Zootaxa 3889 (4): 553–573
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3889.4.4
http://zoobank.org/urn:lsid:zoobank.org:pub:1302D1EE-F030-45A1-A126-D08CC55CF33B

Afroleius floridus (Mahunka, 1985) comb. nov. and three new *Afroleius* Mahunka, 1984 species (Acari: Oribatida: Mycobatidae) from South Africa

LOUISE COETZEE[1,2]

[1]*National Museum, Bloemfontein, South Africa. E-mail: louise.coetzee@nasmus.co.za*
[2]*Dept. of Zoology & Entomology, University of the Free State, Bloemfontein, South Africa*

Abstract

Three new species of the genus *Afroleius* Mahunka, 1984 are described: *A. amieae* **sp. nov.** with round notogastral foveae and long rostral and lamellar setae, *A. inae* **sp. nov.** with long lamellae and rostral and lamellar setae of similar length, and *A. valerieae* **sp. nov.** with ventrally directed bothridium and octotaxic system consisting of porose areas. *Magyaria florida* Mahunka, 1985 is recombined in the genus *Afroleius* as *A. floridus* **comb. nov.** Juvenile instars of *A. floridus* **comb. nov.** are described.

Key words: Acari, Oribatida, Mycobatidae, *Magyaria*, *Afroleius*, Juvenile instars, South Africa

Introduction

During the 1980s Dr. Sándor Mahunka (Hungarian Natural History Museum, Budapest) described a number of oribatid species from South Africa which he obtained from material collected by Dr. S. Endrődi and Dr. S. Endrődy-Younga (Mahunka 1984, Mahunka 1985a, Mahunka 1985b, Mahunka 1986a, Mahunka 1986b). The majority of samples were collected in the Western Cape (Nature's Valley and the environs of Cape Town) in the Fynbos Biome of South Africa (Mucina & Rutherford 2006, Van As *et al*. 2012). Nature's Valley lies in the heart of pockets of Southern Afrotemperate forests (Mucina & Rutherford 2006), remnants of which stretch along the southern coastline of South Africa. The area around Cape Town is devoid of forests and the vegetation is characterized by fine-leaved, evergreen shrubs (Van As *et al*. 2012).

From these Nature's Valley Oribatida he described *Afroleius* Mahunka, 1984, with three species. Mahunka (1984) placed the genus in the family Haplozetidae and remarked that it resembles *Magyaria* Balogh, 1963. Differences between *Magyaria* and *Afroleius* as pointed out by Mahunka (1984) were the presence of four pairs of genital setae and the monodactylous state of the ambulacra in *Magyaria*, while *Afroleius* has six pairs of genital setae and the ambulacra are tridactylous. Five new species have since been added to the genus (Coetzee 2013, Coetzee 2014), and its relationship has provisionally been changed to the family Mycobatidae (Coetzee & Tiedt 2013). No juveniles were known at the time.

Mahunka (1985b) also described *Magyaria florida* from the Tsitsikamma Mountains. A reexamination of this species indicated its closer relationship to the genus *Afroleius* and it is recombined here to the genus as *A. floridus* **comb. nov.** This species occurs commonly in the southern regions of the Western and Eastern Cape provinces of South Africa, particularly in forests and along forest edges.

Species of *Afroleius* are widespread in South Africa, particularly in the eastern regions, and more new species have been discovered. Juveniles of *A. floridus* **com. nov.** have also been found. In this paper *A. floridus* **comb. nov.** is redescribed based on adults and juvenile instars, and three new species, *A. amieae* **sp. nov**., *A. inae* **sp. nov.** and *A. valerieae* **sp. nov.**, are described.

This work forms part of a comprehensive study of *Afroleius* in South Africa. A key to all known species and additional notes on the genus will be presented in a follow-up publication.

Accepted by E. Sidorchuk: 28 Oct. 2014; published: 3 Dec. 2014

Subías, in the 2014 electronic update of his oribatid mite catalog (Subías 2004, 2014), includes *Afroleius* in the family Humerobatidae, but without any explanation. This placement is rejected because of the absence of microsclerites on the gastronotum of juveniles of *Afroleius*. The presence of microsclerites as well as macrosclerites on the gastronotum of immatures of *Humerobates rostrolamellatus* Grandjean, 1936 prompted Grandjean (1970) to institute the family Humerobatidae to accommodate this genus. Species in Humerobatidae are associated with living plants and are rarely found in litter (Norton & Behan-Pelletier 2009).

Acknowledgements

I would like to extend my sincere appreciation and gratitude to Dr. Valerie Behan-Pelletier (Agriculture & Agri-food Canada, Ottawa) for guidance and generous sharing of knowledge. I would also like to thank my colleague Dr. Lizel Hugo-Coetzee for help with extractions and general support, my sister Ina Engelbrecht for mailing me parcels of soil from the Knysna area and Dr. Louwrens Tiedt (North West University, Potchefstroom) for SEM images.

References

Balogh, J. (1958) Oribatides nouvelles de l'Afrique tropicale. *Revue de Zoologie et de Botanique Africaines*, 58, 1–34.

Balogh, J. (1963) Oribates, Acari, nouveaux d'Angola et du Congo. *Publicações culturais da companhia de diamantes de Angola*, Série 3, 33–48.

Balogh, J. (1970a) New oribatids (Acari) from new Guinea. III. *Acta Zoologica Academiae Scientiarum Hungaricae*, 14, 291–344.

Balogh, J. (1970b) New oribatids (Acari) from Ceylon. The Scientific Results of the Hungarian Soil Expeditions. *Opuscula Zoologica*, *Budapest*, 10, 33–67.

Balogh, J. & Mahunka, S. (1974) Oribatid species (Acari) from Malaysian soils. *Acta Zoologica Academiae Scientiarum Hungaricae*, 20, 243–264.

Behan-Pelletier, V.M. (1986) Ceratozetidae (Acari: Oribatei) of the western North American Subarctic. *The Canadian Entomologist*, 118, 991–1057.
http://dx.doi.org/10.4039/ent118991-10

Behan-Pelletier, V.M., Eamer, B. & Clayton, M. (2001) Mycobatidae (Acari: Oribatida) of Pacific Northwest canopy habitats. *The Canadian Entomologist*, 133, 755–775.
http://dx.doi.org/10.4039/ent133755-6

Berlese, A. (1908) Elenco di generi e specie nuove di Acari. *Redia*, 5, 1–15.

Coetzee, L. (2013) New species of the genus *Afroleius* Mahunka, 1984 (Acari, Oribatida, Mycobatidae) from South Africa. *Acta Zoologica Academiae Scientiarum Hungaricae*, 59, 307–319.

Coetzee, L. (2014) Rare new species of the genus *Afroleius* Mahunka, 1984 (Acari, Oribatida, Mycobatidae) from South Africa. *Navorsinge van die Nasionale Museum,* 30 (5), 71–85.

Coetzee, L. & Tiedt, L.R. (2013) Overview of the genus *Afroleius* Mahunka, 1984 (Acari, Oribatida). *In*: Schausberger, P. (Ed.), Acari in a Changing World: Proceedings of the 7th Symposium of EURAAC, Vienna, 2012. *Acarologia*, 53, pp. 163–173.
http://dx.doi.org/10.1051/acarologia/20132085

Corpuz-Raros, L.A. (1979) Philippine Oribatei (Acarina) I. Preliminary list of species and descriptions of forty new species. *The Philippine Agriculturalist*, 62, 1–82.

Corpuz-Raros, L.A. (1991) Philippine *Magyaria* Balogh (Acari, Oribatida, Haplozetidae) with a key to known world species. *The Philippine Entomologist*, 8, 973–983.

Grandjean, F. (1936) Les oribates de Jean Frédéric Hermann et de son père. *Annales de la Sociét Entomologique de France*, 105, 27–110.

Grandjean, F. (1970) Nouvelles observations sur les Oribates. *Acarologia*, Série 8e, 12, 849–876.

Hammer, M. (1979) Investigations on the Oribatid Fauna of Java. *Det Kongelige Danske Videnskabernes Selskab Biologiske Skrifter*, 22, 1–79.

Hull, J.E. (1916) Terrestrial Acari of the Tyne Province. *Transactions of the Natural History Society of Northumberland*, 4, 381–423.

Mahunka, S. (1978) Neue und interessante Milben aus dem Genfer Museum (XXVII). A first survey of the Oribatid (Acari) fauna of Mauritius, Reunion and the Seychelles I. *Revue suisse Zoologica*, 85, 177–236.

Mahunka, S. (1984) Oribatids of the eastern part of the Ethiopian Region (Acari) VI. *Acta Zoologica Hungarica*, 30, 393–444.

Mahunka, S. (1985a) Oribatids from Africa (Acari: Oribatida) I. *Acta Zoologica Hungarica*, 31, 295–339.

Mahunka, S. (1985b) Oribatids from Africa (Acari: Oribatida) II. *Folia Entomologica Hungarica*, 46, 73–113.

Mahunka, S. (1986a) Oribatids from Africa (Acari: Oribatida) III. *Folia Entomologica Hungarica*, 47, 41–76.

Mahunka, S. (1986b) Oribatids from Africa (Acari, Oribatida) IV. *Annales Historico-Naturales Musei Nationalis Hungarici*, 78, 301–317.
Mahunka, S. (1988) New and interesting mites from the Geneva Museum LXI. Oribatids from Sabah (East Malaysia) III (Acari: Oribatida). *Revue suisse Zoologica*, 95, 817–888.
Mahunka, S. (2008) A new genus and some other data of oribatids from Thailand (Acari: Oribatida). *Acta Zoologica Academiae Scientiarum Hungaricae*, 54, 125–150.
Michael, A.D. (1884) *British Oribatidae*. *Vol. I*. Ray Society, London, 414 pp.
Mucina, L. & Rutherford, M.C. (2006) *The vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*. South African National Biodiversity Institute, Pretoria, 807 pp.
Niemi, R. & Behan-Pelletier, V.M. (2003) *Nuhivabates* n. gen., and two new species, *N. nukuhiva* n. sp. and *N. hivaoa* n. sp. from Marquesas Islands (Acari: Oribatida: Mycobatidae). *Acarologia*, 44, 73–85.
Norton, R.A., Alberti, G., Weigmann, G. & Woas, S. (1997) Porose integumental organs of oribatid mites (Acari, Oribatida). 1. Overview of types and distribution. *Zoologica*, 48, 1–31.
Norton, R.A. & Behan-Pelletier, V.M. (2009) Suborder Oribatida. *In*: Krantz, G.W. & Walter, D.E. (Eds.), *A manual of Acarology. 3rd Edition*. Texas Tech University Press, Lubbock, pp. 430–564.
Norton, R.A. & Ermilov, S.G. (2014) Catalogue and historical overview of juvenile instars of oribatid mites (Acari: Oribatida). *Zootaxa*, 3833 (1), 1–132.
http://dx.doi.org/10.11646/zootaxa.3833.1.1
Pavlitshenko, P.G. (1993) A new genus for a new oribatid mite species (Oribatei, Ceratozetoidea) from the Ukraine. *Vestnik Zoologii*, 5, 74–77. [in Russian]
Pérez-Íñigo, C. (1981) Resultados de la expedición Peris-Alvarez a la isla de Annobón (13) Oribatid mites. *Eos*, Series 2, 57, 201–212.
Pérez-Íñigo, C. (1983) Resultados de la expedición Peris-Alvarez a la isla de Annobón (13) Oribatid mites. *Eos*, Series 4, 59, 193–205.
Seniczak, S. & Seniczak, A. (2008) Morphology of three European species of the genus *Punctoribates* Berlese, 1908 (Acari: Oribatida: Mycobatidae). *Annales Zoologici*, 58, 473–485.
http://dx.doi.org/10.3161/000345408x364328
Shaldybina, E.S. (1973) Novye vidy pantsirnykh kleshchei podsemeistva Minunthozetinae (Oribatei, Mycobatidae) s territorii Sovetskogo Soyuza. *Zoologicheskii Zhurnal*, 52, 689–699.
Subías, L.S. (2004) Listado sistemático, sinonímico y biogeográfico de los ácaros oribátidos (*Acariformes*: *Oribatida*) del mundo (1758–2002). *Graellsia*, 60, 3–305.
http://dx.doi.org/10.3989/graellsia.2004.v60.iextra.218
Subías, L.S. (2014) Listado sistemático, sinonímico y biogeográfico de los ácaros oribátidos (*Acariformes*: *Oribatida*) del mundo (1758–2002). *Graellsia*, 60, 3–305. Electronic update 2014. Available from: http://escalera.bio.ucm.es/usuarios/bba/cont/docs/RO_1.pdf (accessed 6 March 2014)
Van As, J., du Preez, J., Brown, L. & Smit, N. (2012) *The story of life and the environment – an African perspective*. Struik Nature, Cape Town, 456 pp.
Willmann, C. (1928) Die Oribatidenfauna nordwestdeutscher und einiger süddeutscher Moore. *Abhandlungen des Naturwissenschaftlichen Vereins zu Bremen*, 27, 143–176.