Sinaktassia tangi, a new Chinese Mesozoic genus and species of Aktassiidae
(Odonata: Petaluroidea)

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Although the Petalurida make up what is probably one of the most inclusive anisopteran clades (Bybee et al., 2008; Dumont et al., 2010), fossils of this group are rarer than other taxa of dragonflies. No Cenozoic and only eight Mesozoic Petalurida have been described from Europe, Central Asia, China, and South America (Nel & Paicheler, 1992; Nel et al., 1998, 2001; Petrulevičius & Nel, 2003; Huang et al., 2006). The Aktassiidae Pritykina, 1968 is a strictly Mesozoic family divided into the two subfamilies Aktassiinae Nel et al., 1998 (Middle-Late Jurassic), and Pseudocymatophlebiinae Nel et al., 1998 (Early Cretaceous).

Here we describe a new well-preserved fossil of Petalurida attributable to a new genus and species of the family Aktassiidae from the Early Cretaceous Yixian Formation, Western Liaoning, China. This fossil is the most recent representative of the Aktassiinae. The genus Aktassia is known from the Jurassic of Mongolia, Chinese Inner Mongolia (Nel et al., 1998; Huang et al., 2006), and Kazakhstan (Pritykina, 1968).

The nomenclature of the dragonfly wing venation used in this paper is based on the interpretations of Riek (1976) and Riek & Kukalová-Peck (1984), as amended by Nel et al. (1993) and Bechly (1996). The higher classification of fossil and extant Petalurida is based on Nel et al. (1998).

Systematic palaeontology

Order Odonata Fabricius, 1793
Superfamily Petaluroidea Needham, 1903
Family Aktassiidae Pritykina, 1968
Subfamily Aktassinae Nel et al., 1998

Type genus. Aktassia Pritykina, 1968, other included genera: Aeschnogomphus Handlirsch, 1906, Sinaktassia gen. nov.

Genus Sinaktassia gen. nov.

Type species. Sinaktassia tangi sp. nov.

Etymology. A combination of the Latin name ‘Sinica’ for China and the name of the closely related genus Aktassia. Gender feminine.

Diagnosis. Forewing characters only; hind wing unknown. Wing falcate, slender, and longer than 80 mm; postnodal space very narrow, with many cells distal of Pt; Pt elongate; pterostigmal brace present and shifted slightly basal to Pt; IR1 basally strongly zigzagged, long; only one row of cells between RA and RP1 at level of Pt; space between RP1 and RP2 greatly expanded, with more than 8-9 rows of cells; PsA hypertrophied; subdiscoidal triangle widened. T transverse; subdiscoidal triangle divided by cross-veins; more than two rows of cells in basal part of postdiscoidal area between level of distal angle of T and level of midfork; groups of cells and secondary veins in areas between main veins; Bqs-area (‘bridge-space’) narrowed; distal side of T not angulated; only three rows of cells in postdiscoidal area just distal of T; no