



Атлас современных моллюсков северной Евразии. 4

Guide to Recent molluscs of northern Eurasia. 4

Gastropods of Baikal Lake. The family Valvatidae

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The purpose of the work is to publish for the first time a list of all previously described species of Baikalian molluscs of the family Valvatidae Gray, 1940. It consists of 15 species, among which 4 species of *Cincinna* (*Sibirovalvata*) are non-endemic, other 5 species of *C.* (*Pseudomegalovalvata*) and 6 species of *Megalovalvata* (*Megalovalvata*) are endemic.

The data on species morphology and distribution were obtained from published works as well as from the samples stored in the collections of the Zoological Institute of the Russian Academy of Sciences and the Limnological Institute of the Siberian Division of the Russian Academy of Sciences.

The dimensions given in the species diagnoses are average for adult specimens.

Abbreviations used in the text are as follows: H — shell height, W — shell width, du — umbilicus diameter, da — aperture diameter, hsp — spire height, hlw — last whorl height, n — number of whorls, TS — type species.

ANATOMY

The anatomy of the family Valvatidae was studied by Moquin-Tandon [1852], Bernard [1889, 1890], Garnault [1889, 1890], Yonge [1947], Johansson [1953, 1955], Sitnikova [1984], Rath [1988] and others. The mantle cavity of Valvatidae differs from that of other freshwater prosobranch families in having pallial tentacle and a bipectinate gill (ctenidium), while the osphradium is invisible. According to Yonge [1947], the pallial tentacle creates an additional stream of water in the mantle cavity. Bernard [1889] and Yonge [1947] discovered that sensitive cells surrounding the small ganglion fulfil the function of the osphradium. Both the bipectinate gill and the kidney have a complicated structure. The kidney structure of the Baikalian *Megalovalvata baicalensis* (Gerstfeldt) is shown in Fig. 1. Rath [1988] has established the

differences between the gills of certain species. Three groups of Baikalian Valvatidae have also differences in the gill structure (Fig. 3). The alimentary tract of Valvatidae, which feed on detritus and plant remains, is primitive. There are a bilobed digestive gland, a rudiment of the caecum, and a protostyle. The protostyle sac is connected with the intestine by a wide aperture. Some organs of the alimentary tract of the Baikalian Valvatidae and their histology are shown in Figs 2 and 4. The nervous system consists of the near-buccal nerve ring with relatively short pleural-visceral nerve connective; the visceral ganglion is not incorporated into this ring. The cerebral ganglia lie on the anterior part of the buccal mass, and the cerebral connective is very short. The pleural ganglia are located close to cerebral ganglia. The intestinal ganglia are located close to the pleural ganglia and have an asymmetric position (Fig. 5). Valvatidae are hermaphroditic. In Figs 6 and 7 the structure of the reproductive system of Valvatinae and the change of organs in their development are shown.

TAXONOMY

Family Valvatidae Gray, 1840

Subfamily Valvatinae s. str.

Genus *Cincinna* Hubner, 1810

Subgenus *Sibirovalvata*

Starobogatov et Streletskaia, 1967

C. (C.) confusa Westerlund, 1897 — TS

Cincinna (Sibirovalvata) sibirica
(Middendorff, 1851)

Fig. 8 E

Middendorff, 1851: 299 (*Valvata cristata* var.); Westerlund, 1877: 62, Fig. 16 (idem); Westerlund, 1886: 141 [*Valvata*