Fossil records of Palaearctic *Pisidium* species in tropical Africa (Bivalvia, Sphaeriidae)

J.G.J. Kuiper

Kuiper, J.G.J. Fossil records of Palaearctic *Pisidium* species in tropical Africa.
Zool. Med. Leiden 83 (10), 9.vii.2009: 593-594, 1 fig.— ISSN 0024-0672.
J.G.J. Kuiper, Zoölogisch Museum Amsterdam, Mauritskade 57, 1092 AD Amsterdam, The Netherlands.

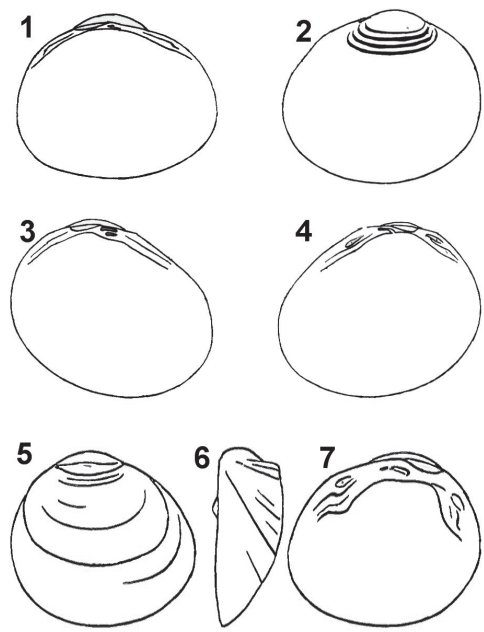
Key words: Ethiopia, Rift Valley, *Pisidium*, Palaearctic, Late Pleistocene, fossil records.
A collection of fossil shells of the genus *Pisidium* sampled in late glacial fluvio-lacustrine deposits in the Rift Valley, Ethiopia, contains four species of Palaearctic origin and two (or perhaps three) African species.

Pisidium species in tropical Africa

One day in May 1976, in my apartment in the village of Garches near Paris, I enjoyed a visit of the charming Ms F. Alayne Street, geography student at the University of Cambridge. She participated in the Cambridge Geographical Exploration Unit of the Rift Valley (Grave et al., 1975) and was able to collect sediment samples containing freshwater molluscs on the NE side of the Shala basin (labelled 0738 B2). The geological age of these sediments is probably Late Pleistocene (9500 to 9000 years old). All specimens mentioned in this article are preserved in the Kuiper collection (now in the Zoölogisch Museum Amsterdam).

The three Pleistocene samples taken by Ms Street consist of about 700 shells and appear to contain at least six species of the genus *Pisidium*. Two of these (and maybe a third, undescribed one) are African, whereas four other species are undoubtedly of Palaearctic origin. The African species are *Pisidium kenianum* Preston, 1911, and at least one still undescribed *Pisidium* species (Kuiper, in prep., awaiting additional records). The second category comprises the following species: *Pisidium moitessierianum* Paladilhe, 1866, *P. milium* Held, 1836, *P. nitidum* Jenyns, 1832, and *P. subtruncatum* Malm, 1855.

Once before, Brown (1973) recorded the presence of fossil specimens of *P. moitessierianum* in Ethiopia. The species



Figs 1-7. *Pisidium* species, Ethiopia, Lake Shala basin. 1, *P. milium*, left valve internal view, length 2.7 mm. 2, *P. nitidum*, left valve external view, length 3.5 mm. 3-4, *P. subtruncatum*, left and right valves internal view, length 2.7 mm. 5-7, *P. moitessierianum*, right valve, external view, diameter and internal view, respectively, length 1.55 mm.

is not known from other parts of Africa. In the northern area of the Mediterranean it is rare, occurring from Spain to Turkey. In central Europe it is rather common, mainly in lacustrine habitats. The Ethiopian form (figs 5-7) has a broad, solid hinge. Its shape is more rounded than in the typical form.

The other three Palaearctic species still occur on the North African coastal plains of Algeria and Morocco (Kuiper, 1966).

Pisidium milium has been collected as *P. landeroini* Germain, 1909, in sediments of the Begour crater in the Tibesti Mountains, Sahara (Kuiper, 1961). The somewhat oval outline of the Ethiopian specimens (fig. 1) is clearly different from the northern rectangular forms, but the position of the two adductor scars makes them specifically recognizable (Kuiper, 1966: 53)

Pisidium nitidum (fig. 2) is absent in the early Holocene layers but numerous in late Pleistocene sediments. Their shells are often damaged, but are recognizable by the ribs and the glossy beaks.

Pisidium subtruncatum (figs 3-4) was collected in a series of possible Pleistocene age, in lacustrine deposits along the Bulbula River, which runs from Lake Ziway into Lake Abigata in the Galla lakes basin (labeled 0738 B19, profile 1).

The presence of Palaearctic fossil freshwater bivalves in the Rift Valley demonstrates a former climatic change in that region.

Acknowledgements

This paper is dedicated to Dr Dolf van Bruggen on the occasion of his 80th birthday.

Thanks are due to Ms F. Alayne Street for making these interesting samples available, to Mike Filmer for revising the English text and to Leon Hoffman and Robert G. Moolenbeek for preparing the plate.

References

Brown, D.S., 1973. The Palaearctic elements in late Quaternary lake fauna of Southern Ethiopia.— Journal of Conchology 28: 79-80.

Grave, A.T., F.A. Street & S. Gouldin, 1975. From lake levels and climatic changes in the Rift Valley of southern Ethiopia.— Geographical Journal 141: 177-201, pls VI-VII.

Kuiper, J.G.J., 1961. Étude critique de *Pisidium landeroini* Germain, *P. giraudi* Bourguignat et *P. hermosum* Bourguignat.— Journal de Conchyliologie 101: 87-97, figs 1-31.

Kuiper, J.G.J., 1966. Les espèces africaines du genre *Pisidium*, leur synonymie et leur distribution.— Annales du Musée royal de l'Afrique Centrale, série in-8, Sciences Zoologiques 151: 1-78, pls 1-15.

Kuiper, J.G.J., 1968. On *Pisidium pirothi* Jickeli from Lake Chad.— Journal of Conchology 26: 225-228, figs 1-4.

Received: 26.iii.2009
Accepted: 6.v.2009
Edited: A.S.H. Breure