

X. ON THE GENERIC POSITION OF *HELIX* *DISTINCTA*, PFR., OF SIAM

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I have to thank Dr. N. Annandale for sending me a small but interesting collection of land mollusca from Siam, a donation to the Indian Museum, Calcutta, got together by Mr. C. Boden Kloss (5-v.17). One interesting species, which I now describe, he obtained at Lat Bua Kao, 30 miles west of Korat—a locality described by Mr. Kloss in "*The Ibis*" 1918, p. 78, as "just within the eastern foot of the hills which separate the slightly elevated, shallow basin of eastern Siam from the central Siam plain and the Menam river-system." There are six or more fine specimens preserved in spirit, the largest measuring 68 mm. in major diameter. It affords me the opportunity of comparing the animal with other large species from that part of the world, such as *Hemiplecta humphreysiana* and *floweri*, with which I have dealt. The latter is fully described and figured in *Proceedings Malacological Society*, Vol. IV, March, 1900. Comparison with this Siam shell should therefore be of much interest. In this paper I also described *Hemiplecta neptuna*, Pfr., received from my old friend and fellow-worker the late Dr. W. T. Blanford, also from Siam and sent to him by Mr. Daly. I alluded also to *Helix distincta*, Pfr., and pointed out there was much to be cleared up.

Helix distincta, described by Pfeiffer in 1850, is recorded in 1853 by him in *Mon. Helic. Vivent.* Vol. III, p. 81, as from the Moluccas. We next have it recorded from Siam by Von Martens in his *Preus. Exped. n. Ost-Asien*, 1867, p. 69, and placed in *Nanina* of Gray. The external characters of the animal are only referred to, and there is not a doubt he had before him this fine large Siam species which is the subject of this paper. The drawing of the animal (plate 6, fig. 8) shows clearly it has right and left dorsal lobes but *no shell lobes*, and the same is seen in the drawing of *N. siamensis*, Pfr., fig. 6.

Later in 1900, quoting from my paper on the anatomy of *Hemiplecta floweri*, E. A. Smith, I wrote "Professor Semper in his *Reisen im Archipel der Philippinen* Bd. III, p. 62, pl. vi, fig. 27, under *Xesta distincta*, mentions having obtained two shells from Zamboanga, in Mindanao. He, however, described the animal, and figured the jaw and radula of a young specimen from Saigon, Cochin China, which is over 500 miles from Siam. The jaw has no central projection; the central tooth and admedians are tricuspid, the laterals bicuspid, with 160 to 180 teeth on each

side of the radula. This description does not answer for the jaw, the form of the teeth, or the dental formula of the Siam species, which I identify as *Hemiplecta neptuna*." Semper alludes to the presence of shell lobes, an important point, the left as being moderately developed, the right well seen: this would place it in *Hemiplecta*. He put it in *Xesta* of which *citrina* is the type, a very different shell and with the generative organs differing, *vide* plate iii, fig. 13.

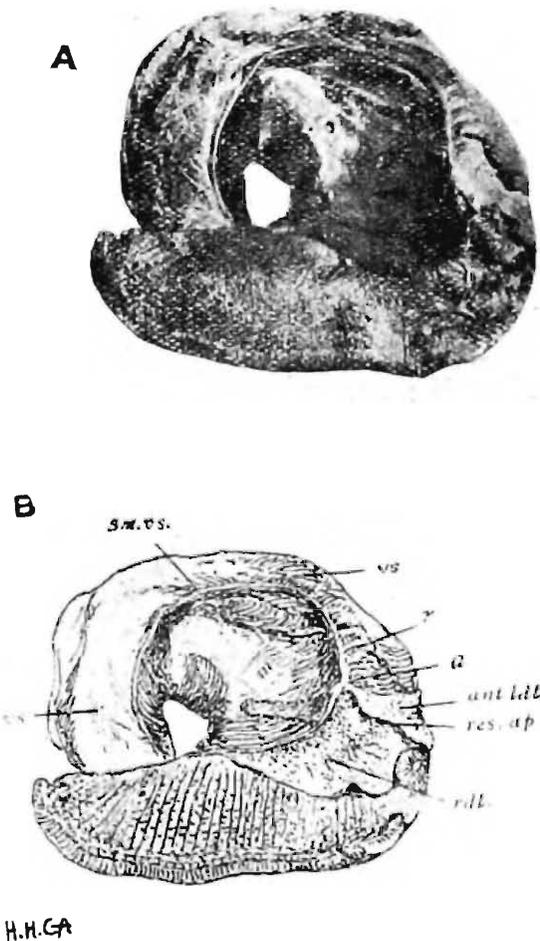


FIG. 1.—*Koratia distincta* (Pir.).

A. Animal, view of right side, about natural size.

B.

" To show different parts, and the position (a) of the right shell lobe (dotted line) had one been present.

ant. ldl. anterior left dorsal lobe; r. rectum; rdl. right dorsal lobe; res. ap. respiratory aperture; vs. visceral sac; sm. vs. sutural margin of visceral sac.

The animal (text-fig. 1 A) of this species from Siam has no colour markings, the whole of the foot is ochraceous in spirit and the length of the specimen dissected, not the largest, is 45 mm. in its very contracted state. It is evident they were put direct into the spirit, they are so shrunken and hardened.

The sole of the foot is wrinkled in the central area and divided, the peripodial margin is moderately broad and closely segmented or fringed, bounded by a single straight groove above and another irregular zig-zag one above it; from this close-set

parallel grooves extend upwards towards the upper surface of the foot, the side of which is very smooth. The mucous gland is not large, not by any means so largely developed and conspicuous as in *Hemiplecta floweri*, E. A. Smith (plate iv, fig. 1). There is not a vestige of either a right or left shell lobe as in *Ariophanta (Nilghiria) ligulata*, Fer., pl. xcvi, fig. 16, *Moll. India*. In text-fig. 1B the position is indicated where they would be at (a). The mantle margin is simple, straight and continuous from the rectum round to the posterior margin above the keel of the foot like a narrow hem following the peristome.

The right dorsal lobe (*rdl.*) is large and triangular in shape, the left is in two very distinctly separated portions, very irregular in breadth, the anterior about 15 mm. long by 4 mm. broad.

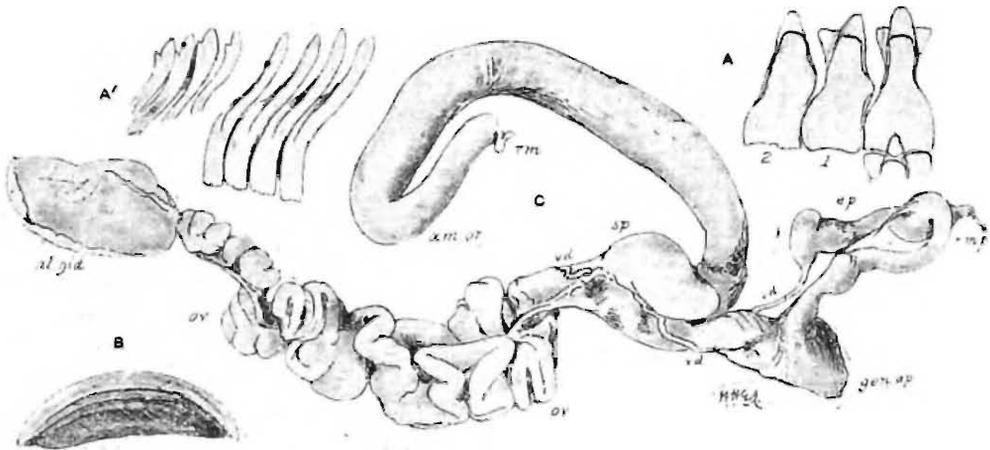


FIG. 2.—*Koratia distincta* (Pfr.)

A. Centre tooth and adjacent admedians, $\times 170$.

A'. Inners and outside marginal teeth, $\times 170$.

B. Jaw, $\times 58$.

C. Genitalia, $\times 2$.

al. gland., albumen gland; *am. or.*, amatorial organ; *ep.*, epiphallus; *gen. ap.*, generative aperture; *ov.*, oviduct; *f.*, flagellum; *rm.*, retractor muscle; *rm p.*, retractor muscle penis; *vd.*, vas deferens; *sp.*, spermatheca.

The branchial sac is very ample, the renal organ very long, narrow and white in colour.

Genitalia (text-fig. 2 C).—The amatorial organ (*am. or.*), comparatively speaking, is of great length, quite 40 mm., evenly cylindrical, having a retractor muscle (*rm.*) at its somewhat blunt end. The penis in comparison to this last organ is short; a straight tube leads from the generative aperture to the retractor muscle (*rm p.*), where it bends sharply and enlarges into a rounded mass, a sort of kink in the tube contracting again at the short epiphallus (*ep.*) leading on to the junction of the vas deferens (*vd.*), and here a short oval mass represents the usual kalk-sac or flagellum (*f.*).

The spermatheca (*sp.*) is globose, short and sessile, thus corresponding to the smallness of the kalk-sac and to the probable small size of the spermatophore. The vas deferens is long, the

ovotestis (*ov.*) largely developed, its convolutions being very large and ample, diminishing in size as they approach the albumen gland (*al. gland.*). The male organ is not unlike that of *Hemiplecta floweri* (plate iv, fig. 6a).

Radula (text-fig. 2 A, A').—No marked differences in the form or size separates the central and marginal teeth, they merge gradually one into the other. The centre tooth and about 12 on either side are on broader plates. They are succeeded by an enormous number of narrow, curved, aculeate, closely-packed teeth, and nearing the margin a few become evenly and minutely bicuspid, the outermost marginals are very minute. The first radula extracted was not complete enough to count the teeth in the row, but there are at least 250 on each side.

This does not agree with the radula of the species I dissected and described in the *Proceedings of the Malacological Society*, p. 35, of a specimen from Saigon given me by Dr. Hungerford, who retained the shell. Dr. Hungerford's collection was dispersed after its sale to Messrs. Sowerby and Fulton, so there is no fear of ever tracing and seeing what that shell was like.

Jaw very dark brown, perfectly straight on the cutting edge and slightly arched above (text-fig. 2 B). It may be noticed particularly that in the genitalia the male organ of this Siam species is not at all like that of the South Indian genus *Ariophanta* with dextral shells, with which they have been placed by some conchologists.

Among the large Molluscs of the Malayan Region, this species does not find a place in either of the genera *Hemiplecta*, *Xesta*, or *Rhysota*. Thus it seems necessary to constitute one, which I name after the Siam district in which it is found.

Koratia, gen. nov.

Shell very large and solid, animal with no shell lobes, mucous gland small. Jaw straight on cutting edge. Radula, teeth numerous in row, with closely-packed, aculeate marginals.

If we consider one character, a marked external one, that of shell lobes, it is of interest to note that *Hemiplecta humphreysiana* bears the same resemblance to *Koratia distincta* as *Macrochlamys indica* and allied species do to *Bensonia monticola*.

