MEGACEPON CHOPRAI, GEN. *ET* SP. NOV., A BOPYRID ISOPOD FROM THE GILL CHAMBER OF *SESARMA TETRAGONUM* (FABR.).

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While examining the branchial chamber of the semi-terrestrial crab, *Sesarma tetragonum*, collected from burrows on the banks of the Adyar River near Madras, a bopyrid was found attached to the gills. Other parasites were noticed even earlier in the gill chambers, but the present species attracted attention by its large size and feathery appendages. The specimen obtained was a female. Very careful examination of the gill chambers of thirty crabs captured from the same locality was subsequently made, but the bopyrid has not again been observed. Since the species does not agree with any of the known bopyrids, it is here described as new.

Family BOPYRIDAE.

Megacepon, gen. nov.

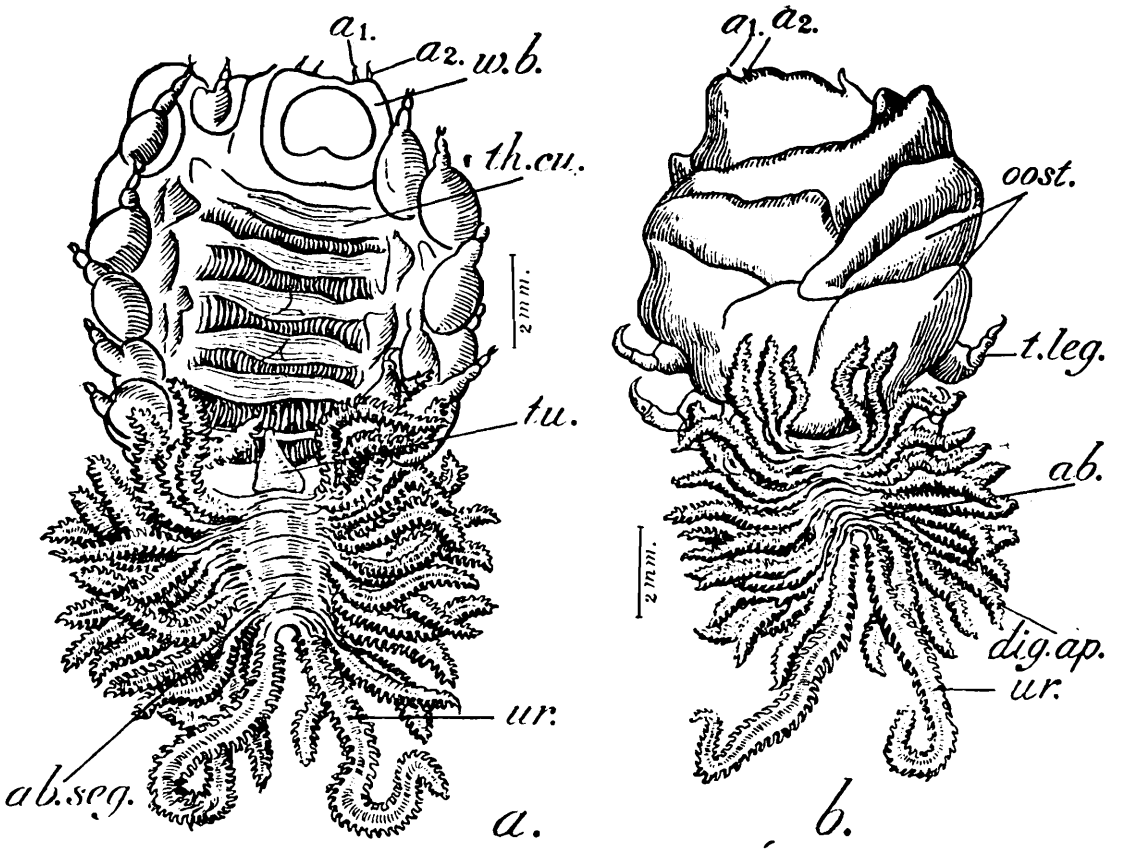
Female with one median dorsal tubercle on the last thoracic segment. All seven thoracic segments raised in the form of cushions. Exopodites present. Pleura of abdominal segments produced into long digitate prolongations. External as well as internal rami of pleopods equally modified. Uropods in the form of long feathery appendages.

Type-species.—Megacepon choprai, sp. nov.

Megacepan choprai, sp. nov.

Habitat and External Characters.—The animal was alive when removed from the branchial chamber of the crab and it showed pulsations in the region of the neck. The movement stopped after a few minutes of exposure to air. It has a globular appearance, the convexity being greater on the ventral side. The large size of the animal is mainly due to the numerous feathery appendages in the abdominal region and to the cushion-like elevations on the dorsal side (Text-fig. 1*a*). The ventral side is completely masked by the incubatory plates (Text-fig. 1 *b*), which are milky-white in colour. On the dorsal side are seen the rose-red lateral borders which stand out in sharp contrast to the milky white cushions and digitate appendages. The median dorsal tubercle is conical and can be seen prominently protruding from the last thoracic cushion. The head and the abdomen are in a lower plane when compared with the thorax, and the body tapers towards the posterior end.

I have pleasure in naming this species after Dr. B. N. Chopra, the author of the Monograph on Bopyrid Isopods from Indian Decapods (1923).



Text-fig. 1.—*Megacepon choprai*, gen. *et.* sp. nov. *a.* dorsal view; *b.* ventral view.

*a*1., first antenna; *a*2., second antenna; *ab.seg.*, abdominal segment; *dig. ap.*, digitate appendage; *oost.*, oostegite; *t. leg.*, thoracic appendage; *th. cu.*, thoracic cushion; *tu.*, tubercle; *ur.*, uropod; *w b.*, wavy border.

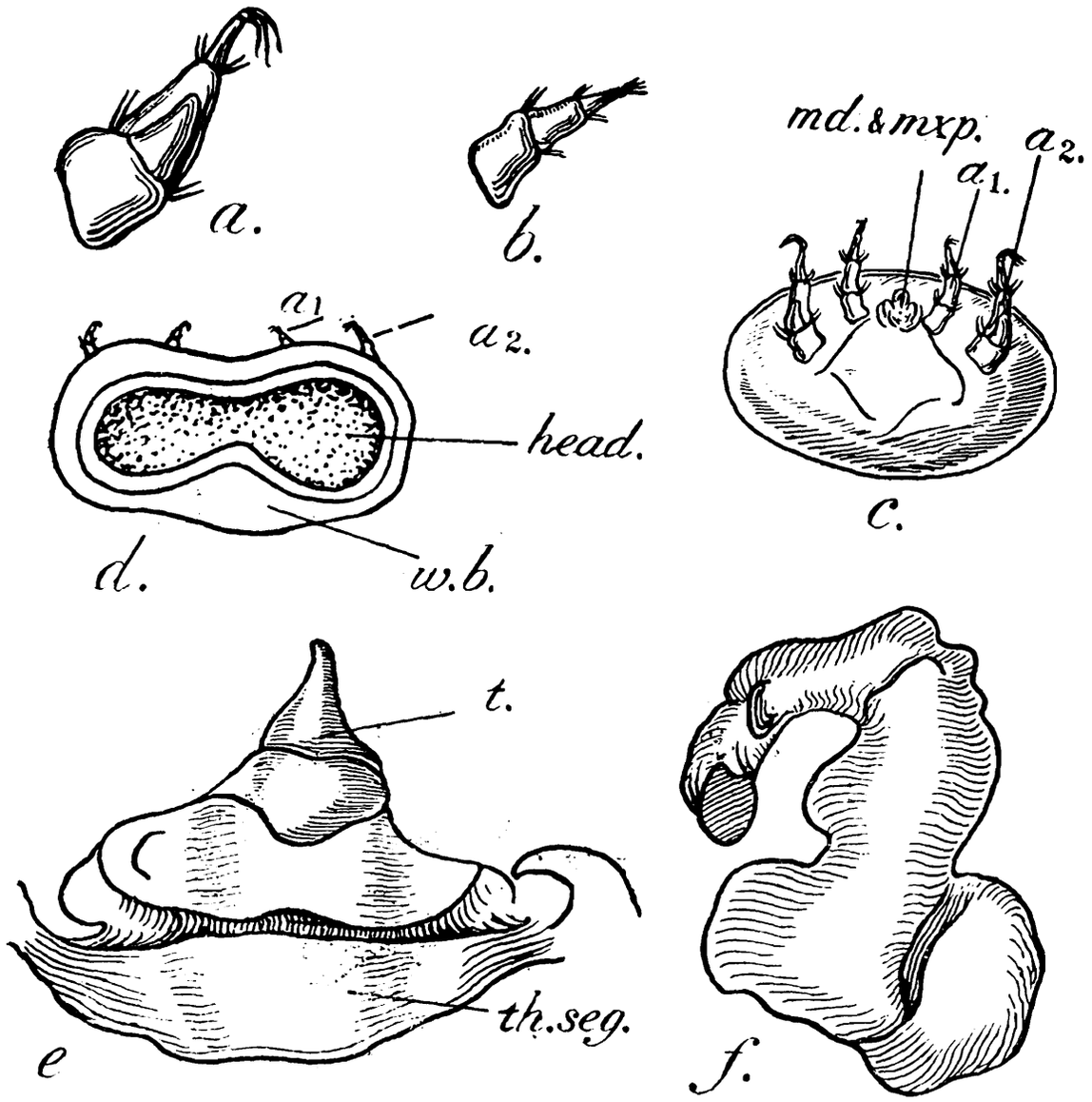
The following measurements were taken :—

Total length	16 mm.
Length of the animal from the frontal border to the first abdominal segment	9 mm.
Greatest width of the thorax	8·5 mm.
Length of the head	2 mm.
Length of the Uropod	4·5 mm.
Length of a typical digitate appendage	3 mm.

The Head.—The head (Text-fig. 2 *d*) is dumbell-shaped with a wavy border, which is prominent on its posterior side. The thorax being very much larger in size, its first segment completely envelops the head.

The antennules (Text-fig. 2 *b*) are very small and are three-jointed. The first segment of the antennule is massive, while the last ends in tuft of hairs. The antennae (Text-fig. 2 *a*) are more prominent and each is five-jointed. The first article is consolidated with the head and the second is the largest in size, with a deep groove in it; the rest of the segments are slender. All the segments of the antennae show tufts of hairs at the base of each segment. The mandibles together with the

maxillipedes (Text-fig. 2 *c*) give a spoon-like appearance when viewed from the ventral side.



TEXT-FIG. 2.—*Megacepon choprai*, gen. *et.* sp. nov. *a.* second antenna; *b.* first antenna; *c.* ventral view of the head; *d.* dorsal view of the head; *e.* tubercle with the last thoracic segment; *f.* typical (4th) thoracic appendage; *a*1., first antenna; *a*2., second antenna; *md.*, mandible; *mxp.*, maxillipede *th. seg.*, thorasic segment; *w.b.*, wavy border.

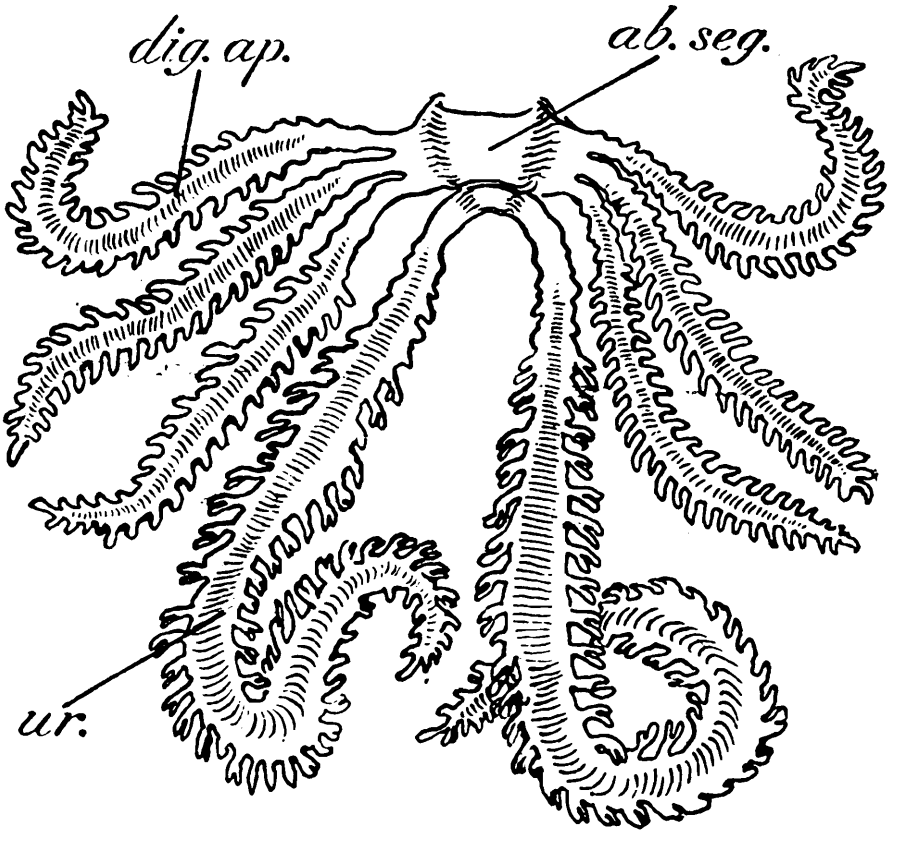
The Thorax.—The thorax forms the major part of the body of the animal and the entire globular form is brought about by the modification of the thoracic segments and the oostegites. There are seven thoracic segments, and all of them are in the form of cushions. These cushions are milky-white in colour, and are largest in size in the middle and taper towards the lateral regions, which are rose-red in colour in the living specimen. The third and fourth cushions show a groove in the middle, while the seventh bears a median dorsal tubercle, which is very prominent (Text-fig. 2 *e*).

The tubercle is cone-shaped and projects from the seventh cushion-like elevation.

On the ventral side, the thorax is covered by the oostegites, which are five in number on each side (Text-fig. 1 *b*). They are white in colour and are attached only by their posterior ends, and each oostegite is overlapped by the one behind it. The seven pairs of thoracic legs are well developed. They are massive, five-jointed and clawed at the

tips (Text-fig. 2 *f*). The incubatory lamellae mask the basal part of the legs. . The penultimate segment of each thoracic leg has a few strong hairs at its base. The exopodites, though present, are short and stumpy.

The Abdomen.—The abdomen is comparatively slender and segmentation is more marked on the ventral side. The segments are



TEXT-FIG. 3.—Uropod with the last abdominal segment and pleopods of *Megacepon choprai.*
ab. seg., abdominal segment; *dig. ap.*, digitate appendage; *ur.*, uropod.

more or less hidden from view by the overlapping of the digitate appendages. There are five pairs of pleopods. The pleura of the abdominal segments are modified into prolongations, and are digitate. The external as well as the internal rami of the pleopods are also modified into long digitate appendages. The abdomen is short and slightly bent towards one side. The uropods also consist of two long digitate processes, like those of the pleopods or the modified pleura of the abdominal segments (Text-fig. 3). The uropods are one and a half times longer than any one of the feathery appendages, which are more or less of the same length. There are sixteen digitate appendages on each side. Each abdominal segment has three processes, *viz.*, the exopodite, the endopodite and the pleural prolongation on each side. The digitate appendages have a pinnate appearance and the borders of the appendages are very transparent.

Type-specimen.—No. C 2480/1, Zoological Survey of India.

Effect of Parasitism.—The effect of parasitism on the host is also worth mentioning. The chelipeds were more or less disabled, and the walking legs were feebler in the parasitised crab than those in a healthy specimen. The gills on which the parasite was seen were of a greyish

Table showing generic characters of Megacepon and allied genera.

Generic Name.	Average Size.	Thorax.	Thoracic Appendages.	Abdomen.	Abdominal Appendages.	Uropod.	Host.
Megacepon	16 mm.	A median dorsal tubercle in the last thoracic segment; all segments raised as "cushions".	Thoracic legs well developed; short & stumpy exopodite.	Long & slender, segmentation well marked; pleura modified to form long digitate prolongations.	Exopodite & endopodite modified to form digitate appendages similar to pleural prolongations.	1½ times longer than abdominal appendages; feathery and pinnate.	*Sesarma tetragonum.*
Grapsicepon	1·9 mm.	Two dorsal tubercles in the last two thoracic segments; first four segments raised as "cushions".	Thoracic legs ill-developed; exopodites absent.	Long & slender; pleura modified to form long digitate appendages.	Expodite alone modified to form digitate appendage; endopodite in the form of tubercles.	Uropod of same length as digitate appendages.	
Trapezicepon	Less than 5 mm.	Dorsal tubercle absent.	....	Pleura unmodified.	Pleopods fleshy and in the form of digitate appendages but rudimentary.	Uropod digitate and fleshy.	Trapezid crab.
Portunicepon	6 mm.	Dorsal tubercle absent	....	Pleura ill developed	Exopodites and endopodites developed but former smaller in length.	Uropod digitate and nearly equal in length to abdominal appendages.	*Portunus arcuatus.*

tinge and under the microscope, the lamellae showed signs of degeneration.

The present species is allied to some of the bopyrid parasites described in the Monographs on Isopod parasites by J. Bonnier (1900) and Miss H. Richardson (1905). The genera which are closely related to *Megacepon* are : *Grapsicepon* Giard and Bonnier (1887), *Trapezicepon* Bonnier (1900), and *Portunicepon* Bonnier 1900. It may be mentioned that Stebbing (1906) has described a bopyrid from crabs of the Indian region under the name *Tylokepon bonnieri* ; this is sharply demarcated from the above genera in the possession of two median tubercles of which one is trifid, of pleopods with unequal rami, and of a head " formed as it were of two short stout cylinders " The principal characters of the closely allied genera, so far as females are concerned, are given on page 389 in a tabular form.

Acknowledgement.

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References.

1. Bonnier, J , 1900.—Contribution á l'études des Epicarides des Bopyridae. *Trav. Stat. Zool. Wimereux* VIII., pp. 1-475.
2. Chopra, B., 1923.—Bopyrid Isopods Parasitic on Indian Decapoda Macrura. *Rec. Ind. Mus.* XXV., pp. 411-550.
3. Richardson, H., 1905.—A monograph on the Isopods of North America. *Bull U. S. Nat. Mus.* LIV., pp. 1-727.
4. Stebbing, T. R. R., 1906.—Marine Crustaceans, Isopoda. *The Fauna and Geography of Maldive and Laccadive Archipelago,* II., pp. 699-720.

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