FURTHER NOTES ON CRUSTACEA DECAPODA IN THE INDIAN MUSEUM.

VI.—On a New Dromiid and a Rare Oxystomous Crab from the Sandheads, off the Mouth of the Hooghly River.

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(Plate VIII.)

Since the publication of my paper on the Dromiacea and Oxystomata of the Sandheads[1] four additional specimens referable to these two orders have been found mixed with some other crabs. Two of these specimens belong to species[2] that are already known to occur commonly in this area, and, therefore, deserve no special mention; the other two are remarkable, one as a representative of a new genus, and the other on account of the rarity of the species to which it has been assigned.

I take this opportunity to acknowledge once again the generous help that the members of the Bengal Pilot Service have been giving unstintingly to the Indian Museum from a very long time past, in the way of bringing valuable material from the mouth of the Hooghly River —an area that has long been known to be of an exceptional zoological interest.

Tribe DROMIACEA.

Family Dromiidae.

Genus **Conchoedromia,** nov.

The new genus may be briefly defined as under :—

Carapace elongate, longer than broad, hardly tomentose, well areolated, with regions distinct and grooves well impressed.

Front cut into three teeth; middle one on lower plane than the side ones. Antennal flagella shorter than carapace.

Palate somewhat demarcated from epistome. External maxillipeds operculiform, but having a somewhat pediform cast on account of the coarseness of flagellum and the comparatively slight expansion of merus; maxillipeds not completely closing buccal cavern.

Chellipeds subequal, stouter than legs.

Last two pairs of walking legs subdorsal in position; third pair shorter than preceding ones, but stouter, with huge talon-like dactyli. Fourth legs very greatly reduced, with their minute dactyli ending in long setae.

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[1] Chopra, *Rec. Ind. Mus.* XXXV, pp. 25-52 (1933).

[2] These two specimens have been identified as *Conchoecetes artificiosus* (Fabr.), and *Dorippe facchino* (Herbst). Both these species are fairly common at the Sandheads, *vide* Chopra, *op. cit.*, pp. 28 and 50, 51.

Abdomen consisting of seven free segments, without any distinct platelets between the last two segments; terminal segment in male rather long.

Genotype.—Conchoedromia alcocki, sp. nov.

Although I have included *Conchoedromia* in the family Dromiidae, the genus possesses a number of characters that are not usually met with in this family. The elongate carapace with well-marked grooves, the superficially pediform maxillipeds and the absence of small plates between the last two abdominal somites are some of the characters that are peculiar to the Homolodromidae, but that the present genus cannot be included in this family is indicated by the fact that, among other characters, the antennal flagella are short, the first two legs are very much shorter, the third are longer and the fourth are far more reduced than is usually the case in the Homolodromidae. Within the Dromiidae, *Conchoedromia* appear to combine the characters of *Cryptodromia* and *Conchoecetes*, in addition to having some characters peculiar to itself. The general shape is that of a *Cryptodromia*; the areolated carapace, practically without any tomentum but with the grooves deeply impressed, and the chelipeds and some of the, more or less nodular, legs show a superficial resemblance to *C. ebalioides*[1] Alcock and *C. gilesii* Alcock[1]. The third pair of legs, on the other hand, though shorter than the two preceding pairs, are as stout, and end in huge talon-like dactyli; these are very similar to those seen in members of the genus *Conchoecetes*. The fourth legs show a greater reduction than is usually met with in either of these two genera. Further, the shape of the external maxillipeds and the absence of plates between the last two abdominal somites are also characters that are not present either in *Cryptodromia* or in *Conchoecetes*.

Conchoedromia alcocki, sp. nov.

(Plate VIII, figs. 1-6.)

The carapace is hardly tomentose, and there are only a few hairs on the borders of some of the leg joints.

The carapace (Plate VIII, fig. 1) is elongate, roughly pentagonal in shape, with the front rather prominently projecting and the posterior border slightly curved. It is longer than broad, the greatest breadth being about five-sixths of the length. The surface is closely covered with minute granules, and is conspicuously areolated. The individual areolae are well separated from one another. The cervical and the " branchial " grooves are distinct.

The front is moderately prominent, is grooved along the median line, and is cut into three pointed teeth, of which the middle one is on a lower level than the others. In one specimen the middle tooth is larger than, and projects beyond, the lateral teeth, while in the second example it is distinctly smaller.

[1] Alcock, *Cat. Ind. Decapod Crust.*, Part 1, pp. 53-55, pl. iii, figs. 12, 13 (1901).

The upper orbital border is very oblique and is minutely serrulate. The inner supra-orbital tooth of the higher Brachyura is represented by a small dentiform process. The outer orbital angle is not pronounced.

The lateral borders of the carapace are serrulate and are very prominently cut in about the middle. The antero-lateral borders are practically straight and are without any teeth, but a row of minute teeth belonging to the outer border of the sub-hepatic region is visible beyond the antero-lateral border. At its posterior end the antero-lateral border bulges out in a somewhat acute prominence, and the incision of the lateral border of the carapace, referred to above, is formed by the postero-lateral border meeting this bulge well on the inside. The postero-lateral borders are regularly convex and are more strongly serrulate than the antero-lateral. The posterior border is slightly curved.

The lower wall of the common orbito-antennular fossa (Plate VIII, figs. 2 and 3) is, as usual, formed by the basal antennular joint, the basal antennal joint and the sub-orbital lobe. The sub-orbital lobe is rather small and has its free margin beset with minute teeth. The two freely movable basal joints of the antenna have the usual shape, and the second joint is produced at its antero-external angle. The flagellum is considerably shorter than the carapace. The eyes have short thick stalks and the corneae are dark pigmented.

The third pair of maxillipeds (Plate VIII, figs. 3 and 4) do not completely cover the buccal cavern, and on account of the moderate expansion of the ischium and merus, and the coarseness of the flagellum have a superficially pediform appearance. The inner borders of the ischium and merus are serrulate and hairy, while there are patches of minute tubercles on their exposed surface.

The chelipeds (Plate VIII, fig. 5) are more massive than the walking legs and are subequal. They are a little longer than the carapace. The outer and upper surface of all the joints is sparsely covered with minute tubercles. All the borders of the arm are cristiform and sharply denticulate, and the upper border is somewhat raised. The wrist is nodular, and its borders and those of the palm are minutely serrate and sharply cristiform. The teeth near the distal end of the inner border of the wrist are more prominent than the others, and there is a slanting row of minute, rounded tubercles on its upper surface. The palm is swollen and has some indistinct rows of tubercles on its upper and outer surface. The margins are sharply cristiform and minutely dentate, and there is a prominent nodule near the junction of the movable finger. The latter is strongly arched, and its upper border is dentate and somewhat hairy. The dactylus is distinctly longer than the upper border of the palm, and its pointed tip fits into a notch in the tip of the fixed finger. The latter is short and stumpy and both the fingers are armed with teeth along their inner margins.

The first two pairs of walking legs are long, the first being only a little longer than the chelipeds. The margins of the different segments are somewhat serrate. There is a small nodule on the carpus near its distal end, and a small rounded tubercle at the junction of the propodus

and dactylus. The dactylus is long, lanceolate and somewhat curved, and is serrate along the anterior and hairy along both the margins. The borders of the other segments are also sparsely hairy. The merus is not appreciably expanded along its upper border. The third legs are shorter than those of the two preceding pairs, but are markedly stouter. Their segments are short and stumpy, almost nodose, and the large talon-like dactylus works against a prominent cupped and toothed projection near the proximal end of the posterior border of the propodus. The dactylus is strongly curved and its inner border is somewhat serrate and hairy. The fourth legs (Plate VIII, fig. 6) are very greatly reduced, and like those of the third pair are subdorsal in position. Their minute dactyli end in five or six long setae. The borders of the other segments are minutely serrate and are beset with long hairs.

The abdomen in the male consists of seven distinct segments, the last of which is rather long and has its free terminal margin profusely hairy. There are no distinct platelets between the last two segments. The first segment is, as usual, produced laterally, and the first five segments show a distinct convexity along the middle line.

The spirit specimens are pale-whitish in colour and have no distinctive markings.

The larger of the two specimens, which is figured on plate VIII, figs. 1 and 2, has a carapace length of 6·2 mm., while the greatest breadth is 5·2 mm. The other example is 5·6 mm. long and 4·7 mm. broad. They are both males.

Type-specimen.—C 1689/1, Zoological Survey of India (*Ind. Mus.*).

Locality.—The two male specimens on which the foregoing description is based were collected by officers of the Bengal Pilot Service on board the Pilot vessel " Lady Fraser " at Sandheads, off the mouth of the Hooghly River in February, March 1928. The depth of water in this area is about 20 fathoms, and the bottom for the most part consists of soft ooze-like mud, with patches of sand and shells here and there. The specimens are without any protecting shells on their backs.

Tribe OXYSTOMATA.

Family Leucosiidae.

Genus **Actaeomorpha** Miers.

Actaeomorpha morum Alcock.

1896. *Actaeomorpha morum*, Alcock, *Journ. As. Soc. Bengal* LXV, pp. 172, 173, pl. viii, fig. 3 and *Illust. Zool.* " *Investigator* ", pl. xxvii, fig. 4.

A single female example of this apparently rare species has been collected at the Sandheads. It has a carapace length of a little over 10 mm., and is about 12·5 mm. broad. It is possibly immature.

The Sandheads specimen agrees in every particular with Alcock's description and figures of this species, as also with the two examples on which he based the description. The species is very easily recognised by its strongly convex carapace, studded with pearl-shaped vesiculous

granules, having a broad, sculptured marginal ring from which the different regions of the carapace are completely isolated. The regions are further isolated from one another by broad channels. The chelipeds, legs and other parts of the body agree exactly with Alcock's excellent description of the species.

Actaeomorpha morum was hitherto known only from two female specimens obtained by the R. I. M. S. S. " Investigator " off the Ganjam coast, in the Bay of Bengal at a depth of 28-30 fathoms. The present record from off the mouth of the Hooghly River does not materially extend the range of the species. The depth of water at this place is above 20 fathoms, and it is likely that the bottom at the exact spot from which the specimen was taken consists of sand, perhaps mixed with shells. All the other species of the genus are also known to live on beds of corals, shingle or sand and shells.

The species of the genus *Actaeomorpha* are for the most part restricted to the Indo-Pacific area, though one species extends to the Kermadec Island in the South Pacific. On the west the genus goes up to the east coast of Africa[1]. Ihle[2] has enumerated the species so far known and has given notes on their distribution. All the species are more or less rare.

The Sandheads specimen is registered in the books of the Zoological Survey as under :—

C 1691/1	Sandheads, mouth of the River Hooghly.	" Lady Fraser " Nov. 1923	1 ♀

The colour of the present specimen, in spite of its long immersion in spirit, is still light orange on the dorsal surface with the ventral surface whitish. There are two barnacles attached to the dorsal surface of the carapace.

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[1] Stebbing, *Ann. Durban Mus.* II, pp. 272, 273 (1920).
[2] Ihle, *Siboga Exped. Rep.* XXXIX b², pp. 308, 309 (1918).