Sub-family, POLYORCHIDÆ, A. Agass., 1862.

Cannotidæ with four or six radial canals, which are pinnated, or furnished with cæcal side branches which do not reach into the circular canal.

Ptychogena,[1] A. Agass., 1865.

Cannotidæ with four pinnated radial canals, whose alternating pinnated branches bear several leaf-shaped cleft, indented or compound genitalia. Stomach a flat, wide pouch, without special oral lobes.

The genus *Ptychogena* was established by A. Agassiz, in 1865, for the North American deep-sea form, *Ptychogena lactea* (North American Acalephæ, p. 137, fig. 220). A second somewhat different deep-sea species from the North-Atlantic Ocean (*Ptychogena pinnulata*) is here described, and completes Agassiz's short definition. *Ptychogena* is the connecting link between the apparently very different genera *Gonynema* and *Staurophora*. Whilst the stomach is a long tube in *Gonynema*, and is entirely rudimentary in *Staurophora*, in *Ptychogena* it forms a flat, wide-opened quadrate pouch, whose four corners pass conically contracted without definite limits into the four radial canals; and whilst in *Gonynema* the pinnated branches of the genitalia are entirely limited to the radial canals, but in *Staurophora* run centripetally to the centrum of the cross of these canals, they are developed in an intermediate degree in *Ptychogena*. They there occupy only the proximal half of the radial canal, but pass from it some distance upon the wall of the stomach. Both North Atlantic species of *Ptychogena* appear to be true deep-sea Medusæ. A. Agassiz writes of it as follows (*loc. cit.*, p. 139) :—

"This Medusa, like *Tima*, swims at a considerable depth below the surface. The action of the light and increase of temperature of the surface is sufficient to kill them in the course of half an hour; the moment they are brought to the surface the spherosome loses its transparency, the genital organs become dull, and the Medusa is soon completely decomposed. This action is much more rapid than anything I have noticed even in Ctenophoræ, *Mertensia* being the only genus in which the decomposing effects of light and heat are at all equal to what is produced here. This Jellyfish must be a deep-water species, as they have only been found during a single fall, and then only for a few days, when they seemed quite abundant."

These remarks most probably are applicable to *Ptychogena pinnulata* as well as *Ptychogena lactea*. The example of the former in the Challenger collection was found at a depth of 1250 fathoms.

[1] Πτυχή, turning; γενή, reproductive organs.