

smaller placed alternately with the larger ones (Pl. IV. fig. 5). In minute structure, the test is very compact (Pl. IV. fig. 8), having a close homogeneous matrix (*t.m.*), in which large fusiform and stellate distinctly nucleated protoplasts (*t.c.*) are scattered. In the protoplasm of some of these, clear spaces or vacuoles are visible, and these seem in process of becoming converted into bladder-cells, but no true bladder-cells and no pigment-corpuscles were noticed.

The mantle is thick and dark coloured, but is not very muscular, the chief fibres being a series of bands radiating from each aperture (Pl. IV. fig. 7, *m.b.*), and the sphincters. There are also much finer irregular bundles of fibres all through the mantle.

The branchial sac is peculiarly thick and opaque (Pl. IV. fig. 6). The network formed by the transverse vessels is strong, and there are broad horizontal membranes hanging from most of the transverse vessels and attached by their ends to the internal longitudinal bars. The stigmata are small, as the interstigmatic tubes, like all the vessels in this sac, are strong.

The dorsal tubercle is enclosed in a triangular peritubercular area, and has a reniform shape with the greatest length antero-posterior. Both horns are coiled inwards and form close spirals, the posterior being the larger.

The œsophageal aperture is a little more than one-third of the way down, and the œsophagus curves ventrally and posteriorly. The stomach is not clearly defined, and the intestine turns anteriorly and then dorsally for a short distance, then curves abruptly on itself and returns on the anterior side of the former part, and, closely pressed to it, passes the œsophagus and ends near the atrial aperture. The genital gland on the left side lies in front of the intestine on the ventral side of the rectum. The gland on the left side (Pl. IV. fig. 7, *g.*) lies near the dorsal margin in front of the large crescentic renal sac (Pl. IV. fig. 7, *r.o.*), which contains, occupying its centre, a large pulpy elongated mass full of black concretions.

Lesson's specimens were got at Port Louis, Falkland Islands. Cunningham obtained his at Gregory Bay, in the Straits of Magellan, and at Stanley Harbour, Falkland Islands.

The Challenger brought home six specimens from the Falklands, at Station 315, January 27, 1876; lat. 51° 40' S., long. 57° 50' W.; depth, 5 to 12 fathoms; bottom, sand and gravel.

*Molgula pedunculata*, Herdman (Pl. V. figs. 1-3).

*Molgula pedunculata*, Herdman, Preliminary Report, Proc. Roy. Soc. Edin., 1880-81, p. 234.

*External Appearance.*—The shape is between irregularly spherical and pyriform, it is elongated transversely, and slightly compressed laterally; the ventral edge forms a short thick stalk while the rest of the body is globular. The anterior end is flat and broad, and becomes continuous at its ventral edge with the short stalk. The dorsal edge