

Family LXV. PODOCYRTIDA, n. fam. (Pl. 67, 68, 71-73).

Theopilida et Theoperida, Haeckel, 1881, *Prodromus*, p. 435, 436.

Definition.—*Tricyrtida triradiata*. (Cyrtoidea with a three-jointed shell, divided by two transverse constrictions into cephalis, thorax, and abdomen, and bearing three radial apophyses.)

The family *Podocyrtida*, composed of the *Theopilida* and *Theoperida* of my *Prodromus*, comprises those *Cyrtoidea* in which the lattice-shell is three-jointed and triradial, bearing three external apophyses. The two subfamilies differ in the shape of the basal mouth, which in the *Theopilida* is a simple wide opening, in the *Theoperida* closed by a lattice-plate. The latter are derived from the former by development of this closing plate. The phylogenetic origin of the *Podocyrtida* may be found in the *Tripocyrtida*, from which they are derived by development of an abdomen. But there are also some forms, which may be derived directly from the *Plectoidea*, and the origin of some other forms seems to be doubtful.

The *Podocyrtida* represent one of the largest groups of *Cyrtoidea*, very rich in numerous species, which are partly very common and widely distributed. A large number of living and fossil species has already been described and figured by Ehrenberg, (1872, 1879, *loc. cit.*). These mainly belong to his genera *Podocyrtis*, *Pterocanium*, *Rhopalocanium*, *Lithornithium*, &c., and many of them are very characteristic and common forms, in which the triradial structure of the three-jointed shell is visible at first view. We distinguish here twenty genera and one hundred and fifty species. The majority have a shell with a simple wide open mouth (*Theopilida*, fourteen genera and one hundred and eighteen species), in the minority the mouth is closed by lattice-work (*Theoperida*, six genera and thirty-two species).

The three joints of the shell have in the majority of *Podocyrtida* such a proportion that the cephalis is the smallest, the abdomen the largest, and the thorax between them intermediate in size. The cephalis bears almost constantly an apical horn; this is rarely reduced or lost; sometimes two or more horns are developed. The three radial apophyses arise originally from the base of the cephalis, and may from this point run along the shell-wall embedded in the lattice-plate of the thorax and the abdomen. They leave the latter at very different points, and form either lateral wings or terminal feet, sometimes both together. They are either solid or latticed, sometimes also branched, and of very various shape. Often only the three terminal feet surrounding the mouth have remained, whilst the ribs have disappeared.

Many species of this large family are very variable and connected with other different species by numerous transitional forms; the distinction of the genera described is also often very difficult.