



Redescription of the fossil oribatid mite *Scutoribates perornatus*, with implications for systematics of Unduloribatidae (Acari: Oribatida)

EKATERINA A. SIDORCHUK¹ & ROY A. NORTON²

¹Paleontological Institute, Russian Academy of Sciences, Moscow 117997, Russia. E-mail: e.a.sidorchuk@gmail.com

²State University of New York, College of Environmental Science and Forestry, Syracuse, N.Y., U.S.A. E-mail: ranorton@esf.edu

Abstract

The monotypic oribatid mite genus *Scutoribates* Sellnick, 1918 has been based only on fossil specimens of the type species—*S. perornatus* Sellnick, 1918—from Baltic amber. The type specimen is lost, and the genus has been assumed to be a junior subjective synonym of *Eremaeozetes* (Eremaeozetidae). Herein, we redescribe *S. perornatus* based on stereo- and compound-microscopy of embedded fossils at magnifications up to 1000X, and both direct observation and electron microscopy of removed cuticular fragments. Specimens included 52 non-type adult fossils from Eocene (Baltic and Rovno) amber, several of which had been studied and identified by Sellnick. One of the latter, housed in the Kaliningrad Museum of Amber (KMA; № 197-07), is designated neotype. A presumed tritonymph is also described. While *Scutoribates* and *Eremaeozetes* share certain aspects of facies, the genera are clearly not synonyms. Rather, *Scutoribates* is a senior subjective synonym of two monotypic extant genera currently included in different families: *Kunstella* Krivolutsky, 1974 in Oribatellidae and *Koreoribates* Choi, 1994 in Unduloribatidae (new synonymies). We show that Unduloribatidae is the appropriate family and list characters that distinguish the three known species of *Scutoribates*: *S. perornatus* Sellnick, *S. foliatus* (Choi) n. comb. and *S. foveolatus* (Krivolutsky) n. comb. The transfer of *Scutoribates* from Eremaeozetidae removes the only presumed tropical element from the oribatid fauna of Baltic amber. We also designate a neotype (№197-24 in the KMA) for the amber fossil species *Tectoribates parvus* Sellnick 1931; however, the currently used combination of *Unduloribates parvus* needs confirmation.

Key words: Oribatida, *Scutoribates perornatus*, *Unduloribates*, *Eremaeozetes*, *Kunstella foveolata*, *Koreoribates foliatus*, *Tectoribates parvus*, Eocene, Baltic amber, Rovno amber, fossil, neotype

Introduction

The efforts of Max Sellnick (1918, 1931) to name and describe oribatid mites (Acari: Oribatida) from Baltic Eocene amber remain the most comprehensive part of our knowledge about the mite fauna in this fossil resin. Together his papers contain descriptions of 54 species and seven genera, plus redescription of three previously known species and notes on 10 recent or undeterminable genera and 11 "formae fossilis" of presumably recent species. Sellnick's work was based on two amber collections: (a) that of Königsberg (now Kaliningrad) University (Sellnick 1918), which contained all the type specimens of species described in 1918; and (b) that of Fritsch (Sellnick 1931), which was the source for the type specimens of species described in 1931 and which also contained many identified specimens of species described by Sellnick in 1918.

After major changes in the classification of Oribatida during the 20th century, some of Sellnick's taxa clearly needed revision and redescription, but work was greatly impeded by the rather imprecise (by today's standards) descriptions and illustrations, and especially by the unknown fate of his type materials. At least the latter problem has improved in recent years. Some types, including those of all species described in 1918, were almost certainly destroyed after World War II, along with the main part of the amber collection of Königsberg University (E.E. Ezhova, pers. comm. 2010). But part of the material from his 1931 study was rediscovered and consolidated and is now stored in two museums in Kaliningrad (formerly Königsberg) (Ezhova 1995, 2010; Ezhova & Kostyashova 1997). These latter collections contain type specimens of at least