PLANKTONIC CEPHALOPOD LARVAE FROM THE EASTERN AUSTRALIAN COAST.

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(Plates xxiv–xxvii, and Map.)

Introduction.

The larval cephalopod material upon which this report is based was obtained in plankton hauls of the Research Ship *Warreen* along the eastern Australian coast in 1938–1941, during investigations by the Fisheries Division, Council for Scientific and Industrial Research. I am indebted to Dr. H. Thompson, Chief, Fisheries Division, for the opportunity to report on this interesting and unusual material, and to Dr. D. L. Serventy and Mr. K. Sheard for help in matters relating to stations, depths and other factors associated with the collection. My thanks are also due to Miss Betty McKinnon, Lands Department, Sydney, for preparation of the map.

The material is extremely important in the study of this molluscan class. One hundred and thirty specimens examined from stations over an area extending from Port Arthur, S.E. Tasmania, to Heron Island, Great Barrier Reef in the north, represented 13 families, 19 genera, and 20 species, a number of which are bizarre forms belonging to families hitherto unrecorded from the South Pacific. The minute size, delicate nature, and rarity of the majority of specimens permitted only the simplest dissection in a few cases. Practically all forms appear quite larval and no signs of hectocotylization were evident.

Character and Relationships.

A surprising feature of the collection is the large number of families represented by only a single specimen, the only species occurring in any considerable number being *Pyrgopsis pacificus* (Issel), and the larval *Rhyncoteuthion* form of an Omnastrephid, *Nototodarus gouldi* (McCoy), young of which are removed at times from the stomachs of Tuna taken off this coast. The almost certain association of this larva with the adult *gouldi* has proved one of the most interesting surprises in the collection. The predominance of Oegopsid and the scarcity of Myopsid cephalopods are very marked, only three species of the latter suborder being present.

Another striking feature is that, with few exceptions, the new or little known species either belong to genera previously known only from a comparatively small area in another part of the world or to genera with a wide range. For instance, the appearance on this coast of the extraordinary little species *Ctenopteryx sicula* Appellof, hitherto known only from the Mediterranean and North Atlantic regions, is most surprising. Similarly, the appearance of the genera *Tetronychoteuthis* Pfeffer (Atlantic), *Mastigoteuthis* Verrill (Atlantic and Pacific), and *Heteroteuthis* Gray (Mediterranean, East Indies, Hawaii), and the occurrence of the family Bolitaenidae, represented by only a single specimen, so far south of its known Pacific range, gives a new aspect to our cephalopod fauna.

On the other hand, the appearance of *Brachioteuthis riisei* in a local collection for the first time, further extends its already wide range, and gives support to Hoyle's statement (1912, p. 338), that this curious little pelagic species will eventually prove to have an almost universal range. In contradiction to the presence of these unusual forms, so far removed from their accepted range, some rare species have been found