

## Family SIMULIIDAE

Members of the cosmopolitan family Simuliidae, most often commonly called black flies, typically occur in association with swift moving streams. Female adults of extant forms are notorious in some parts of the world for their voracious blood-feeding habits of birds and mammals. Some species are vectors of various filarial, protozoan, and viral diseases. Immature stages are aquatic with larvae and pupae usually attached to submerged substrates.

The oldest confirmed example of Simuliidae is a named, but undescribed species from Brazil (Vulcano, 1985). A paper by Zhang (1986*b*) described a putative simuliid fossil from the Jurassic of Hebei, China. Kalugina (1991) described a few more fossils of Simuliidae from the Jurassic/Cretaceous boundary of Siberia. Other undetermined material not listed below includes a *Simulium*-like specimen from the Cretaceous amber of Lebanon (Poinar, 1992: 176), specimens from the Miocene Bitterfeld amber of Germany (Schumann & Wendt, 1989: 41), material from the Oligocene of Colorado (Cuffey *et al.* (1982: 120), and a record of the family from the Oligocene/Miocene amber of the Dominican Republic Poinar (1992: 286).

Undetermined examples of a poorly preserved adult and two larvae originally have been identified as simuliids from the Lower Cretaceous of southern Australia (Jell & Duncan, 1986: 181). The wing of one of these specimens has been presumed by Szadziewski (1990) to possibly be a member of the genus *Austroconops* in the Ceratopogonidae.

The Jurassic species *Simulimima grandis* Kalugina (originally described in the Eoptychopteridae) has been restudied by Crosskey (1991) who concluded that it was a simuliid. Interestingly, it has some characters resembling the limoniid genus *Antocha* Osten Sacken, and other characters that place it in Simuliidae. It is provisionally placed in this catalog in the Simuliidae pending further study and comparison with representatives of the Limoniidae.

The enigmatic species *Pseudosimulium humidum* Westwood has been examined by Craig (1977), who stated that it is probably a ceratopogonid. Szadziewski (1988) mentioned that Grogan (*in litt.*) does not think that it is a ceratopogonid, but did not specify a family placement. It is listed in this catalog under Unplaced Nematocera until further studies can be conducted on the type specimen to verify its familial placement.

Currie & Walker (1992) discussed the paleohydrologic and paleoecological significance of fossil and subfossil simuliid larvae recovered from lacustrine deposits of British Columbia.

Ref.: Crosskey (1991, review of *Simulimima*).

**Genus BAISOMYIA Kalugina**

**BAISOMYIA** Kalugina, 1991: 76 (1992: 73). Type species: *Baisomyia incognita* Kalugina, 1991, by original designation.

**incognita** Kalugina, 1991: 76 (1992: 74). PA: Russia (Siberia) (Lower Cretaceous) [C].

**Genus CRETACEOSIMULIUM Vulcano**

*CRETACEOSIMULIUM* Vulcano, 1985: 107. Unavailable name. Proposed after 1930 without diagnosis, indication, or description.

*araripense* Vulcano, 1985: 107. *Nomen nudum*.

**Genus ECTEMNIA Enderlein**

\***ECTEMNIA** Enderlein, 1930: 88. Type species: *Cnetha taeniatifrons* Enderlein, 1925, by original designation.

**cerberus** Enderlein, 1921: 75 (*Nevermannia*). PA: Baltic Region (Eocene/Oligocene) [A].

**Genus GYDARINA Kalugina**

**GYDARINA** Kalugina, 1991: 76 (1992: 74). Type species: *Gydarina karabonica* Kalugina, 1991, by original designation.

**karabonica** Kalugina, 1991: 77 (1992: 75). PA: Russia (Siberia) (Lower Cretaceous) [C].

**Genus KOVALEVIMYIA Kalugina**

**KOVALEVIMYIA** Kalugina, 1991: 72 (1992: 70). Type species: *Kovalevimyia lacrimosa* Kalugina, 1991, by original designation.

**lacrimosa** Kalugina, 1991: 72 (1992: 70). PA: Russia (Siberia) (Upper Jurassic/Lower Cretaceous) [C].

**Genus SIMULIUM Latreille**

\***SIMULIUM** Latreille, 1802: 426. Type species: *Rhagio colombaschensis* Fabricius, 1787, by monotypy.

**affine** Meunier, 1907*b*: 397. PA: Baltic Region (Eocene/Oligocene) [A].  
*meunieri* Smart, 1944: 133 (unnecessary new replacement name for *affinis* Meunier). PA: Baltic Region (Eocene/Oligocene) [A].

**importunum** Meunier, 1907*b*: 398. PA: Baltic Region (Eocene/Oligocene) [A].

**oligocenicum** Rubtsov, 1936: 353. PA: Baltic Region (Eocene/Oligocene) [A].

**pulchellum** Meunier, 1907*b*: 397. PA: Baltic Region (Eocene/Oligocene) [A].

Unidentified sp.—PA: UK (England) (Pleistocene) [C] (Crosskey & Taylor, 1986: 401).

Unidentified sp.—PA: Sicily (Miocene) [A] (Guérin-Méneville, 1838*a*: 170).

**Unplaced Species in SIMULIIDAE**

**brevirostris** Kalugina, 1986: 125 (“Simuliites”). PA: Mongolia (Upper Jurassic/Lower Cretaceous) [C].

**Questionably Included in SIMULIIDAE****Genus MESASIMULIUM Zhang**

**MESASIMULIUM** Zhang, 1986*b*: 81. Type species: *Mesasimulium lahaigouense* Zhang, 1986, by original designation.

**lahaigouense** Zhang, 1986*b*: 81. PA: China (Upper Jurassic) [C].

**Genus SIMULIMIMA Kalugina**

**SIMULIMIMA** Kalugina in Kalugina & Kovalev, 1985: 43. Type species: *Simulimima grandis* Kalugina, 1985, by original designation.

**grandis** Kalugina in Kalugina & Kovalev, 1985: 44. PA: Russia (Siberia) (Lower/Middle Jurassic) [C].