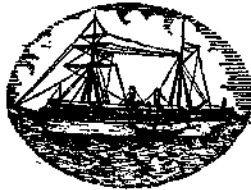


**PROCEEDINGS**  
**SYMPOSIUM ON CRUSTACEA**

**HELD AT**  
**ERNAKULAM**  
*FROM JANUARY 12 TO 15, 1965*

**PART I**



**SYMPOSIUM SERIES 2**

**MARINE BIOLOGICAL ASSOCIATION OF INDIA**  
**MARINE FISHERIES P.O., MANDAPAM CAMP**  
**INDIA**

ON THE OCCURRENCE OF *CALLIANASSA (CALLICHIRUS) AUDAX* DE MAN  
CRUSTACEA DECAPODA—CALLIANASSIDAE) ON THE SOUTHWEST  
COAST OF INDIA WITH A DESCRIPTION OF THE MALE\*

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ABSTRACT

The paper records the occurrence of *Callianassa (Callichirus) audax* de Man in Indian waters for the first time. Five specimens, four females and one male, were collected from Cannanore on the Malabar coast, at a depth of 2-3 meters. Since the male of the species has not so far been recorded or described, a full description of it is given in the paper.

THE genus *Callianassa* enjoys a worldwide distribution, but many of the species are imperfectly known as the fossorial mode of life makes their capture difficult. Kemp (1915) described in detail *Callianassa (Callichirus) maxima* M. Edw., based on a specimen obtained from Madras and a large chela and two immature specimens from the Chilka lake. De Man (1928) recorded 14 species from the east coast of Africa and the Indian Ocean. Different stages of the larvae of callianassids obtained from the inshore plankton of the Madras coast have been described by Menon (1933 and 1940). Several new species belonging to the sub-genera *Calliactites*, *Cheramus* and *Callichirus* have been described by Edmondson (1944) from the Central Pacific. Recently Pillai (1954) reported the occurrence of *Callianassa (Callichirus) maxima* from the Kayamkulom lake (Central Travancore).

*Callianassa (Callichirus) audax* was created by de Man (1911) from two female specimens collected in 1892 in the Straits of Malacca. A full description of the species was subsequently published by de Man (1928). Apart from this record, this species has not been known from any part of the world.

The present collection consists of 5 specimens, four females and one male, obtained on 22-4-1963 from Cannanore on the Malabar coast. They were caught in the shore seines operated to catch fish at a depth of 2-3 meters. Since the male of this species has not so far been recorded or described a full description of the latter is given here.

*Callianassa (Callichirus) audax* de Man

*Description of Male*

Carapace with deep sutures; rostrum very short and depressed, frontal margin slightly concave and projecting between the eye stalk and the antennal peduncle; the whole frontal margin fringed with short hairs.

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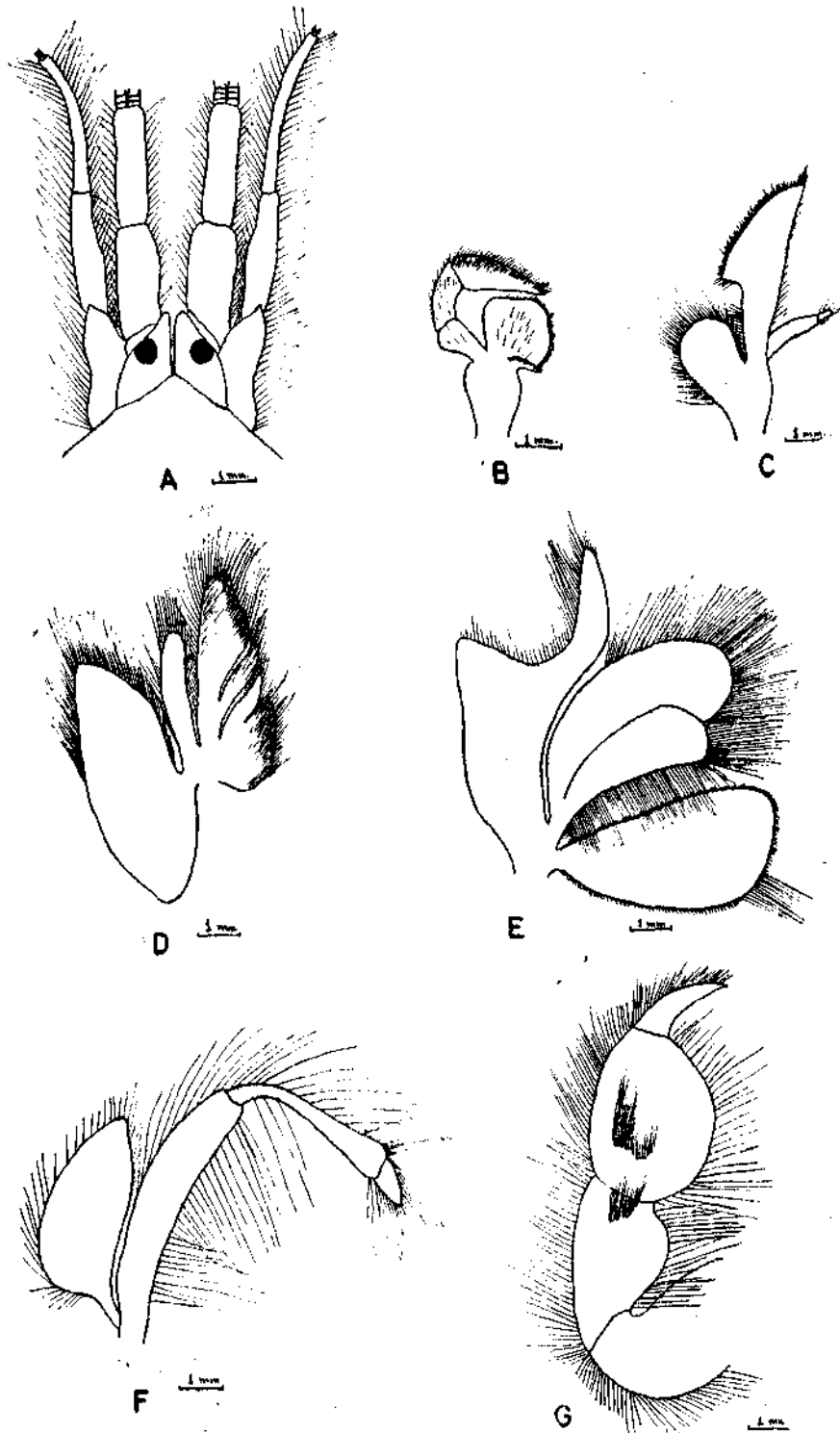


FIG. 1. Parts of *Callinassa (Callichirus) audax* de Man: A. Front border of carapace, eye stalks and peduncles of antennule and antenna, B. Mandible, C. Maxillule, D. Second Maxilla, E. First maxilliped, F. 2nd maxilliped, G. 3rd maxilliped.

Eye lobes (Fig. 1 A) nearly twice as long as broad, reaching the tip of the basal segment of the antennular peduncle, inner border straight, outer slanting, the eye lobe narrowing distalwards and terminating in a sub-acute apex. Cornea circular, placed in the middle more towards the outer border.

Of the three antennular segments the third is the longest and the second equal to or slightly shorter than the first, flagella equal.

First segment of antenna small; 2nd and 3rd almost equal, latter is much narrower than the preceding segments and the whole peduncle is longer than the peduncle of the antennule by  $\frac{1}{2}$  the length of its terminal segment.

Mandible (Fig. 1 B) quadrangular in outline, convex on the outer surface, cutting edge bearing a series of teeth; mandibular palp curved and three-jointed, third segment longest. There is a small transverse ridge placed at the proximal end of the cutting edge of the mandible.

Maxillule (Fig. 1 C) made up of three laciniae of unequal size; the outer lacina two-jointed and narrow; endopodite almost rounded and unjointed.

Maxilla (Fig. 1 D) foliaceous; endopodite unjointed and small; the gnathobasic lobes, endopodite and exopodite which is ear-shaped, fringed with setae along their entire margins.

First maxilliped (Fig. 1 E) flattened; exopodite unsegmented with a median ridge almost running its entire length; endopodite also unsegmented and expanded into a thin plate externally; epipodite thin and lamellar in the middle.

Endopodite of second maxilliped (Fig. 1 F) three-segmented terminal segment short, with a thick row of setae on the margin; exopodite broad and foliaceous.

Ischium of third maxilliped almost as broad as long; merus proximally broad and narrow distally; inner border of these segments carinate and armed with long hairs. Carpus as long as merus, narrowing towards both ends; propodus broader than carpus; dactylus slightly shorter than propodus (Fig. 1 G).

First pereiopods chelate and very dissimilar; left cheliped larger. The proximal end of ischium narrow and the distal end expanded, inner border finely serrated, except at the distal part. Merus a little shorter than ischium with lower margin expanded up to a little beyond the middle and armed with 13-14 small teeth and fringed with a few long hairs. A few granules present close to the lower margin. The narrow distal portion also serrated along its whole length. The upper border convex and feebly serrated. In the inner surface of the merus near the distal end there are 4 small tufts of setae placed one behind the other. Carpus as long as merus and as broad as long; both the inner as well as the outer sides slightly convex and smooth, the lower border carinated and fringed with long hairs, while the upper border has only a few short hairs. Palm (Fig. 2 A) as long as carpus and longer than broad, proximally as broad as carpus and slightly decreasing in width distally; the lower border serrated along its whole length to the tip of the fixed finger and fringed with hairs. The fingers overlap; the inner edge of dactylus granulated on the proximal portion and with a strong tooth in the middle. A number of granules present on the inner side of the palm near the articulation of the dactylus and at the base of the fingers.

Ischium of the smaller cheliped long and narrow with a slightly expanded distal portion. Merus shorter and  $1\frac{1}{2}$  times as long as wide; carpus almost as long as ischium and twice as long as its breadth. Fingers subequal and non-granulated except on the proximal inner edge and the fixed finger.

Ischium of the 2nd pereiopod small with a narrow base and expanded distal part. Merus which is the longest segment is as broad as the distal end of the ischium upto a little beyond the middle and then narrows; carpus proximally narrow and distally expanded; fingers equal and longer than palm.

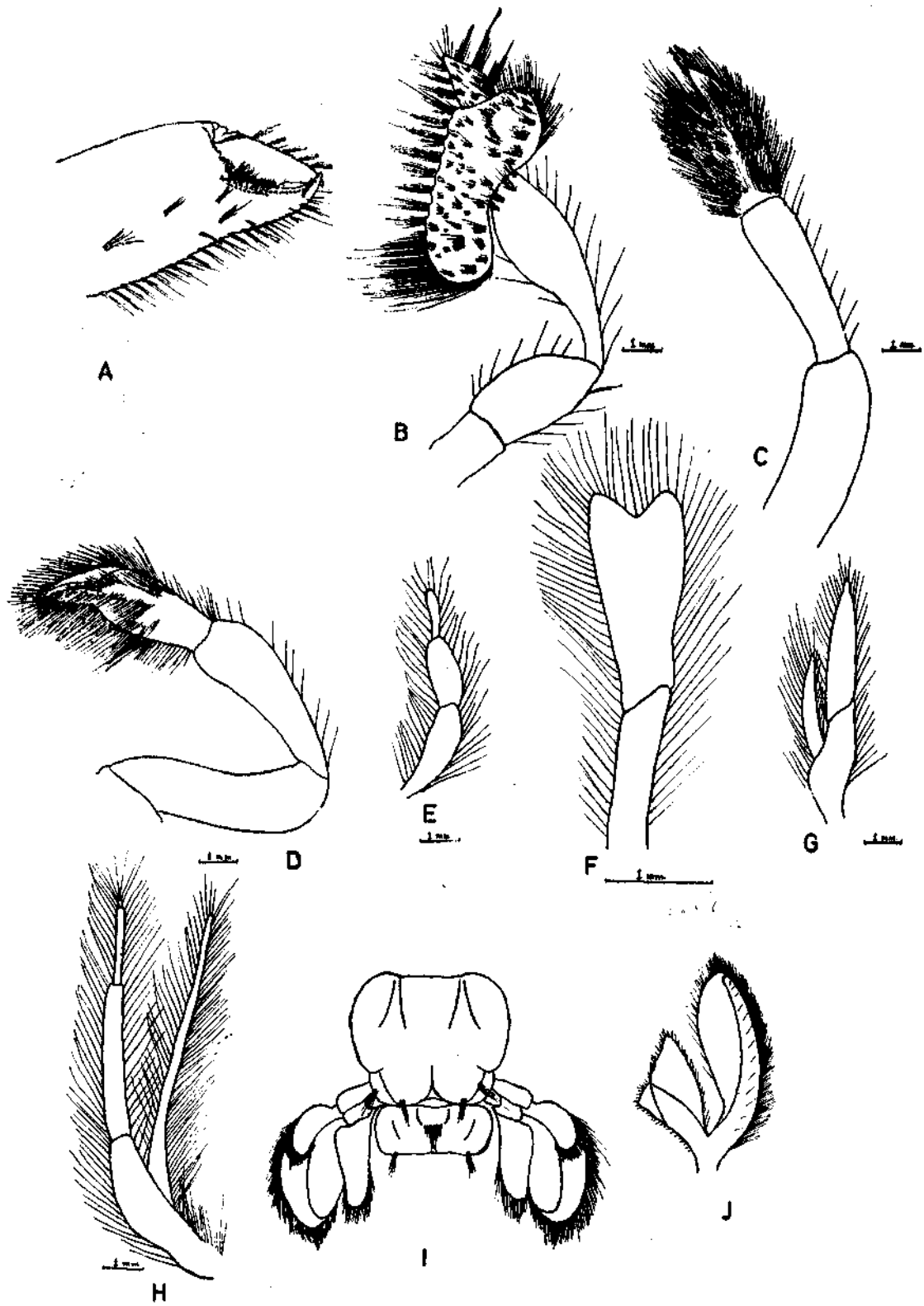


FIG. 2. *Callinassa (Callichirus) audax*: A. tip of large cheliped, B. 3rd leg, C. 4th leg, D. 5th leg, E. First pleopod, female, F. First pleopod, male, G. 2nd pleopod, male, H. 2nd pleopod, female, I. Telson and uropod, J. Third pleopod,

Third pereiopod (Fig. 2 B) is hammer-shaped; carpus slightly shorter than merus, proximally narrow gradually expanding  $\frac{1}{2}$  its length and then narrowing. Sixth joint lobed, the anterior lobe small and the posterior lobe with a straight outer border. The dactylus broadly subtriangular, 6th segment and the dactylus covered with tufts of hairs.

Propodus of 4th pereiopod shorter, but broader than carpus, its lower apex produced as a short process, tip carries several short spines; dactylus somewhat ovate; both the 6th segment and the dactylus densely setose (Fig. 2 C).

Ischium of 5th pereiopod small less than  $\frac{1}{2}$  length of merus; carpus shorter than merus, former slightly expanded at the distal end. Propodus produced into a process at its distal end and densely setose. Dactylus placed very close to the base of this process and slightly longer with hairy tips (Fig. 2 D).

First abdominal segment triangular; second slightly narrower at the anterior part; third, fourth and fifth segments broader than long; sixth segment longer than the fifth and convex transversely. Behind the middle line a small furrow runs transversely inward from the lateral border. Three small furrows running forwards parallel to each other proceed from the posterior border of this region.

Telson (Fig. 2 I) broader than long and much shorter than the 6th segment; posterior margin slightly undulate; setae present near the lateral corner. Uropods extending well beyond the telson; outer ramus oval with the outer margin densely fringed with setae. In the middle there is a ridge running from the anterior end to the rounded posterior border. On the dorsal side, at the anterior region of the ramus is a superimposed raised portion, the outer margin of which is setose. Inner ramus somewhat triangular, longer than broad with setose inner and distal borders.

First pleopod (Fig. 2 F) slender; two-segmented and covered with long setae, apex broad with a shallow depression.

Second pleopod (Fig. 2 G) biramous, and covered with short setae. Outer ramus very slender and shorter than the inner, latter is two-segmented with a small constriction near the tip.

Pleopods 3-5 large and foliaceous (Fig. 2 J), somewhat oval, outer margin more densely setose than the inner. In the outer ramus the arcuate ridge runs in the middle; the inner ramus is shorter and roughly triangular. In the proximal portion it is thickened and the outer margin slightly emarginate.

Length from tip of rostrum to extremity of telson	..	57 mm.
Length of carapace	...	17 "
Length of abdomen including telson	..	40 "
Length of 1st abdominal segment	..	8 "
Length of 2nd abdominal segment	..	8 "
Length of 3rd abdominal segment	..	6 "
Length of 4th abdominal segment	..	5 "
Length of 5th abdominal segment	..	6 "
Length of 6th abdominal segment	..	8 "

The female closely resembles the male except in the following characters: The first pleopod in female (Fig. 2 E) is stout and three-jointed, the third joint finger-shaped, a little shorter and less than half as wide as the second segment, the whole pleopod is covered with long setae. In the male it is slender and the apex of the terminal segment is broad with a shallow depression very much

resembling that of *Callianassa (Cheramus) variabilis* Edmondson (1944). The second pleopod in the female (Fig. 2 H) is biramous with the outer ramus equal in length to the inner, but slender; the inner ramus is two-segmented with a minute knob, apparently a separate segment, at the tip of the second segment. In the male this pleopod is comparatively smaller in size, the outer ramus is very slender and shorter than the inner which is two-segmented.

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