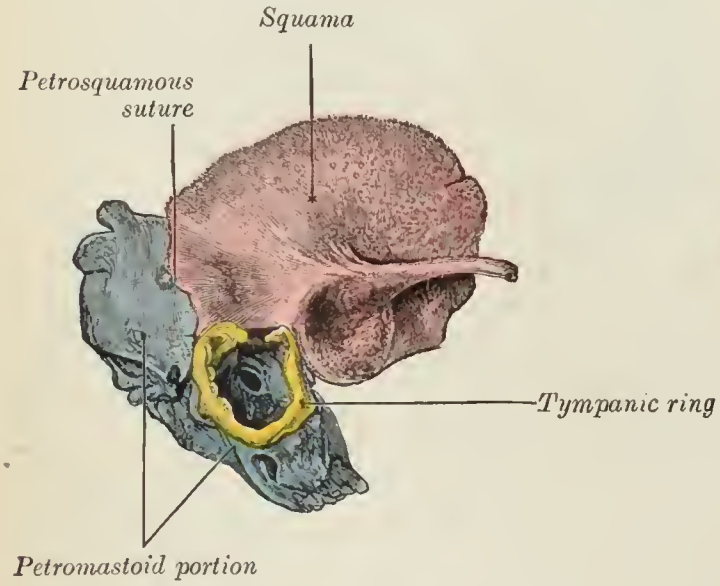

Fig. 143.—Temporal bone at birth. Outer aspect.

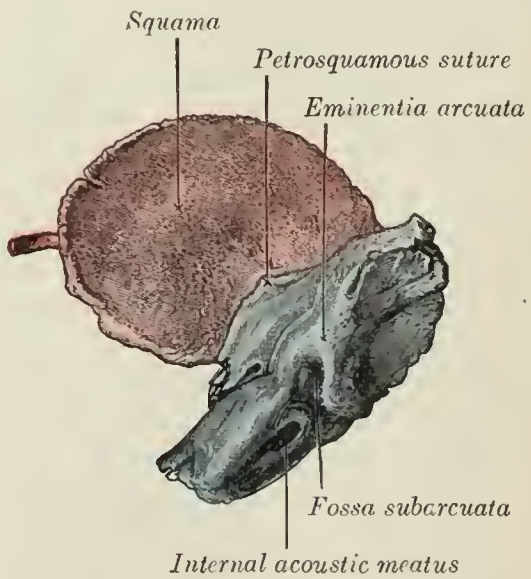

Fig. 144.—Temporal bone at birth. Inner aspect.

(*epiotic*) appears near the posterior semicircular canal and extends to form the mastoid process (Vrolik). 3. The *tympanic ring* is an incomplete circle, in the concavity of which is a groove, the tympanic sulcus, for the attachment of the circumference of the tympanic membrane. This ring expands to form the tympanic part, and is ossified in membrane from a single center which appears about the third month. The *styloid process* is developed from the proximal part of the cartilage of the second branchial or hyoid arch by two centers: one for the proximal part, the *tympanohyal*, appears before birth; the other, comprising the rest of the process, is named the