

fig. 6). The series A are by far the largest, and are usually much branched. The membrane on their posterior (branchial) surface is loose and voluminous (Pl. VI. fig. 7, *tn. m.*).

The dorsal tubercle (Pl. VI. fig. 9) is very simple, and approaches in structure that of *Molgula pyriformis* (Pl. VI. fig. 3). The duct from the neural gland swells out at the posterior angle of the peritubercular area into an elongated oval chamber, which opens anteriorly by a simple quadrangular mouth.

Three specimens of this species were obtained at Kerguelen Island. One is labelled "Kerguelen, 10-60 fathoms;" one "January 29, 1874, off London River, Kerguelen, 100 fathoms;" and one "Kerguelen, 10-100 fathoms."

Family CYNTHIIDÆ.

Body usually attached, rarely free, sometimes pedunculated.

Test membranous or coriaceous, rarely cartilaginous or covered with sand.

Branchial aperture four-lobed, atrial four-lobed.

Branchial Sac longitudinally folded; internal longitudinal bars not papillated; stigmata straight, never forming spirals.

Tentacles simple or compound.

Intestine on the left side, slightly or not at all attached to the mantle.

Genitalia on the inner surface of the mantle, either on both sides or on one only.

The Cynthiidæ, and especially those forming the sub-families Bolteninæ and Cynthinæ, which have compound tentacles, are not far removed from the Molgulidæ, and were only separated as a distinct family by Lacaze-Duthiers in 1877. Heller previously (1874-77) considered them as one family. The Cynthiidæ form a very large group, and contain probably more known species than the other three families of Ascidiæ Simplicis put together.

Savigny, in 1816,¹ founded two of the genera comprised in this family, namely *Boltenia* and *Cynthia*. The latter genus as defined by Savigny may be split up into two well-marked sections—one containing the typical forms (the modern *Cynthia*), in which there are many folds in the branchial sac and the tentacles are compound; and the other including the *Styela*-like forms with only four folds on each side of the sac and simple tentacles.

As each of these three types has been split up into genera I have thought it best to consider them as sub-families, and they were described in the Preliminary Report² as the Cynthinæ, the Bolteninæ, and the Styelinæ.

The condition of the apertures though rather variable is quite characteristic; there are never more than four well-marked lobes round either branchial or atrial apertures.

¹ Mémoires sur les Animaux sans Vertèbres, pt. 2, fasc. 1.

² Proc. Roy. Soc. Edin., Session 1880-81, p. 53.