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Атлас современных моллюсков северной Евразии

Guide to Recent molluscs of northern Eurasia

3. Annotated and illustrated catalogue of species of the family Lymnaeidae (Gastropoda Pulmonata Lymnaeiformes) of Palaearctic and adjacent river drainage areas

Part 1

Nikolay D. Kruglov

Smolensk State Pedagogical Institute, Przewalski street 4, Smolensk, RUSSIA

Yaroslav I. Staroboratov

Zoological Institute of Russian Academy of Sciences, Universitetskaya embankment 1, St. Petersburg, RUSSIA

The present paper is the result of long-term study by the authors (together with their students) on the taxonomic revision of one of the most species-rich and diverse families of freshwater Pulmonata — Lymnaeidae. The revision is based on the biological species concept [Mayr, 1963, 1970]. The main evidence for the specific status of two or more forms, according to this concept, is the presence of coexisted populations in the same area under conditions when all external obstacles to crossing are completely absent. To isolate such populations, we used the shell morphology and the anatomy of reproductive system. When the forms examined do not coexist (i.e. when their distribution areas are sharply separated geographically or ecologically), we used only the level of distinction and biogeographical typology of the areas.

We studied shells by comparatorial method (i.e. comparison of shells by the comparator — *camera lucida*). This method has been already described both in Russian [Izzatullaev, Starobogatov, 1984; Starobogatov, Tolstikova, 1986] and in English [Kruglov, Starobogatov, 1985 c]. Valuability of this method is in that it permits to compare the conispiral (=turbospiral) shells by each of Raup's [1966] parameters* without use of computers.

* In our opinion, they are not parameters in mathematical sence but complex equations with many parameters.

The reproductive system was studied in dissected molluscs under a stereoscopic microscope. We used the standard fixation, leading to maximum contraction of mollusc (live mollusc were put directly into 96 % alcohol), because the proportions of parts of reproductive system (especially those of copulative apparatus) depend on the degree of contraction of mollusc. The shell morphology and anatomy of reproductive system were described in Kruglov, 1975, 1980; Gundrizer, Starobogatov, 1979; Kruglov, Starobogatov, 1979, 1981, 1983 a, b, 1984 a, b, 1985 a-c, 1986, 1987, 1989 a, b; Davydov et al., 1981; Izzatullaev et al., 1983 a-c. Naturally, there are many works concerning the anatomy of Lymnaeidae species. The most important are those by Larambergue, 1928; Hubendick, 1951; Jackiewicz, 1959; Lazareva, 1967 a, b. The main trouble with previous works is that many authors used the specific names in a broad sence, while some of the species accepted by respective authors appeared to consist of several different species. This leads to difficulties in evaluation to which species the anatomical description belongs. However, we used the data from the previous works in the cases when our own anatomical data are absent.

The morphology of egg clusters — syncapsules (often named "capsules" in the literature) also provides an important taxonomic informa-