

This somewhat unexpected discovery underlines the importance of even small, but well-documented, collections from poorly-known areas. A preliminary announcement of this interesting record was made by Yaldwyn (1966).

Along the extensive littoral of southern Chile that stretches in a north-south direction through 13 degrees of latitude (from 42° to 55° S.) and for 780 nautical miles from Isla Chiloé to Isla Navarino, a number of changes take place that are reflected in the composition of the decapod fauna. One of these, the abundance of species as a concomitant of latitude, was sufficiently marked to have been noted in the field by Royal Society Expedition personnel and remarked upon in the Short Account of the Expedition with which each recipient of expedition material was provided:

"Crabs and Porcellanidae are very abundant [at Isla Chiloé, 42° S. Lat.], there being at least 6 species [actually three species] of the latter group and 10 [actually 11] of the former. Among the most interesting are the commensal Pinnotherids, a large species, up to 1½ inches in diameter being common in the cloaca of the common sea-urchin, and another in a large Holothurian, probably *Encyclus chilensis*. This Holothurian, which reaches over a foot in length is abundant in low tidal pools and crevices low down on the shore, and in the sub-littoral. A good series of the crab in this Holothurian, previously known only from 4 specimens, has been collected.

". . . When compared with the coasts of Chiloé one of the salient features of the southern region is the reduction which has occurred in the number of species present, e.g., at Chepu on the west coast of Chiloé *Brachyura* [and *Anomura*] (numbering about 15 species) were a conspicuous feature of the intertidal zone, whereas in the south [e.g., at Isla Navarino, Fuegia] only two species were found of which only a species of *Hymenosoma* was abundant."

The occurrence of an increasingly larger number of species (but fewer individuals of a given species) as the collector proceeds from the poles towards the equator is thus substantiated by the experience of Royal Society Expedition collectors. Less evident to them, but apparent in the laboratory once measurements are taken, is a cline in size of individuals of species ranging throughout this expanse of coastline, with the largest individuals occurring in the higher latitudes. This is best demonstrated by *Halicarcinus planatus*, and by ovigerous females, which show a corresponding increase in size at sexual maturity. Also occurring throughout this extensive range, *Acanthocyclus albatrossis* shows similar correlation with latitude in absolute size, although ovigerous females are lacking from Isla Chiloé with which to compare those from more southerly localities.

A third phenomenon that undoubtedly occurs is that of equatorial submergence, in which the same species, following a temperature gradient, is found at successively lower tidal levels as one approaches the tropics. Its counterpart, polar emergence, would be expected of such species as *Halicarcinus planatus* and *Acanthocyclus albatrossis* in the Fuegian region; however, the referral of their habitats to biotic zones, such as "*Chthamalus* zone", "*Lessonia* zone", or "*Durvillea* zone", which in themselves may show vertical displacement with latitude, rather than to absolute tidal measurements, tends to obscure this relationship for Royal Society Expedition specimens (cf. Garth, 1957, p. 111).

While as a matter of convenience and uniformity of treatment this report appears under joint authorship, it should be understood that each author is responsible for that portion dealing with his specialty: J. C. Yaldwyn for the macrurans, Janet Haig for the anomurans (excluding the Aeglidæ, to be the subject of a separate report by Nivaldo Bahamonde N., and John S. Garth for the brachyurans. Since each of these sections of the Decapoda of Chile has been the subject of a recent comprehensive review, the Macrura by Holthuis (1952), the Anomura by Haig (1955), and the Brachyura by Garth (1957), reference is made to these reports for the complete synonymy of each species. The single measurement given for specimens in all three sections is length of carapace.