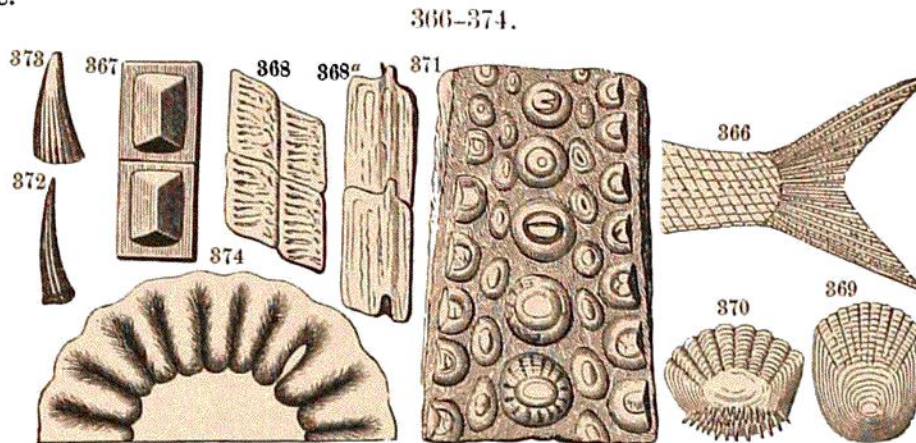


the Sharks (Fig. 375), but non-vertebrated or homocercal in many later kinds (Fig. 366), except in the embryonic state. Teeth (Figs. 372, 373) labyrinthine in interior structure (Fig. 374, a cross-section), a feature which is more strongly marked in the teeth of ancient Amphibians (the Labyrinthodonts), which geologically succeeded to the Ganoids.

The Ganoid tribe includes : —

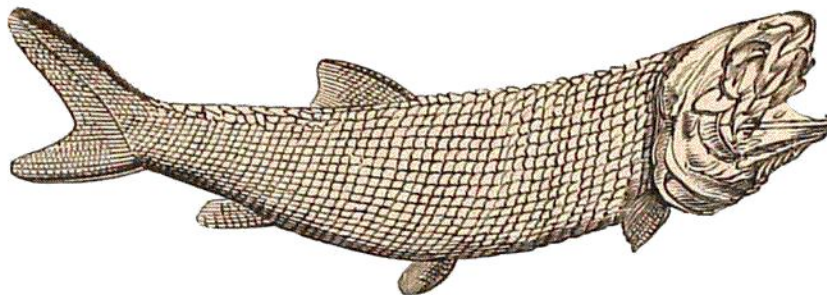
The *Placoderms*, an aberrant type, having the head and anterior part of the body covered with a shield made up of plates, as represented in figures of Pteraspids, Cephalaspids, Asterolepids, etc., on pages 566, 624. The posterior part of the body has scales, which admit of free movement for sculling locomotion. The pectoral fins are large arms in the Asterolepids, fitted apparently for crawling over muddy surfaces left by the retreating tide.



**GANOIDS** (excepting 369, 370). — Fig. 366, Tail of *Thrissops* ( $\times \frac{1}{2}$ ); 367, Scales of *Chirolepis Traillii* ( $\times 12$ ); 368, id. *Palæoniscus lepidurus* ( $\times 6$ ); 368 a, under-view of same; 369, Scale of a Cycloid; 370, id. of a Ctenoid; 371, part of pavement-teeth of *Gyrodus umbilicus*; 372, Tooth of *Lepidosteus*; 373, id. of a *Cricodus*; 374, Section of tooth of *Lepidosteus osseus*.

The *Crossopterygians*, or those having in the pectoral fin, like many Dipnoi, a thickened finger-like axis, with reference to which the rest of the fin is like a fringe, and thence the name of the group. (Sthenopterygians, referring to the strengthened axis of the fin, would be better.) *Holoptychius*, *Onychodus*, *Glyptolepis*, *Rhizodus*, *Osteolepis*, are some of the ancient genera; and *Polypterus*, of the Upper Nile, is a related genus.

375.



***Palæoniscus Freieslebeni*** ( $\times \frac{1}{2}$ ), Permian.

The *Palæoniscoids*, in which the pectoral fins have no thickened axis, besides other peculiarities, as in *Palæoniscus* (Fig. 375), *Chirolepis*, *Eurynotus*, etc.

The *Pycnodonts*, having the palate paved with blunt rounded molar-like teeth, as in *Pycnodus*, *Gyrodus* (Fig. 371), etc.

3. **Dipnoans or Lung-fishes.** — These fishes, of which the species of *Lepidosiren* and *Ceratodus* are living representatives, have both gills and lungs, the air-bladder being cellular, so as to have functional value as a lung — a characteristic that enables the