2.86 Brachycera in Baltic amber – Insecta: Diptera

The superfamily Empidoidea encompasses the families Empididae (dance flies) and Dolichopodidae (long-legged flies), both of which occur with great regularity in Baltic amber. The phylogenetic relationships and monophylety of the two taxa are still unclear. In particular, it cannot be ruled out that several subfamilies of the Empididae are more closely related to the Dolichopodidae than others. All subfamilies of the Empididae are represented in amber: Microphorinae, Atelestinae, Ocydromiinae, Hybotinae (Neozinae), Tachydromiinae (Corynetinae), Hemerodromiinae (+ Clinoceratinae, Ceratomerinae, Homalocerinae) and Empidinae (Hennig 1973). The Atelestinae have already been reported from Lower Cretaceous Lebanese amber on the basis of *Tricinites cretaceus* (Hennig 1970), *Atelestites senectus*, and *Phaetempis lebanensis* (Grimaldi & Cumming 1999), as well as from Canadian and New Jersey ambers (Grimaldi & Cumming 1999). Most Dolichopodidae families have also been confirmed for Baltic amber. The revision of the amber flies of both family groups will continue to be a primary objective of amber research, until more detailed knowledge of the Empididae and Dolichopodidae of Baltic amber helps unravel the phylogenetic relationships within the superfamily.

The Bombyliidae, or bee flies, are represented in Baltic amber by the Bombyliinae *(Paracorsomyza)*, Cyrtosiinae *(Proplatypygus, Proglabellula)* and Cylleniinae *(Palaeoamictus, Amictites, Glaesamictus)* (Hennig 1966 b, 1967 c, 1969). These groups are also the oldest fossil records of the Bombyliidae.

The Bombyliidae are cosmopolitan insects that occur all over the world, except in the cold regions of the southern and northern hemispheres. They are most diverse in the temperate zones, as is *Proglabellula* and its related genera from Baltic amber. In contrast, the amber genus *Paracorsomyza*, with the species *Paracorsomyza crassirostris* (Loew, 1850), is most closely related to the exclusively South African group *Corsomyza*, with its roughly 40 species (Fig. 93).

Due to the fact that the phylogenetic system of the Bombyliidae has long been incomplete, and the classification of the subfamilies of a preliminary nature (Mühlenberg 1971, Hennig 1973), it was previously difficult to assign fossil specimens to related, extant forms and to evaluate their associated biogeography. However, the recent cladistic studies by Yeates (1992, 1994) have opened the door for detailed studies of the fossil Bombyliidae.

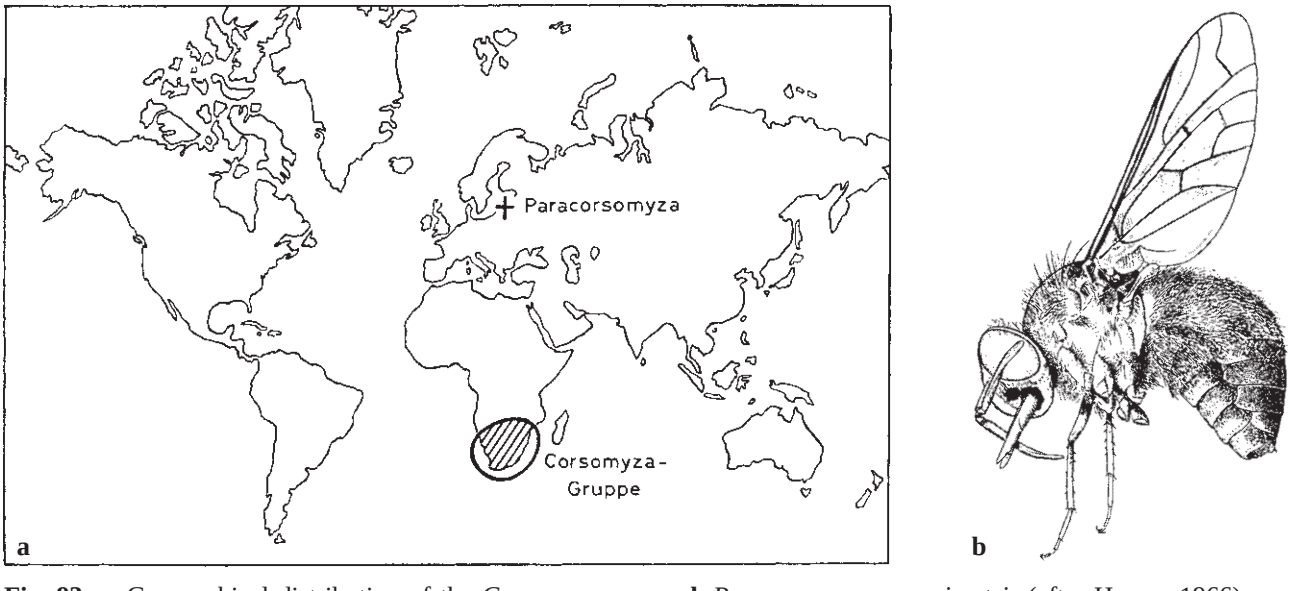

Fig. 93: **a** Geographical distribution of the *Corsomyza* group, **b** *Paracorsomyza crassirostris* (after Hennig 1966).

Plate 86: Flies (Insecta: Diptera) in Baltic amber VII.

a Empididae: Dance fly, × 10.
b Empididae: Head with eye and mouthparts, × 21.
c Empididae: Dance fly, × 11.
d Empididae: Head with eyes and antennae, × 23.
e Dolichopodidae: Long-legged flies mating, × 10.
f Empididae (Hybotinae): Dance fly, × 10.
g Dolichopodidae: Long-legged fly, × 10.
h Dolichopodidae: Head with green eyes, × 22.


a


b


c


d


e


f


g


h