

## ***Rhyothemis variegata* (Odonata: Libellulidae) new to Afghanistan**

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**Abstract.** In recent decades little has been added to the Odonata fauna of Afghanistan. This is mainly due to inaccessibility resulting from ongoing conflict in the country. Nevertheless, a few Ukrainian scientists have recently visited the country mainly to study Lepidoptera and Coleoptera. During one expedition in the Kabul valley near Jalalabad about a dozen individuals of *Rhyothemis variegata* were observed and three voucher specimens were captured.

Further key words. Dragonfly, Anisoptera, faunistics, monsoon, new record

## Matutinal and vespertine reproductive behaviour in *Cordulia aenea* (Odonata: Corduliidae)

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**Abstract.** A survey of crepuscular activities in *Cordulia aenea* was carried out at a site in north-western Germany (52.9° N) with an abundant population; this was during the optimal flight season, in favourable weather conditions under a clear sky. Diel activity commenced before sunrise and ceased after sunset. The species therefore belongs to the small group of species exhibiting both matutinal and vespertine activity. Activity during the diurnal period between dawn and dusk never ceased, resulting in a duration of daily flight activity of up to 17 h and 41 min in mid-June. In both twilight periods we predominantly saw patrolling males but also ovipositing females and formation of mating wheels. In the evening, males sometimes briefly interrupted their patrol flight for foraging and feeding. The primary utilization of dawn and dusk for reproductive activities, as occurred in *C. aenea*, is limited among European dragonflies to a small number of aeshnids and corduliids. A 24-hour rhythm of flight activity under the midnight sun, north of the Arctic Circle, is discussed.

Further key words. Dragonfly, Anisoptera, diel activity pattern, crepuscular behaviour, mating tactics, oviposition, patrol flight, midnight sun