Sphaeridium marginatum reinstated as a species distinct from *S. bipustulatum* (Coleoptera: Hydrophilidae)

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Abstract: *Sphaeridium marginatum* Fabricius, 1787, is found to be a good species, well separated from *S. bipustulatum* Fabricius, 1781. Lectotypes are designated for both species. The species are described, illustrated and their distribution is outlined. A key to all Palaearctic species of *Sphaeridium* is given.

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Introduction

In 1781 Fabricius described *Sphaeridium bipustulatum*. In 1787 he described *S. marginatum*. From the middle of the last century the synonymy of *S. marginatum* with *S. bipustulatum* became widely accepted. While studying the type material of the genus *Sphaeridium* in the collection of Fabricius, I found that part of the type material of *S. marginatum* is distinct from *S. bipustulatum*. The synonymy of the species will be treated in a forthcoming revision.

Sphaeridium bipustulatum Fabricius, 1781

figs. 1, 4, 5, 9

Sphaeridium bipustulatum Fabricius, 1781:78

Type-material. In the Fabricius collection in the Zoological Museum in Copenhagen there are four specimens under this name of which one is a large specimen of *Cercyon obsoletus* Gyllenhal, 1808. The remaining three specimens, two males and one female, agree with the original description of *Sphaeridium bipustulatum* by Fabricius. One of the males is hereby designated lectotype. It is labelled as follows: "Sphaeridium / bipustulatum Fabr. / lectotype male des. / A. L. v. Berge Henegouwen / 1989". The remaining male and female are paralectotypes. Type-locality: Kiel (Germany).

Diagnosis

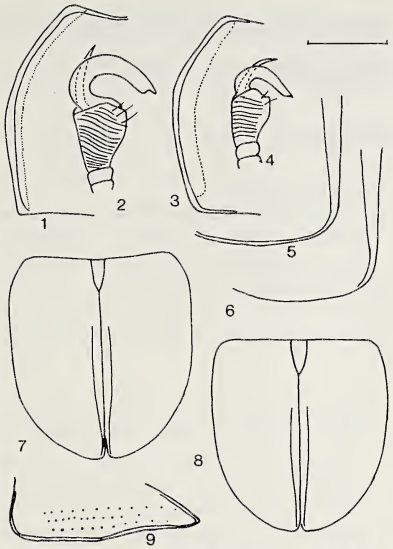
Characterised in both sexes by the distinct rows of larger punctures on the elytron (fig. 9) and the obsolete reticulation on the elytral interspaces. In the male the relative small tarsal claw (fig. 4), the smooth parameres and in the female the elytral sutural line which is continued around the apex of the elytron (fig. 5) are conspicuous. Length 4.4-6.3 mm.

Sphaeridium marginatum Fabricius, 1787

figs. 2, 6

Sphaeridium marginatum Fabricius, 1787: 43 (ex parte)

Type-material. There are two female and three male specimens under *Sphaeridium marginatum* in the Fabricius collection. The three males are conspecific with *S. bipustulatum*. The females belong to *S. marginatum*. One of the females is hereby designated lectotype. It is labelled as follows: "Sphaeridium / marginatum Fabr. / lectotype female des. / A. L. v. Berge Henegouwen / 1989". Type-locality: Sachsen (Germany).



Figs. 1-9. Characters of *Sphaeridium* species. 1, 4, 5, 9, *S. bipustulatum*; 2, 6, *S. marginatum*; 3, 7, *S. scarabaeoides*; 8, *S. lunatum*. 1, 3, left lateral margin of pronotum, dorsal view; 2, 4, ultimate segments of left fore-tarsus in male; 5-6 apex of left elytron in female, dorsal view; 7-8, elytra and scutellum, dorsal; 9, lateral margin and longitudinal rows of punctures of left elytron. (Scale-line = 0.3 mm to figs. 1-6, 1 mm to figs. 7-9.)

Diagnosis

Characterised in both sexes by the absence or very obsolete, larger elytral punctures and the stronger reticulation on the elytron. In the male the larger tarsal claw (fig. 2), the smooth parameres and in the female the elytral sutural line, which is not continued around the apex of the elytron (fig. 6), are conspicuous. On an average longer than *bipustulatum*. Length 5.0-6.7 mm.

Key to the Palaearctic species of *Sphaeridium* Fabricius.

1. Pronotal hind angle ca 90° (fig. 1). Side-margin of pronotum yellow. Male parameres smooth 2
— Pronotal hind angle greater than 90° (fig. 3). Side-margin of pronotum yellow or black. Male parameres smooth or striolate 3

2. Elytral strial punctures distinct (fig. 9), especially near the side-margin; elytral surface with obsolete reticulation or smooth between the punctures. Female: sutural line continued around apex (fig. 5). Male: enlarged fore-tarsal claw relatively small compared with *marginatum* (figs. 2 and 4) ..... *bipustulatum* Fabricius
— Elytral strial punctures obsolete or absent; elytral surface with distinct reticulation between punctures. Female: sutural line not continued around apex (fig. 6). Male: enlarged fore-tarsal claw more robust than in *bipustulatum* (compare figs. 4 and 2) ..... *marginatum* Fabricius

3. Elytron with distinct strial punctures; elytral surface smooth between punctures. Pronotum mostly black, or side-margins yellow. Small species. Male parameres striolate ..... *substriatum* Faldermann
— Elytron without larger strial punctures; elytral surface especially towards the apex with obsolete reticulation between punctures. Pronotum mostly with yellow side-margin or black. Large species. Parameres smooth 4

4. Anterior margins of elytra and scutellum in dorsal view not in a straight line, shoulders slightly projecting forwards (fig. 7). Pronotum with either lateral margins or anterolateral margins only, mostly yellow. Meso- and metafemora mostly yellow or yellowish red with dark median spot. Male genitalia with acute median lobe ..... *scarabaeoides* (Linnaeus)
— Anterior margins of elytra and scutellum in dorsal view in a straight line (fig. 8). Pronotum black. Meso- and metafemora black. Male genitalia with truncate median lobe ..... *lunatum* Fabricius

Distribution

S. bipustulatum and *S. marginatum* occur in Europe, Northern Africa, the Near East, the Middle East and North America. *S. marginatum* is the commonest species in the Palaearctic region. I have not yet seen enough material to conclude the same for the Nearctic.

Acknowledgments

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