

NOTE ON  
THE ANATOMY OF *THERSITES (HADRA) BIPARTITA* (FÉR.).

By S. PACE, F.Z.S., etc.

*Read 8th March, 1901.*

SINCE the radula appears to be the only portion of the internal anatomy of this well-known form which has as yet been described,<sup>1</sup> the following meagre account of the details of its genitalia may not be without interest. The material at my disposal was not very satisfactory. Although I have collected in the district around Cape York, Northern Queensland, where this species is very common, I was not enabled to dissect fresh examples, and the 'colonial' spirit in which some were pickled for subsequent examination failed to preserve the tissues sufficiently. It has in consequence only been possible to make out with certainty (in two specimens) the few features indicated in the accompanying figures: nothing, however, was noticed with regard to the other organs which appeared in any way to call for especial comment.

Two absolutely distinct varieties of *T. bipartita* occur in the Cape York district, and, as far as my observations extend, these varieties never overlap in their distribution. Thus, while in the scrub around Mr. Jardine's house at Somerset a large unicolourous pale variety is the only one met with, at Vallack Point, only a mile or so further south, all specimens are typically bipartite in colouration, though of an equally large size. Whether there are any differences in the internal anatomy of these two varieties could not be determined: the figures are drawn from a specimen of the unicolourous form. This variety is presumably that referred to by Pilsbry<sup>2</sup> as var. *unicolor*, Cox. The shell is perfectly white, but is covered by a yellowish periostracum, which is usually rather darker over the base of the shell. The shape is variable in this, as in the bipartite form. The extreme examples in my series have the following dimensions: maximum height 5.9 cm., maximum breadth 6.3 cm., and height 4.5 cm., breadth 5.8 cm. respectively.

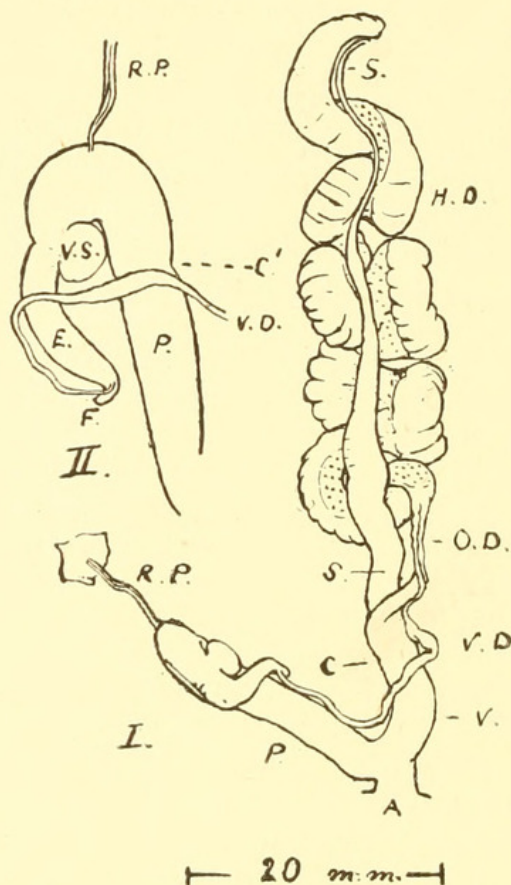
The accompanying figure (Fig. I) shows the genitalia in very nearly their natural relationships as viewed from behind, the parts being slightly opened out but otherwise not displaced. Two or three convolutions of the hermaphrodite duct (*h.d.*), as well as the terminal portion of the spermatheca (*s.*), are missing from the dissection.

<sup>1</sup> Semper: Reisen im Archipel. Philipp., vol. iii, pl. xviii, fig. 16.

<sup>2</sup> Tryon's Man. Conch., ser. II, vol. ix, p. 132.



The initial tract of the free oviduct (*o.d.*) is of very small calibre, being only a trifle larger than the vas-deferens (*v.d.*). It does not open directly into the vagina (*v.*), but into what must be regarded as the base of the spermatheca duct, which latter is separated from the vagina by a well-marked constrictor muscle situated immediately below the oviducal aperture. The interior of the vagina is longitudinally plicated, the plicæ being very strongly developed, and the interior of the spermatheca is also longitudinally plicate, but much more finely so than the vagina.



GENITALIA OF *THERSITES BIPARTITA* (Fér.).

FIG. I.—Arrangement of the complete organs.

FIG. II.—More enlarged view of the male organs.

- a.* atrium.
- e. & c'.* position of constrictor muscle.
- e.* epiphallus.
- f.* flagellum.
- h.d.* hermaphrodite duct.
- o.d.* free oviduct.
- p.* penis.
- r.p.* retractor penis muscle.
- s.* spermatheca.
- v.* vagina.
- v.d.* vas-deferens.
- v.s.* vesicula seminalis.

The muscular penis (*p.*) is sharply bent upon itself at the point of insertion of its retractor muscle (*r.p.*). At the junction of the penis and epiphallus (*e.*) there is a thin-walled hemispherical saccular out-

growth, which probably functions as a vesicula seminalis (*v.s.*), and the epiphallus itself terminates in a minute cæcum apparently representing the flagellum (*f.*). The vas-deferens is closely applied to the free oviduct throughout the entire course of the latter; it then passes up alongside the penis and enters at the base of the minute flagellum. The vas-deferens is of unequal calibre, and its initial portion exhibits slight sacculation. The inner wall of the eversible portion of the penis for about a third of its length from the atrium is longitudinally plicated, the plicæ then become very much folded transversely, so that the wall assumes an almost villous aspect over the second third. A circular valve marks the commencement of the remaining third, which is further differentiated by the presence of a strongly developed muscular 'pilaster' passing down from the retractor penis muscle (with which, however, it is not continuous) to the valvular fold. The epiphallar region internally is finely plicated longitudinally.

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