Notes on the genus Deshayesia Raulin

by

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1. The Gastropod group Deshayesia Raulin, 1844, which is synonymous with Naticella Grateloup, 1845 nec Guilding, 1840, and may be regarded as a subgenus of either Ampullina Bowdich, 1822 (= Ampullella Cox, 1931) or Globularia Swainson, 1840 (= Cernina Gray, 1842), has been erected for a characteristic species from the Oligocene basin of Etampes, France, viz., Deshayesia parisiensis Raulin.

During the century following the erection of the group, Deshayesia was recorded exclusively from the Paleogene — Eocene and particularly Oligocene — deposits of Western Europe. It was remarkable, therefore, to recognize a representative of this group in Younger Miocene deposits of the East Indies (Beets, 1942a, p. 252), although the development of the European and Indo-Western Pacific Tertiary faunas provides much evidence for exchanges of genera.

The systematic study of Neogene faunas from the Eastern and Western Bornese Tertiaries has offered some opportunities of describing new representatives[1]) of important molluscan groups which were exclusively

[1]) In part published by the writer, 1941—1944.

known from the European Paleogene and must have migrated eastwardly on one or more occasions. In the Indo-Western Pacific region these groups underwent a different development from the European one, both from a stratigraphical and frequently also from a purely systematic point of view[2]).

The frequency as well as the general character of the species may differ from those of the representatives in the source area. Therefore, the writer was not much surprised to notice differences between the Bornese species and the generic diagnosis hitherto accepted, the more so as the variability of Deshayesia „was not well-known". Afterwards the writer found opportunities for comparison with European material and literature leading to a different opinion.

2. Some time ago the writer discovered a shell in the Leyden Geological Museum collections labelled provisionally Deshayesia parisiensis Raulin (locality Etampes) and differing considerably from Cossmann's generic diagnosis (cf. Cossmann, 1925, pp. 30—32; D. parisiensis: p. 30, pl. 3, figs. 7—8).

While describing the Bornese fossil, Globularia (Deshayesia) mollicula (Beets, 1942a, p. 252, pl. 26, figs. 24—27), the following differences from Cossmann's diagnosis were noted:

(1) D. mollicula is an extremely small species, its height measuring only 1.7 mm.

(2)? The European species are provided with a thickened inner side of the outer lip. This is probably no actual difference at all, as the right lip of the Bornese shell is partly damaged.

(3) The whorls of the Bornese specimen are, „unlike the European species", not separated by deep sutures.

(4) The three columellar plaits of D. mollicula are not equidistant, as should be typical for Deshayesia according to Cossmann's diagnosis. Wenz's description is, in principle, similar (Wenz, 1941, p. 1023).

(5) The uppermost of the three plaits is stronger than the two anterior ones, which, moreover, are nearer to each other than the posterior plaits.

As to the first mentioned difference it should be noted that D. mollicula is an element of a typical dwarf-fauna — which will be fully described at a later date — and accordingly the small size cannot be regarded as unusual. As to (3), it should be noted that writer's statement was an

[2]) A few examples may be given: Cyprimeria, which in Tertiary time was recorded „exclusively" from the Paris Basin Eocene and the Pliocene of Karikal, India; and Atopodonta, comprising two species in the Paris Eocene and three (four?) species in the Miocene of the Far East (cf. Beets, 1942 a, b). A fourth (fifth?) species will be described in another paper.

incomplete quotation of Cossmann's diagnosis (l.c., 1925, p. 31): On page 32, Cossmann stated: „sutures non canaliculées".

As regards (4) and (5) we may state that neither Cossmann nor other compilers mentioned that certain characters of other species — cited on the same page (l.c. 1925, p. 32) — differ from the diagnosis based on the genotype.

D. miloni Cossmann (1919, p. 191, pl. 6, figs. 35—36, 41; 1925, p. 32) differs from the genotype, D. parisiensis — and from D. mollicula — in being provided with a genuine umbilicus and no less than six columellar plaits, the three anterior ones being closer together. Cossmann's figure 41 clearly depicts the irregular development of the plaits. Their description reads: „les trois supérieurs sont plus gros et plus proéminents, ils persistent davantage, mais ils atteignent rarement l'ouverture adulte ou l'on ne distingue que leur trace empâtée dans un seul bombement calleux". And: „Elle se distingue de D. parisiensis Raulin par ..... ses dents columellaires moins persistantes" (l.c., 1919, p. 191). Hébert and Renevier (1854, p. 25, pl. 1, fig. 3), who considered D. parisiensis a synonym of D. cochlearia (Brongniart), mentioned the discovery of columellar plaits in Brongniart's type material. From their further statements we may mention that the umbilicus of the Eocene shells examined by them is entirely or almost entirely closed, while the columella bears one strong posterior plait and two to six smaller ones in front, being separated from the posterior by a greater interval.

The variation of the columella revealed by the species of Deshayesia as well as by the individual specimens, allows of the statement that D. mollicula must be regarded as a normal representative of this genus.

Further, it can be stated that the specimen ascribed to D. parisiensis (see fig. 1), which actually shows almost all characters of this species, bears a small umbilicus, while the columella is provided with five instead of three plaits, the upper and lowermost being smaller than the others. Bearing in mind the variability of other species, D. miloni for instance, it is not advisable to ascribe the specimen figured here, to another species or even merely a variety of D. parisiensis. It is quite obvious that if this specimen could have more developed, one would have noted a closed umbilicus[1]), while only the three stronger columellar plaits would have persisted. It is to be hoped that in future the development of the umbilicus and columella of D. parisiensis may be studied from a good series of specimens, like D. miloni.

Fig. 1

[1]) Cossmann (1925, p. 31) denies this: „l'ombilic est totalement clos à tout âge".

As regards the umbilicus it must be added that Boussac stated in another case, D. alpina d'Orbigny (Boussac, 1911, p. 333, pl. 20, figs. 25, 25a-b, 28, 28a-b, 41), that the „callosité columellaire semble ne jamais recouvrir entièrement l'ombilic".

The variability outlined above, certainly renders a completion and alteration of the hitherto accepted diagnosis of Deshayesia necessary. It seems advisable, moreover, to study the development of the columella in species of this group whenever the amount of material allows of removing of outer shell portions so as to enable one to follow the development of the plaits.

It may be added here that possibly Deshayesia persisted throughout the Tertiary until recent time, being represented now merely by dwarf forms like the fossil D. mollicula. Pisulina biplicata Thiele (1925, p. 32, pl. 3, fig. 15) seems to be an extreme recent representative of the Deshayesia group, but it has been ascribed to the genus Pisulina G. & H. Nevill, 1869, which belongs to the Smaragdiinae (Neritidae). Unfortunately, the writer had neither general Pisulina material at his disposal, nor specimens of P. biplicata in particular, and it proved impossible, judging from the figure only, to state whether the columellar protrusions of P. biplicata or other Pisulina are genuine teeth as are typical for the Neritidae, or columellar plaits as in the Deshayesiinae.

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3. References

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