

Fossil Bibionidae (Insecta: Diptera) from the Eocene of Grube Messel, Germany

[Fossile Bibionidae (Insecta: Diptera)
aus dem Eozän der Grube Messel, Deutschland]

by

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Abstract

Six fossil specimens of *Plecia* WIEDEMANN, 1828 were found in Grube Messel, a widely known Eocene locality. A male and a female were identified as *Plecia hoffeinsorum* SKARTVEIT, 2009, a species originally described from Baltic amber, which is the first record of a Baltic amber species in Grube Messel. Another female is either close to or conspecific with *Plecia acourti* COCKERELL, 1921, a species previously known from the late Eocene of Isle of Wight (United Kingdom). The remaining three specimens are likely to belong to an undescribed species, which we hesitate to name here as our material is in too poor a condition.

Key words

Bibionidae, *Plecia*, fossils, Eocene, Germany, Grube Messel

Zusammenfassung

Sechs fossile Exemplare der Gattung *Plecia* WIEDEMANN, 1828 wurden in der Grube Messel, einer weithin bekannten eozänen Fundstelle, gefunden. Je ein Männchen und Weibchen wurden als *Plecia hoffeinsorum* SKARTVEIT, 2009 bestimmt, eine ursprünglich aus dem Baltischen Bernstein beschriebene Art. Dies ist der erste Nachweis einer Spezies aus dem Baltischen Bernstein in der Grube Messel. Ein anderes Weibchen ist entweder nahe verwandt oder konspezifisch mit *Plecia acourti* COCKERELL, 1921, einer Art, die bislang aus dem späten Eozän der Isle of Wight (Großbritannien) bekannt ist. Drei weitere Exemplare gehören wahrscheinlich zu einer unbeschriebenen Art, die wir hier aber nicht benennen, weil unser Material in einem zu schlechten Zustand ist.

Stichwörter

Bibionidae, *Plecia*, Fossilien, Eozän, Deutschland, Grube Messel

Introduction

The former volcanic maar lake Grube Messel, Hesse, Germany has yielded an array of amazingly well preserved fossil specimens from the early middle Eocene (approximately 47 MA BP, LENZ et al. 2015). The site is famous for its extraordinarily well preserved fossils of early mammals (e. g. FRANZEN 2007, FRANZEN et al. 2009), but has also supplied a huge number of fossil insect specimens (e. g. LUTZ 1990, WEDMANN 2005, DLUSSKY & WEDMANN 2012). Presently, the Senckenberg collection of Messel insects comprises over 16,500 fossils, some of them unusually well preserved, e. g. jewel beetles and moths, with more or less original structural colours (HÖRNSCHEMEYER & WEDMANN 1994, McNAMARA 2013) and the first known fossil leaf insect (WEDMANN et al. 2007).

Flies are often among the most abundant insects in Tertiary fossiliferous sediments (e. g. HEER 1849, THÉOBALD 1937, STATZ 1943, WEDMANN 1998). During swarming, flies often end up caught in water and they are often abundant in lacustrine deposits. However, in the insect taphocoenosis of Messel, bibionids are extremely rare, and generally all fossils of flies and midges are very rare in Messel. The six specimens recorded here are until now the only bibionids from Messel. This is most likely due to taphonomic processes, perhaps connected to Messel being a former maar lake.