ABSTRACT. The study of reproductive tract of the south-east Asian species *Helix pernobilis* Férussac 1821 has shown that the species belongs to the genus *Koratia* Godwin-Austen 1919. The problem of taxonomic rank of the genus *Koratia* and its comparison with related taxa (*Ariophanta* and *Hemiplecta*) are briefly discussed.

The fauna of land mollusks of Vietnam was studied by many malacologists, predominately French. A catalogue of species known up to date as well as full bibliography had been presented by the author [Schileyko, 2011]. However, anatomically mollusks of Vietnam remain very poorly studied. To establish the generic and familial belonging of a particular species in most cases is possible by only anatomical characters, especially it is true for species with helicoid shells. The description of one of such species is given below.

*Koratia* Godwin-Austen, 1919


Type species – *Helix distincta* L. Pfeiffer, 1850, by original designation.

Shell is large, depressed-subglobular, moderately thin to rather solid, with evenly rounded to angular periphery. The number of whorls is 5.5-6. Coloration is nearly monotonously yellowish to pale corneous, with a pronounced to varying degree dark band below periphery. Embryonic whorls are smooth. Later whorls look almost smooth, with delicate spiral lines. Aperture is ovate, moderately oblique, with thin margins. Umbilicus is narrow, open. Height up to 25-42, diameter 45-68 mm.

At the boundary between penis and epiphallus there is a rather small lime sac (“flagellum”). Epiphallus is somewhat longer than penis, with a rather small caecum, to which the retractor of penis is attached. Penis has an envelope. Sarcobelum is long, with apical ligament and well-developed thick-walled papilla, its pore occupies apical position. Spermatheca with very short duct, reservoir has a muscular band (ligament) that connects it with the surface of spermoviduct.

**Distribution.** SE Asia.

*Koratia pernobilis* (Férussac 1821) (Fig. 1)

Férussac, 1821: 39, no. 182 (*Helix*); Pfeiffer, 1860 (1854-1879): 177, Taf. XLVIII, Fig. 3, 4 (*Helix*); Crosse, Fischer, 1864: 327 (*Helix*); Fischer, Dautzenberg, 1904: 4 [*Nanina* (*Rhysota*)]; Pilsbry, 1886: 33, pl. 8, fig. 28 (*Rhysota*); Schileyko, 2011: 30 (*Koratia distincta pernobilis*).

Type locality – “Poulo-Condor” (at the present time – Còn Đảo Island, S Vietnam).


The shell is depressed, moderately thin, of 5-5.5 whors. The whors are little flattened below suture. Last whorl with smoothed but quite distinct peripheral angle, is not descending toward the aperture. Color mostly pale-corneous, peripheral angle light (almost white), from below to it a brown band adjoins, its lower margin of which more or less blurred. Embryonic whors smooth. On later whors radial sculpture weak (almost absent); spiral sculpture represented by a thin wavy striation. Aperture is broadly ovate, moderately oblique, with thin, straight margins. Umbilicus is rather narrow, subcylindrical. Dimensions of studied specimen: shell height 40.2, diameter 63.2 mm.

Vas deferens thin, moderately long, in its distal part there is a small rounded flagellum (“lime sac” of some authors). On the penis/epiphallus junction there is a rather small caecum, to which penial retractor is attached. Epiphallus rather long, its lower (distal) section is markedly corrugated, separated from the penis by a narrow constriction. Penis not large, its inner surface near the atrium with irregular, smoothed longitudinal folds; nearer to the epiphallus there are series of small rounded tubercles. Most part of the penis is surrounded by
well-developed sheath, upper edge of which is drawn by connective-tissue fibers to the vas deferens. Oviduct somewhat longer than vagina, inner surface of which bears irregular, smoothed longitudinal folds. Sarcobelum long, with apical ligament. Lower part of the sarcobelum expanded, contains muscular conic papilla. Spermatheca is short, with indistinctly expressed reservoir and apical ligament which attached to the spermoviduct.

**Remark.** In the studied specimen of *K. pernobilis* the spermatophore is not found, but there is information [Wanvipa Kumprataung et al., 1989] that in *Koratia distincta* spermatophore is present; description of its structure is not given.

**Distribution.** S Vietnam (Còn Ðao Island), N Vietnam (Xo-Shan-Bin Prov.), Cambodia, Thailand.

**Discussion**

System of the Ariophantidae family cannot be considered completely established. In particular, various authors attributed the type species of the genus *Koratia* to different genera and subgenera (not counting the genus *Helix*): to *Nanina* [Martens, 1860; Smith, 1896]; to *Nanina* (*Ryssota*) [Martens, 1867; Fischer, Dautzenberg, 1904; Dautzenberg, Fischer, 1905]; to *Hemiplecta* [Morlet, 1889, Wanvipa Kumprataung et al., 1989]; to *Ariophanta* (*Hemiplecta*) [Morlet, 1891]. It is essential that all the named authors, except Wanvipa Kumprataung et al. [1989], had based their conclusions only on conchological characters, whereas the majority of ariophantid genera are diagnosed mainly by anatomical features. If to leave the names *Nanina* Gray 1834 (preoccupied by Risso, 1826) and *Ryssota* Albers, 1850 (the genus distributed only in the Philippine Islands), there remains the question of the relationship of the genus *Koratia* with genera *Ariophanta* Des Moulins, 1829 and *Hemiplecta* Albers, 1850.

Differential diagnoses of three closely related genera following:

- **Hemiplecta** – penial papilla is present, caecum long, epiphallus is folded across and both its knees are connected by a ligament.
- **Koratia** – penial papilla is absent, caecum short, epiphallus is not folded across.
- **Ariophanta** – penial papilla is absent, caecum long, epiphallus is folded across, and both its knees are connected by connective-tissue fibers.
Thailand. There are two possibilities: either collected in the northern part of the country. Be-
from southern Vietnam, the material that I have, is requires clarification. The species was described
of these three taxa will overlap.
No less complex situation is with Helix pernobilis Férrussac 1821. This taxon was assigned (as a separate species or subspecies of Helix distincta) to Nanina (Rhyso) [Fischer, Dautzenberg, 1904], or to Koratia [Schileyko, 2011].
At the same time the genus Koratia some authors [Godwin-Austen, 1919; Schileyko, 2002] considered as a separate genus, others [Solem, 1966; Wanvipa Kumprataung et al., 1989] – as a subgenus of the genus Helmiplecta (description and illustration of the reproductive tract of the type species of Helmiplecta – Helix humphreysiana Lea, 1841 – see Benthem Jutting, 1950, p. 126, Fig. 1, and of closely related species “Helix” ceylanica L. Pfei-
1850 – Schileyko, 2002, p. 1282-1283, Fig. 1686). Generic status of Koratia and its distinctions from the genus Hemiplecta has been shown by the author [Schileyko, 2002]. The structure of the repro-
ductive tract of Helix pernobilis indicates the belonging of this species to the genus Koratia; anatomy of the type species of the genus is given by Goodwin-Austen [1919, p. 201, Fig. 2], Wanvipa Kumprataung et al. [1989, p. 79-81, Fig. 9-14] and Schileyko [2002, p. 1282, Fig. 1685], and no sig-
ificant differences in the structure of the reproductive tract between these two species were ob-
erved.
Two questions remain open: the rank of the taxon (whether it is a separate species or subspe-
cies of Koratia distincta), and distribution area of K. pernobilis.
With regard to the first question, perhaps the only difference of Koratia pernobilis from K. dis-
tincta is that in the first species there is a peripheral angle, whereas in the second one the periphery of the last whorl is evenly rounded. However, the degree of angularity of the last whorl in many species of mollusks varies considerably and to con-
firm confidently the species status of K. pernobilis will only be possible when/if both forms are found in the same place.
The question of the distribution of K. pernobilis requires clarification. The species was described from southern Vietnam, the material that I have, is collected in the northern part of the country. Be-
sides, some findings were made in Cambodia and Thailand. There are two possibilities: either K. per-

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