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Remarks on the Sphaeriidae of Greece (Mollusca, Bivalvia)

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Sphaeriidae from 21 localities in Greece represent ten species, viz., *Sphaerium corneum, Musculium lacustre*, and eight species of *Pisidium*, the commonest of which is *P. casertanum. P. tenuilineatum* and *P. annandalei*, of which the former is rarer than the latter, occur sympatrically; this implies that both are geographical vicariants, overlapping in distribution in the eastern Mediterranean area.

Key words: Bivalvia, Sphaeriidae, Pisidiidae, autecology, faunistics, biogeography, Greece.

The history of the studies on the sphaeriid clams of Greece is rather modest. It comprises a few records in the papers of Favre (1943), Kuiper (1963) and Reischütz (1985, 1986). The character of the water reservoirs in this part of the Balkan Peninsula and Greek islands does not facilitate the task of the freshwater mollusc student. For this reason material collected by Dr. A. Falniowski in 1985 in Greece on the Peloponnisos as well as between Athens and Thessaloniki are worth special attention (fig. 1).

The material includes Sphaeriidae from 21 localities and represents ten species: *Sphaerium corneum* (Linnaeus, 1758), *Musculium lacustre* (O. F. Müller, 1774), and eight species of the genus *Pisidium* (table 1). *S. corneum* and *Pisidium amnicum* (O. F. Müller, 1774) were represented only by single, juvenile specimens.

Pisidium casertanum (Poli, 1791) is undoubtedly the most abundant and common species; it was found at 14 (67% of those inhabited by sphaeriids) localities, often in massive numbers.

P. milium Held, 1836, and *P. nitidum* Jenyns, 1832, appear only rarely in the studied material and are not numerous (a few specimens at two localities, the former species near Kalamai, the latter near Kalamai and in Lake Trikhonis).

P. subtruncatum Malm, 1855, collected at seven localities, most often forms fairly abundant populations, the occurrence at four of the localities being massive. Similarly, *P. personatum* Malm, 1855, forms very abundant aggregations as the only species in a given habitat, e. g. in a small bog near Pikermi or in springs in Delphi.

P. tenuilineatum Stelfox, 1918, and *P. annandalei* Prashad, 1925, appear to have a similar ecology, though the former species is rarer and less abundant. Both occur in running waters but according to Kuiper (personal communication) *P. annandalei* has a preference for sources.

Musculium lacustre (O. F. Müller, 1774), lives in very large numbers in Lake Taka and, in addition, only in a drainage ditch west of Patras. The individuals collected should be regarded as *M. l.* f. *ryckholti* Normand, 1844.

All the species mentioned, except for *P. annandalei*, are rather common in Europe and, except for *P. amnicum* and *P. personatum*, are Holarctic in distribution. Information on ecological conditions in the habitats they come from, is very scarce. It appears, however, that preferences of particular species do not depart from those described for

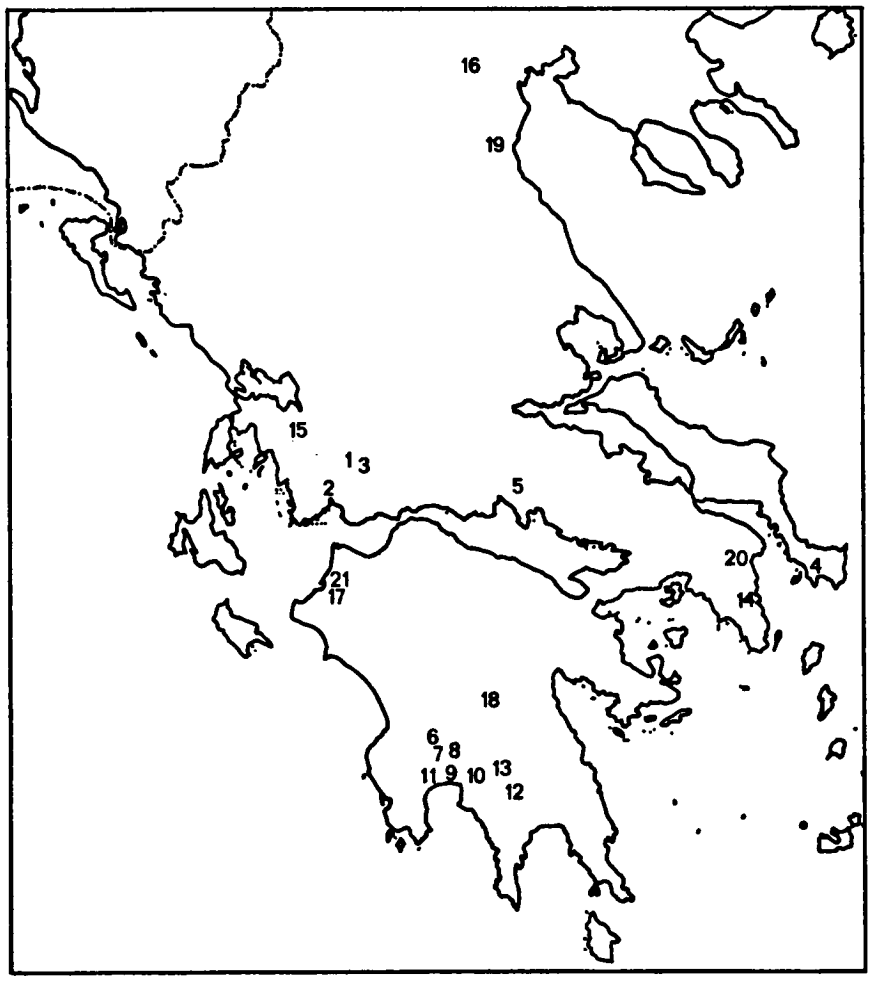

Fig. 1. Distribution of the sphaeriid localities in Greece: 1, meadow bog near Lake Trikhonis (= Trichonis); Lake Lisimakhija (= Lisi Machija); 3, Lake Trikhonis; 4, Marmari, SE Evvoia (= Euboea) Island; 5, springs in Delphi; 6, Pamisos River, c. 20 km N of Kalamata; 7, Pamisos River near Kalamata; 8, drainage ditch near Kalamata; 9, along the road from Kalamata to Messini; 10, river between Kalamata and Messini; 11, Pamisos River, 3 km from the sea; 12, Evrotas River near Sparti (= Sparta); 13, Evrotas River in Sparti; 14, Vravrona (= Vravron) (three different habitats: stream, brackish waters and brackish bogs); 15, Lake Amvrakia; 16, Aliakmon River near Thessaloniki; 17, Pinios River; 18, Lake Taka; 19, Dion, NE of Olimbos; 20, meadow bog near Pikermi; 21, drainage ditch (dried up lake) W of Patrai.

SPECIES	LOCALITIES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Sphaerium corneum (Linnaeus, 1758)	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Pisidium amnicum (O. F. Müller, 1774)	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Pisidium casertanum (Poli, 1791)	30	–	3	*	–	4	23	1	–	3	–	*	8	*	2	–	2	*	3	–	–
Pisidium milium Held, 1836	–	–	–	–	–	–	–	3	2	–	–	–	–	–	–	–	–	–	–	–	–
Pisidium nitidum Jenyns, 1832	–	–	1	–	–	–	–	5	–	–	–	–	–	–	–	–	–	–	–	–	–
Pisidium subtruncatum Malm, 1855	–	*	*	–	–	*	40	–	*	2	–	–	–	–	–	2	–	–	–	–	–
Pisidium personatum Malm, 1855	*	–	–	1	*	*	20	–	6	–	–	23	–	–	–	–	–	*	–	*	–
Pisidium tenuilineatum Stelfox, 1918	–	–	1	–	–	2	13	–	2	–	5	–	–	–	–	–	–	–	2	–	–
Pisidium annandalei Prashad, 1925	100	–	3	–	–	–	40	–	25	50	10	1	–	–	–	–	–	–	–	–	–
Musculium lacustre (O. F. Müller, 1774)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*	–	–	5

Table 1. Distribution of the various species of Sphaeriidae over the 21 localities (see fig. 1). An asterisk indicates more than 300 individuals.

other regions of their range. Similarly, the frequency of occurrence of each species resembles its respective frequency in Central and Western Europe (Kuiper, 1963; Meier-Brook, 1975; Kasprzak, 1975). The species *P. moitessierianum* Paladilhe, 1866 (Schütt, 1985), *P. maasseni* Kuiper, 1987, and *P. henslowanum* (Sheppard, 1823) have also been recorded from Greece (Kuiper, personal communication). In the studied material some species are absent, which otherwise are fairly common in Europe. They are also lacking in the lists of Reischütz (1985, 1986).

Although the 21 localities constitute less than half of all the localities with molluscs, which in turn is less than half of the studied water bodies, it can be assumed that the list presented here comprises a nearly complete species composition of the Sphaeriidae of Greece.

The simultaneous presence of *P. tenuilineatum* and *P. annandalei* in Greece is one of the most interesting facts. The distribution of the former species is considered to be Western-Palearctic, whereas the latter is regarded as a South-Asiatic species, considered Mediterranean in Europe. They are really geographical vicariants, their areas are overlapping in the Mediterranean. Only in 1979 it was found that they occurred sympatrically in Tel Dan in Israel (Kuiper, 1981). The presence of *P. tenuilineatum* on the Peloponnisos and in the southern part of the Balkan Peninsula indicates an extension of the formerly accepted range of the species; in addition, its locality in Israel suggests that its range reaches as far as Israel. The present data on the distribution of this species speak in favour of the autochthonous character of Mediterranean localities, though paleontological data would be a most welcome contribution to the discussion on the co-occurrence of *P. tenuilineatum* and *P. annandalei*. According to Becker-Platen & Kuiper (1979) only the latter has been collected as a fossil in the Mediterranean area. *P. tenuilineatum* seems to be a later (postglacial) species there.

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REFERENCES

BECKER-PLATEN, J. D., & J. G. J. KUIPER, 1979. Sphaeriidae aus dem Känozoikum der Türkei (Känozoikum und Braunkohlen der Türkei, 13). — Geol. Jb. B33: 159-185.

FAVRE, J., 1943. Revision des espèces de Pisidium de la collection Bourguignat du Museum d'Histoire Naturelle de Geneve. — Rev. suisse Zool. 50 (suppl.): 1-64.

KASPRZAK, K., 1975. Zgrupowania małży z rodzaju Pisidium sensu lato (Bivalvia, Mollusca) w różnych typach zbiorników wodnych. — Fragm. Faun. 20 (9): 131-141.

KUIPER, J. G. J., 1963. Hauptzüge der Verbreitung des Genus Pisidium in Europa. — Arch. Molluskenk. 92: 247-252.

——, 1981. The distribution of Pisidium tenuilineatum Stelfox and Pisidium annandalei Prashad in the Mediterranean area. — Basteria 45: 79-84.

MEIER-BROOK, C., 1975. Der ökologische Indikatorwert mitteleuropäischer Pisidium-Arten (Mollusca, Eulamellibranchiata). — Eiszeitalter u. Gegenwart 26: 190-195.

REISCHÜTZ, P. L., 1985. Ein Beitrag zur Molluskenfauna von Leros (Dodekanes, Griechenland). — Malak. Abh. Dresden 11 (2): 17-24.

——, 1986. Beitrag zur Molluskenfauna der Ägäischen Inseln. — Malak. Abh. Dresden 11 (9): 93-103.

SCHÜTT, H., 1985. Die Mollusken des Vegorrites-Sees in Makedonien. — Mitt. zool. Ges. Braunau 4: 301-306.