

The first fossil representative of the dragonfly family Synthemistidae

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Gallosynthemis bechlyi gen. et sp. nov., described from the Paleocene maar of Menat (Puy-de-Dôme, France) is the first ever fossil record of the dragonfly family Synthemistidae. It shows the main synapomorphies of the family, viz. hind wing with 3–5 costal braces (complete antenodal crossveins) alternating with non-aligned antenodals; presence of crossveins in median area and between CuP and PsA; absence of postsubnodal crossveins below first postnodal crossveins; in hind wing, a very large and elongate anal loop without a well-defined mid-rib; and CuAa without posterior branches. It belongs to the stem group of this family and is attributed to its own subfamily Gallosynthemistinae subfam. nov., characterized by a very long stem of hind wing cubitus anterior vein (autapomorphy), plus some symplesiomorphies such as sectors of arculus separated at their bases. While extant Synthemistidae sensu Bechly (2016) are Australasian, the present new taxon demonstrates that the family may have been much more widespread during the Paleocene. These dragonflies probably became extinct in the Northern Hemisphere in relation with the Cenozoic dramatic episodes of cooling.

Key words: Insecta, Odonata, Anisoptera, Libelluloidea, new taxa, Paleocene, Menat, France.

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