

*Sphaerium (Cyrenastrum) solidum* (NORMAND, 1844) a species  
 new to the fauna of Hungary  
 (Bivalvia, Sphaeriidae)

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ABSTRACT: The authors report the first occurrence of *Sphaerium (Cyrenastrum) solidum* in Hungary. They have collected a few specimens of the species along the Danube, at Süttő.

In the course of a field survey at the Süttő reach of the Danube, living specimens of *Sphaerium solidum* were collected (1744 stream kilometre). This species is new to the fauna of Hungary (PINTÉR et al. 1979). *S. solidum* usually prevails in large rivers with soft bottom and in canals in Eastern and Central Europe (HOLOPAINEN & KUIPER 1982; REDSHAW & NORRIS 1974). On the basis of the CLECOM database (FALKNER et al. 2001), *S. solidum* is found in the following countries: Estonia, Latvia, Lithuania, Poland, Great Britain, Netherland, Belgium, France, Germany, mover, the species occurs in the European part of Russia, Ukraine, Bielorussia.

Our knowledge on the distribution of the species along the river Danube is limited. GLÖER et al. (1980) wrote (p.57) ‘Nord- und Mitteldeutschland, nicht in der Donau’. The first data was published by FRANK et al. (1990), p. 112. ‘Deutschland. Zuflüsse: Main-Donau-Kanal, bei seiner Mündung in die Donau, Str.km 2411.5 (2.11.1987, lg. Schultz). Its locality in Hungary: Süttő, Danube, str.km 1744, boat-harbour (CT 09) (Photo 1), sandy mud bottom, 25.10.2001. lg. Péter Juhász and János Békési (4 living specimens from which 2 were placed in the collection of the Mátra Múzeum, no. 50331). The distance between the two localities is 566.5 stream kilometres. It is to be supposed that further research will reveal new isolated populations living in small habitats suitable for its growth.

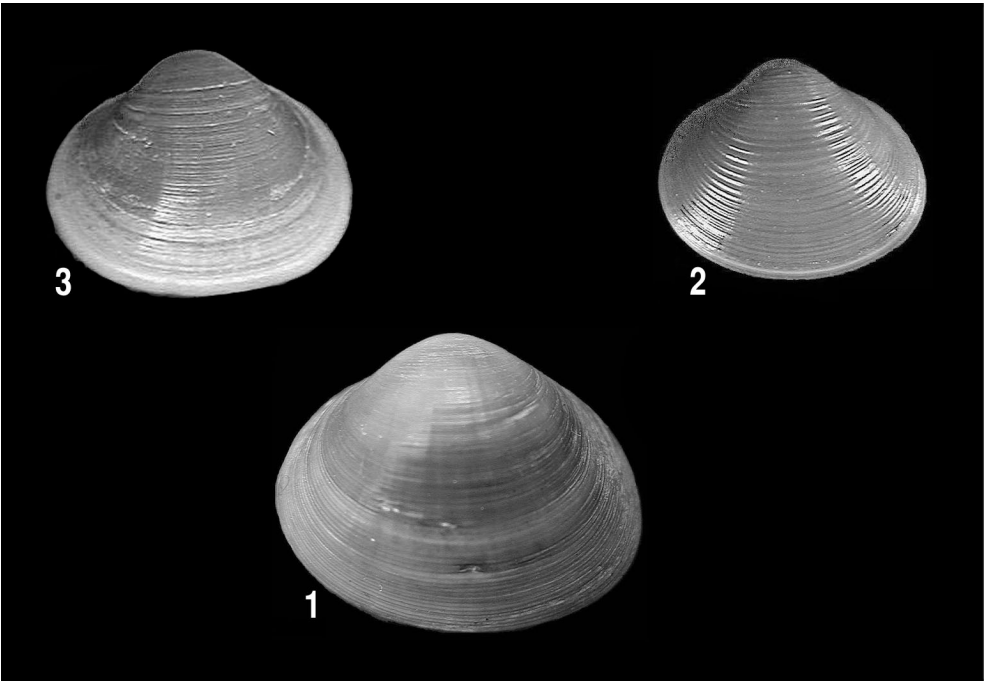
The bank of the habitat had been covered by stones before the photo was taken (this is also distinctly visible on the photo). Since the habitat of the species approaches the riverbank zone, stone scattering can cause considerable shrinkage in the living space of the population.

Key to Hungarian species of *Sphaerium*

1. Shell large (length 18-25 mm). Ligament convex and well visible from the outside. Cardinal tooth C3 (right valve) hooklike, posterior part thickened and divided. C2, C4 (left valve) short and thick .....*S. rivicola* (Fig 1)
- Shell smaller (length 7-14 mm). Ligament sunken, from outside poorly visible. Cardinal tooth C3 not thickened, plate-like, slightly divided .....2
2. Shell extremely thick-walled, with very distinct ribs .....*S. solidum* (Fig 2)
3. Shell thin-walled, its surface delicately and irregularly striated .....*S. corneum* (Fig 3)



Photo 1: Süttő, Danube, str. km 1744, boat-harbour



Figs. 1–3. 1. *Sphaerium rivicola*, Győr, Rába, length 20.4 mm; 2. *S. solidum*, Süttő, Duna, length 8.6 mm; 3. *S. corneum*, Magyar, Öreg-Túr, length 12.4 mm

## Taxonomical position of the Hungarian *Sphaerium* species (based on CLECOM)

Familia Sphaeriidae DESHAYES, 1855 (1820)  
Subfamilia Sphaeriinae DESHAYES, 1855 (1820)  
Genus *Sphaerium* SCOPOLI, 1777  
Subgenus *Sphaerium* SCOPOLI, 1777  
*Sphaerium* (*Sphaerium*) *corneum* (LINNAEUS, 1758)  
    Subgenus *Nucleocyclus* ALIMOV & STAROBOGATOV, 1968  
    *Sphaerium* (*Nucleocyclus*) *nucleus* (S. STUDER, 1820)\*  
Subgenus *Amesoda* RAFINESQUE, 1820  
*Sphaerium* (*Amesoda*) *rivicola* (LAMARCK, 1818)  
Subgenus *Cyrenastrum* BOURGUIGNAT, 1854  
*Sphaerium* (*Cyrenastrum*) *solidum* (NORMAND, 1844)

The following short description of *S. solidum* has been compiled from the accounts of HERRINGTON (1962), ELLIS (1978), GLÖER et al. 1980), CLARKE (1981) and PIECHOCKI (1988). Shell thick-walled and strong, its outline oval or isosceles triangle-like. Its surface distinctly ribbed. Umbones in its mid part strongly protruding. Ligament visible between the umbones. Hinge-plate strong, broad and bent. Cardinal teeth very fine, C3 and C2 bent, C2 and C4 short. C3 in its anterior part tapered, posterior part thickened. C2 somewhat larger and situated parallel to the hinge-plate margin, C4 situated obliquely above C2. Fresh specimens from Süttő imens are silky and pale yellow. The size of the specimen on the photo: length 10.35, width 8.7, gravid, with 8 embryos

Ecology: PIECHOCKI (1989): p. 261-262.: '*S. solidum* is a species characteristic of large rivers where it inhabits places with sandy or sandy-muddy bottom. It occurs both in the main current and at the banks. It has been observed that *S. solidum* can inhabit coarse sands in sites of a considerable velocity of water flow. The clam was found burrowing in the substratum which enables it to live in places temporarily devoid of water (WOLF 1970). *S. solidum* inhabits also old river beds, large lakes and channels. (WOLF 1970, REDSHAW and NORRIS 1974): According to THIEL (1929) *S. solidum* is extremely sensitive to water pollution, however the results of WOLFF (1970) indicate that it tolerates water pollution comparatively well. On the other hand the observations from Poland suggest rather a negative effect of the pollution.'

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\* CLECOM divides the species according to FALKNER's (2000) publication. Earlier Hungarian studies (RICHNOVSZKY & PINTÉR 1979) regarded the species as a forma of *S. corneum*. To resolve this problem in Hungary, a new revision has to be made.

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