

The
Madras Journal of Literature
and Science

FOR THE SESSION

1886-87.

EDITED BY

CAPTAIN R. H. C. TUFNELL, M.S.C.
(EDITORIAL SECRETARY).



PUBLISHED BY THE
MADRAS LITERARY SOCIETY AND AUXILIARY OF THE
ROYAL ASIATIC SOCIETY, OLD COLLEGE, NUNGUMBAUKUM.

—
1887.

[*All rights reserved.*]

Notes on the Madras species of *Matuta*.

(By J. R. HENDERSON, M.B., F.L.S.)

AMONG the many marine wonders drawn on shore in the nets of the Madras fishermen, few objects are more likely to attract the attention of the passer-by than the Crustaceans which form the subject of these notes. They are rendered conspicuous by very beautiful markings, a circular carapace with two lateral spines, and flattened swimming feet. The genus *Matuta* is eminently characteristic of the great Indo-Pacific region, to which indeed it is confined, the species occurring abundantly in shallow water throughout this area from the Red Sea to the coasts of Australia. At the same time there are few groups of Decapod Crustacea in which the determination of the species is a matter of greater difficulty, or in which authorities have differed more as to the specific or varietal value of forms. A glance at the history of the genus will bear out this statement.

In the second volume of his classical "Histoire Naturelle des Crustacés" (1837), Prof. H. Milne-Edwards admits but two species—*M. victor*, Fabr., and *M. lunaris*, Herbst.—those described by Leach and other writers he regards as merely varieties of one or other of the above. De Haan, in his great work on the Crustacea of Japan (1841), reduces the number to a single species—*M. victor*—and enumerates six varieties, without however assigning names to these; practically the same view is held by Prof. A. Milne-Edwards,¹ who refers all the previously described forms to *M. victor*. In 1876, Mr. E. J. Miers, with the rich collections of the

¹ *Nouvelles Archives du Muséum*, X., p. 54 (1874).

British Museum before him, published a "Revision of the genus *Matuta*" in the Transactions of the Linnean Society, which constitutes by far the most important contribution that has yet appeared towards our knowledge of this difficult group. In this valuable paper no less than nine species are described and figured, four previously known forms are restored to specific rank, including *M. victrix* (as it is now spelt) and *M. lunaris*, and, in addition, five new species are characterized for the first time. The chief value of Mr. Miers' work lies in the fact that reliable characters are pointed out, whereby a separation between closely allied species can be effected.

The genus *Matuta* is exceptional amongst the higher Crustacea in the fact that colour-markings afford trustworthy specific characters, the spots or lines on the carapace having a tolerably definite form and arrangement in each species. Further points of distinction are to be looked for in the relative proportion of the elevations on the surface of the carapace, and on its antero- and postero-lateral borders, the form of the front, but above all in the armature of the propodal joint of the chelipedes. In addition to the ordinary sexual differences, the males in several of the species possess a well-marked ribbed or beaded elevation on the outer surface of the dactylus of the chelipedes, which is either wanting or but slightly marked in the females. In all the species of *Matuta*, two striated areas, regarded by many authorities as stridulating organs, exist on the inner surface of the hand. These do not appear however to afford good distinguishing characters, contrary to what might be expected from a knowledge of their value in separating the species of *Ocypoda*.

As a result of my own necessarily limited investigations, I am enabled to record three well-marked species from Madras, viz., *M. victrix*, Fabr., *M. lunaris*, Herbst., and a third which is apparently new to science; doubtless increased

opportunities and more abundant material will bring other forms to light. In the short notes which follow, no attempt has been made to enter into the synonymy of the first two species, to ensure accuracy in this respect an appeal to the actual specimens described by most of the earlier writers would be necessary; nor do the notes attempt to compass all the distinguishing points of *M. victrix* and *M. lunaris*; they rather form a mere addendum to what has already been written on the subject. The examination of a large number of specimens in different stages of growth, has convinced me that the two, although closely allied in many respects, are to be regarded as distinct species; indeed, I have entirely failed to meet with individuals which could in any way be regarded as transitional.

1. *Matuta victrix*, (Fabr.) Miers.

Of a large series of individuals examined, the size (length of carapace) varied from 13.5 millim. to 40 millim. The markings are arranged in the form of minute crowded dots—occasionally when confluent forming small rings or semi-circles—more abundant on the anterior half of the carapace. With the exception that the markings are much less abundant, the youngest specimens examined agree in most respects with adults. The oval stridulating area contains 4—6 lines or ridges, the linear 8—9. In adult males, the second elevation on the outer surface of the hand is always very prominent and acute; a well-marked and somewhat curved ridge also extends from this spine to the tip of the immobile finger. In females and young males, the large spine is less strongly developed, but followed by three elevations, the second of which likewise takes the form of an acute spine, about half the size of the first, and the oblique ridge is otherwise scarcely represented.

In a specimen found by Dr. Thurston at Paumben, and which possesses all the more important characters of

M. victrix, the markings on the gastric region have arranged themselves in the form of three distinct circles. This variety (which may be designated var. *annulifera*) apparently stands in the same relation to *M. victrix*, that *M. circulifera*, Miers,² does to *M. lunaris*.

2. *Matuta lunaris* (Herbst.).

The smallest specimen examined has a length of carapace of 15 millim, the largest 36 millim. In all, the markings—which tend to form rings or short irregular lines—are more crowded on the anterior half of the carapace; posteriorly they show a marked tendency towards the formation of a series of longitudinal lines. In young individuals the colour markings are evident, though much less abundant, and the appearance of ring-like spots is well seen. The stridulating areas closely resemble those of *M. victrix*, with the exception that the oval one is usually composed of 4—5 ridges, and the linear of 8—10. In this species, as in the last, a beaded line is well seen on the outer surface of the movable finger of the male, but absent from the female. In the adult male, the outer surface of the hand is armed with two conical spines, the first short and triangular, the second more prominent; from the latter a raised line is continued along the outer surface of the immobile finger. In the females and young males, the second spine is followed by two or three pyramidal tubercles which take the place of the aforementioned ridge.

3. *Matuta Miersii*,³ n. sp.

Description.—Carapace finely granulated around the dorsal tubercles, and towards the lateral spines, elsewhere

² Founded on a single specimen from the Malaysian Seas described and figured in Ann. Mag. Nat. Hist., Ser. 5, vol. 5, pl. XIV, fig. 5, p. 27 (separate copy), 1880. According to Dr. J. G. DeMan it is to be regarded as a variety of *M. lunaris*.

³ I have pleasure in associating this species with the name of my friend Mr. E. J. Miers, from whose revision of the genus I have received great assistance in the drawing up of these notes.

smooth and glabrous. Dorsal tubercles distinctly marked, each capped by a series of granulations. Lateral marginal spines acute, of moderate length and directed slightly forward. Antero-lateral border with about five small projections, followed by three large and prominent (especially the first and third) tubercles, in front of the lateral spines. Postero-lateral border with a raised finely beaded line, but without any trace of a postero-lateral tubercle. Front distinctly emarginate, the lobes rounded. Hand granulated externally, the upper border with three subequal, broadly conical, spines, below these, and on the outer surface, two rows of irregularly rounded tubercles. The external ridge in the male, with five granulated and pyramidal elevations, of which the second is large and conical, and the fourth is slightly larger than the third. Lower surface of the hand distinctly granulated, with two rows of tubercular processes (including that on the free border), separated by a shallow groove which is continued on to the outer surface of the immobile finger. The hand of the female similar to that of the male. Outer surface of the mobile finger, smooth and rounded in both sexes.

The markings on the carapace consist of minute reddish-brown spots—which with the aid of a lens may be seen in many cases to form incomplete rings—arranged so as to surround clear, somewhat circular, patches. In all the specimens examined, there is a light-coloured oval patch on the gastric region, between the two anterior dorsal tubercles.

Length of carapace of a male, 25 millim.

Breadth of carapace of the same (in front of the lateral spines), 25·3 millim.

Remarks.—This species belongs to the second section of the genus, in which the hand of the male is armed with a ridge of tubercles or spines, on the outer surface and parallel to the lower border, and in which the mobile finger is smooth or but faintly striated externally. Its two nearest allies are

apparently *M. maculata*, Miers, and *M. granulosa*, Miers. In the former, the dorsal tubercles are almost obsolete, the lateral spine is very long, and the front is either slightly rounded, or shows but slight emargination; in the latter, the carapace is coarsely granulated, the two anterior dorsal tubercles are wanting, and a thin ridge is present on the mobile finger of the male. The markings on the carapace bear some resemblance to those of *M. Picta*, Hess, (as figured by Miers), but many sufficiently obvious characters separate it from this species.

Habitat.—Madras, in shallow water. Less common than *M. victrix*, or *M. lunaris*.

EXPLANATION OF THE PLATE.

- Fig. 1. *Matuta Miersii*, n. sp. (nat. size).
Fig. 2. Outer view of hand of the same.
Fig. 3. Abdomen of the same (male).
Fig. 4. Abdomen of the same (female).
Fig. 5. Young specimen of *Matuta victrix* (nat. size).
Fig. 6. Young specimen of *Matuta lunaris* (nat. size).
-

Fig. 5.

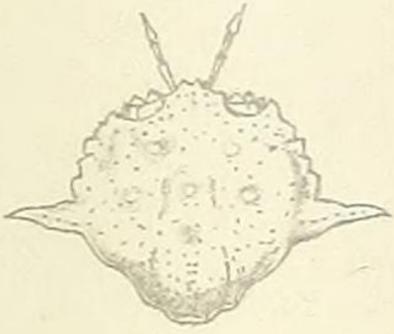


Fig 6.

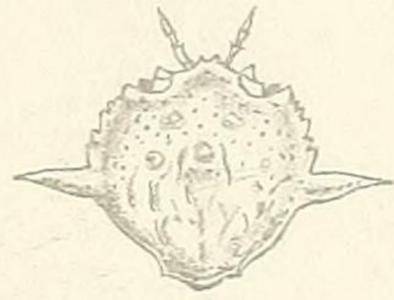


Fig. 1.

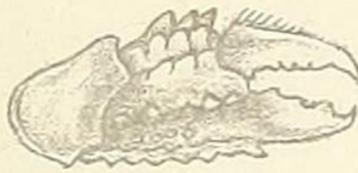
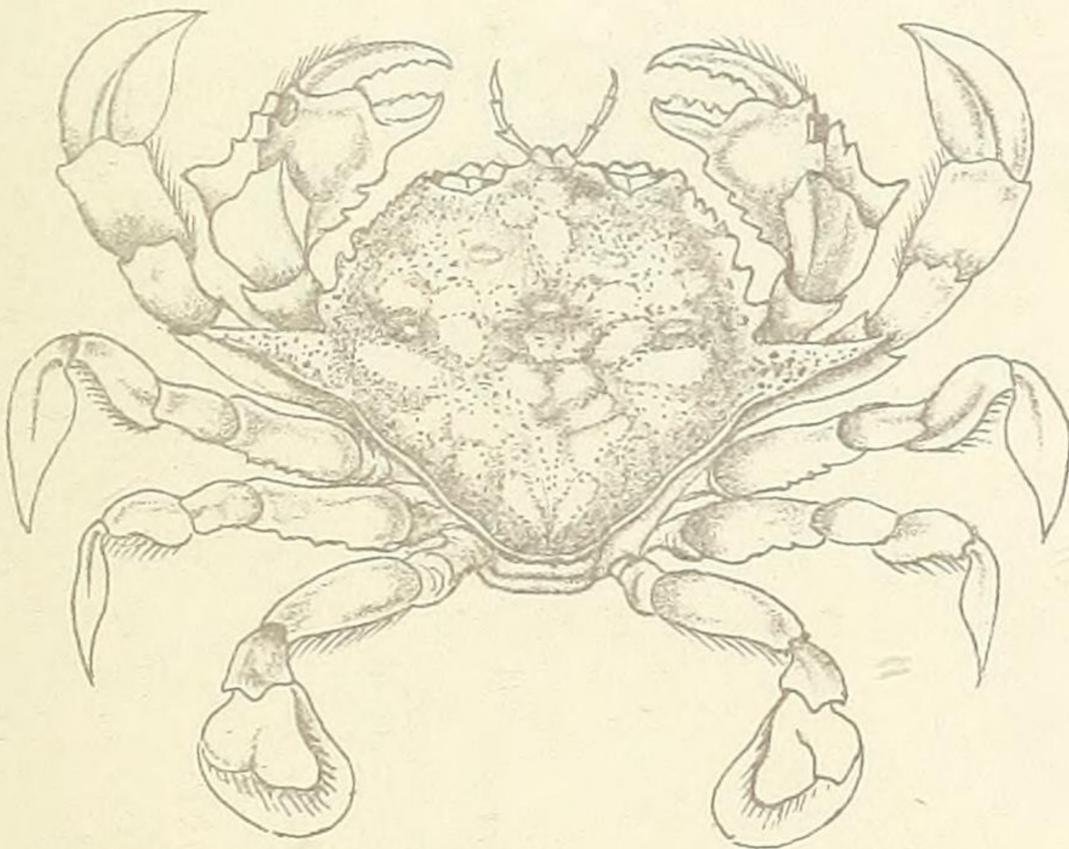


Fig: 2.

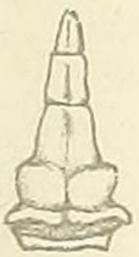


Fig: 3.



Fig: 4