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Balfour, F. M., 1876.—"The development of Elasmobranch Fishes," Humphry and Turner's *Journ. of Anat. and Physiol.*, vol. x. Cambridge.

Bashford Dean, 1903-04.—"Notes on the long-snouted Chimaeroids of Japan," *Journ. Coll. Sci. Tokyo*, vol. xix.

" 1906.—*Chimaeroid Fishes and their development.* Washington.

Brauer, 1908.—"Die Tiefsee Fische," *Wissenschaft. Ergebnisse Deutschen Tiefsee-Exped. "Valdivia,"* vol. xv.

Garman, 1899.—"Reports on an exploration off the west coasts of Mexico, etc., by the U. S. Fish Commission steamer 'Albatross,'" *Mem. Mus. Comp. Zool.*, vol. xxiv. Cambridge, U. S. A. (*Harvard*).

Goode and Bean, 1895.—"Oceanic Ichthyology," *U. S. National Museum, Special Bulletin.* Washington.

Günther, 1870.—*Catalogue of the Fishes in the collection of the British Museum*, vol. viii. London.

" 1877.—"Preliminary notes on new Fishes collected in Japan by H.M.S. 'Challenger,'" *Ann. Mag. Nat. Hist.* (iv), vol. xx. London.

" 1887.—*Report on the scientific results of the voyage of H.M.S. "Challenger,"* Zoology, vol. xxii. London.

Holt and Byrne, 1910.—"Third report on the Fishes of the Irish Atlantic Slope. The Holocephali or Chimaeras," *Fisheries, Ireland, Sci. Invest.*, 1908, iv.

Illustrations of the Zoology of the R.I.M.S. Ship "Investigator," Fishes, plates vii, viii, xiii, xv, xvii, xix, xx.

Lloyd, 1909.—"A description of the Deep-sea Fish caught by the R.I.M.S. Ship 'Investigator' since the year 1900," *Memoirs of the Indian Museum*, vol. ii, No. 3. Calcutta.

McIntosh and Prince, 1890.—"On the development and life histories of the Teleostean Food and other Fishes," *Trans. Royal Soc. Edin.*, vol. xxxv, pt. iii (No. 19). Edinburgh.

Richardson, 1844.—*The Zoology of the Voyage of H.M.S. "Sulphur,"* Ichthyology. London.

Tate Regan, 1907.—"Report on the Marine Fishes collected by Mr. J. Stanley Gardiner in the Indian Ocean," *Trans. Linn. Soc.* (ii), Zoology, vol. xii.

II. NOTES ON DECAPODA IN THE INDIAN MUSEUM.

III. The Species obtained by R.I.M.S.S. 'Investigator' during the Survey Season 1910-11.

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(Plate i.)

During the season 1910-11 it was unfortunately only possible to make four hauls of the trawl in deep water; but at one of the stations a large number of interesting Decapod Crustacea were obtained and, inasmuch as many of these species appear to be rare, we have thought it as well to draw up a few notes on the collection.

The only species hitherto undescribed is a Macruran of the genus *Merhippolyte*, the first representative of the family Hippolytidae which has yet been found in deep water off the coasts of India. A small crab, allied to the genus *Carcinoplax*, also seems to belong to a species as yet unknown; this specimen is being referred to Col. Alcock and is not included in the present account.

Of the others in the collection perhaps the most interesting is the male of *Aristeomorpha rostridentata* (Bate), a species previously known from females only. *Pentacheles hextii* of Alcock is identified with the Atlantic and Mediterranean *Polycheles typhlops* and our knowledge of the distribution of several other scarce forms has been considerably extended.

The stations at which the collection was made are all situated off the S.W. coast of India; they are—

St. 388. 26-iv-11. 7° 44′ 10″ N., 76° 35′ 45″ E. 670 fathoms.

St. 389. 27-iv-11. 9° 01′ 50″ N., 75° 55′ 50″ E. 81 ,,
A considerable number of corals (Caryophyllinae) were obtained at this station.

St. 390. 27-iv-11. 9° 09′ N., 75° 46′ E. 260 fathoms.
On this occasion the net caught on a rock and was badly torn. No Decapoda were taken.

St. 391. 27-iv-11. 9° 14′ 10″ N., 75° 45′ E. 237 fathoms.
This haul was remarkable for the large number of the Gastropod, *Xenophora pallidula*, which were obtained. The majority of the Decapoda which form the subject of the present paper were found at this station.

Only a few of the more important papers dealing with deep-sea Decapoda are cited. The date appended to an author's name affords reference to the short bibliography at the end of the paper.

DECAPODA NATANTIA.

Tribe **Penaeidea.**

Family *PENAEIDAE.*

Sub-family PENEINAE.

Peneopsis coniger var. **andamanensis** (Wood-Mason).

Metapeneus coniger var. *andamanensis*, Alcock, 1901, p. 17, and 1906, p. 27, pl. iv, fig. 13.

Peneopsis coniger var. *andamanensis*, de Man, 1911, p. 61.

Eleven males and nineteen females were obtained at St. 389.

The distinctions between the variety and the typical form which are afforded by the thelycum are well marked and apparently constant. The form found in the variety has been illustrated by Alcock and we take this opportunity of giving a similar figure of the thelycum of the typical *P. coniger* (pl. i, fig. 7).

In males we have been unable to detect the pair of spines which de Man mentions at the base of the second peraeopods.

Parapeneus rectacutus (Bate).

Peneus (*Parapeneus*) *rectacutus*, Alcock, 1901, p. 17, and *Ill. Zool. Invest.*, Crust., pl. xlix, fig. 5.

Parapeneus rectacutus, Alcock, 1906, p. 33, pl. vi, figs. 19, 19a-b, and de Man, 1911, pp. 78, 82.

A much damaged female from St. 391 may safely be referred to this species. The station represents the most westerly point at which *P. rectacutus* has been observed.

With reference to de Man's notes on this species (*loc. cit.*, p. 82) we would observe that the minute rudiments of exopods on the thoracic legs, mentioned by Wood-Mason and Alcock (1891, p. 274), can be detected in examples preserved in the Indian Museum. The ridge defining the anterior part of the cervical groove agrees precisely with Alcock's figure, but in some females the spine which is stated to occur on the basis of the second peraeopods appears to be missing. The last pair of legs fails to reach to, or slightly exceeds, the apex of the antennal scale. There is no sharp spine at the distal end of the lobes of the petasma.

Haliporus aequalis, Bate.

Haliporus aequalis, Alcock, 1901, p. 23, and de Man, 1911, p. 32.

Seven males and fourteen females were obtained at St. 391.

Aristaeus semidentatus, Bate.

Aristaeus semidentatus, Alcock, 1901, p. 31, and *Ill. Zool. Invest.*, Crust., pl. xlix, fig. 3.
? *Aristeus semidentatus*, de Man, 1911, p. 29.

Six males and eleven females were obtained at St 391. They agree precisely with Alcock's account and with other specimens in the Museum collection. The pleurobranchs in advance of somite xiv are the merest rudiments, minute papillae without trace of pinnae.

It would appear doubtful whether the specimens obtained by the 'Siboga' really belong to this species, for de Man states that the pleurobranchs above the base of the first four peraeopods are "distinct filaments, similar to those of *A. virilis*"; whereas the difference in this respect between the present specimens and the examples which Alcock referred to *A. virilis* is most marked.

Hemipeneus crassipes (Wood-Mason).

Hemipeneus crassipes, Wood-Mason and Alcock, 1891, p. 281, fig. 7; Alcock, 1901, p. 33, and *Ill. Zool. Invest.*, Crust., pl. xlix, figs. 1, 2.

A single male, 77 mm. in length, was found at St. 388.

Among the males of this species preserved in the Indian Museum, two different types of modification are observed in the ultimate and penultimate segments of the external maxillipeds. The differences are shown in pl. i, figs. 8 and 9. In one form (fig. 9), that which is shown in the 'Investigator' illustrations, the penultimate segment is cylindrical and swollen and the ultimate segment is dilated at the base with the distal part curved outwards and provided with a spatulate tip. In the other type (fig. 8) the penultimate segment is flatter and less swollen and is produced distally as a strong acuminate process in front of the insertion of the ultimate joint. The latter is curved as in the type figured by Alcock; but it is not dilated at the base.

It is with the second of these two types that the specimen from St. 388 corresponds, and it is possible that the form deserves recognition as a distinct variety. The material at our disposal is not, however, in good condition and we are content to leave the matter pending the acquisition of further specimens.

Aristaeomorpha rostridentata (Bate).

Aristaeus (*Aristaeomorpha*) *rostridentata*, Alcock, 1901, p. 39, and *Ill. Zool. Invest.*, Crust., pl. ii, fig. 1.

Two males, obtained at St. 391, unquestionably belong to the same species as the female example recorded by Alcock and Wood-Mason under the name of *A. rostridentata*, and there can be

in the shape of small expansions at the base of the stem of the gill." While this is not the case with the Indian species—Alcock found that they fell readily into two groups—the passage quoted above, coming as it does from a high authority on crustacean morphology, seems to show that the two groups merge in the Eastern Pacific and we propose, therefore, to combine once more the genera *Polycheles* and *Pentacheles*.

Polycheles typhlops, Heller.

Polycheles typhlops, Heller, 1862, p. 389, pl. i, figs. 1—6, and Senna, 1903, p. 332, pl. xviii, figs. 1—11.

Pentacheles hextii, Alcock, 1894, p. 237; 1901, p. 172, and *Ill. Zool. Invest.*, Crust., pl. x, fig. 2.

One female, 70 mm. in length, was obtained at St. 391.

This specimen agrees in all its characters with examples described by Alcock under the name of *P. hextii*; but we are of the opinion that the form which has received this name is identical with the older *Polycheles typhlops* of Heller, a species hitherto known only from the Mediterranean and East Atlantic.

We have closely compared specimens of *P. hextii* with two examples of *P. typhlops* obtained by the 'Talisman' expedition off the Cape Verde Islands and with a large drawing of a specimen from the W. coast of Ireland. The only difference that we have been able to discover is that the epipod at the base of the outer maxillipeds is a trifle larger in the Atlantic specimens; but the spinulation and proportions of examples from the two localities and the peculiar character of the orbit correspond so precisely that the specific identity of the two forms cannot be doubted.

The species affords yet another illustration of the wide-spread distribution of many deep-sea Crustacea.

Polycheles phosphorus, Alcock.

Polycheles phosphorus, Alcock, 1901, p. 168, and *Ill. Zool. Invest.*, Crust., pl. viii, fig. 2.

A female, 74 mm. in length, was found at St. 388.

Anomura.

Tribe Galatheidea.

Family *GALATHEIDAE*.

Munida microps, Alcock.

Munida microps, Alcock, 1901, p. 240, and *Ill. Zool. Invest.*, Crust, pl. xiii, fig. 5.

A single male, 36 mm. in length when fully extended, was obtained at St. 388.

Munida andamanica, Alcock.

Munida andamanica, Alcock, 1901, p. 242, and *Ill. Zool. Invest.*, Crust., pl. xii, fig. 2.

Two females and one male were taken at St. 391. The length of the specimens, when fully extended, ranges from 38 to 52 mm.; the largest example is an ovigerous female. To the abdominal sterna of the two smaller individuals an interesting parasitic Isopod, belonging to the family Liriopsidae, is attached.

Family *UROPTYCHIDAE.*

Ptychogaster investigatoris, Alcock and Anderson.

Ptychogaster investigatoris, Alcock, 1901, p. 281, and *Ill. Zool. Invest.*, Crust., pl. xlv, fig. 1.

One female, slightly larger than the type and only other known specimen, was found at St. 391. The two individuals are in closest possible agreement.

Tribe **Paguridea.**

Family *PAGURIDAE.*

Sub-family PAGURINAE.

Paguristes puniceus, Henderson.

Paguristes puniceus, Alcock, 1905, p. 38, pl. iii, fig. 6, and *Ill. Zool. Invest.*, Crust., xxxii, fig. 1.

Fourteen specimens, three of which are ovigerous females, were obtained at St. 391. The majority inhabited shells of *Xenophora pallidula*; but one was found in *Ranella perca*, and one in a species of *Pleurotoma*.

Two females are parasitized by *Peltogaster*, a genus of Rhizocephala not hitherto recorded from Indian seas.

Sub-family EUPAGURINAE.

Parapagurus andersoni, Henderson, var. **brevimanus,** Alcock.

Parapagurus andersoni var. *brevimanus*, Alcock, 1905, p. 103.

Two males, inhabiting shells of *Solariella infundibulum*, were found at St. 388.