

Review of the European species of the genus *Sphaerium* (Mollusca, Bivalvia, Pisidioidea)

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The group of fingernail clams, treated in Russian literature as genus *Sphaerium* while as subgenus *Sphaerium* s.str. in western countries, is revised. Qualitative characters of shell and soft body were investigated, and their diagnostic value evaluated. As a result, 6 species are distinguished in the European fauna, and the group is divided into 3 genera, regarded earlier as subgenera *Sphaerium* s.str. (3 species), *Nucleocyclus* (2 species) and *Parasphaerium* (1 species). The quantitative morphometric analysis reveals some new differences between species, but their diagnostic value is restricted because of great individual and inter-populational variability. Diagnoses for all European genera and species and the key for their identification are given. Phylogenetic relationships within fingernail clams are analyzed in the light of the new data.

Обзор европейских видов рода *Sphaerium* (Mollusca, Bivalvia, Pisidioidea)

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Проведена ревизия группы, обозначаемой в отечественной литературе как род *Sphaerium*, а в зарубежной — как подрод *Sphaerium* s.str. Изучены качественные признаки раковины и мягкого тела и оценена их пригодность для диагностики. Установлено, что в европейской фауне представлено 6 видов изучаемой группы. Последняя разделена на 3 самостоятельных рода, соответствующих установленным ранее подкладам *Sphaerium* s.str. (3 вида), *Nucleocyclus* (2 вида) и *Parasphaerium* (1 вид). Количественный анализ морфометрических признаков выявил новые различия между видами, однако их диагностическое значение ограничено вследствие значительной индивидуальной изменчивости. Приведены родовые и видовые диагнозы, а также определительная таблица. В свете новых данных проанализированы филогенетические отношения родов сфериид.

INTRODUCTION

Being widely distributed and abundant in many freshwater communities, fingernail clams (genus *Sphaerium* Scopoli, 1777 sensu lato) are well known not only to professional malacologists. Nevertheless, this group of molluscs is still one of the most complicated for identification, as different taxonomic schools have developed incompatible approaches to its systematics.

The group traditionally designated as the subgenus *Sphaerium* s.str. is especially intricate. In the classic Westerlund's review [Westerlund, 1890], it included as many as 16 species. Odhner [1921-1929] reduced the number of valid names. Since that time specialists of the West European countries distinguished only two species: *Sphae-*

rium corneum (L., 1758) and *S. nitidum* (Clessin in Westerlund, 1877). But in the USSR the group was revised once again in the late 1960s [Starobogatov, Streletskaia, 1967; Alimov, Starobogatov, 1968]. As a result, some old species names were reviewed, a new species from Siberia was described, the whole group became a genus and was divided into 3 subgenera: *Sphaerium* s.str., *Nucleocyclus* Alimov et Starobogatov, 1968 (type species *Sphaerium nucleus* (Studer, 1820)) and *Parasphaerium* Alimov et Starobogatov, 1968 (type species *S. rectidens* Starobogatov et Streletskaia, 1967).

Later on, some anatomical data, mainly on the breeding organs, were involved in the taxonomic discussion [Starobogatov, Korniusshin, 1986]. However, they were not complete