

Check-list of Odonata from French Guiana with notes on their distribution, ecology, and new state records

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Abstract. This publication documents the diversity of odonates found in French Guiana and discusses their distribution and ecology. The check-list was created by compiling information from available publications and databases. A total of 292 species belonging to 14 families and 94 genera are listed from the territory. Of these, one family, three genera and 48 species are new records. Four species are considered endemic to French Guiana, and seven known species remain undescribed. For species listed, occurrence by municipality, ecoregion, and known aquatic and terrestrial habitats are noted.

Further key words. Dragonfly, damselfly, South America, Guiana Shield

Richness and structure of an Odonata larval assemblage of a cloud forest stream in western Mexico

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Abstract. Cloud forest in Mexico is an ecosystem largely fragmented and reduced in recent decades by human influence. In this type of vegetation, ravine streams generally contain a particular odonate species composition. We describe the structure, composition, and temporal changes of the Odonata larval assemblage from El Colorín ravine stream in the cloud forest of Chinicuila-Coalcomán region, Michoacán, based on a bi-seasonal sampling 1-year cycle. The assemblage parameters were related to some physicochemical water properties. In total, 17 species were recorded (9 Zygoptera, 8 Anisoptera). Zygoptera was more diverse at supraspecific level with four families vs two of Anisoptera. Six species of Libellulidae were recorded with four species belonging to *Brechmorhoga*. However, the dominant species throughout the year was the calopterygid *Hetaerina capitalis*. Although there were changes in water temperature, pH, conductivity, and oxygen throughout the year, the structural changes of the odonate larval assemblage were more related to seasonality. Also, the Odonata adult assemblage of El Colorín was compared to other adult assemblages from eastern and central Mexico. We propose sub-assemblages of *Brechmorhoga*, *Hetaerina*, and *Archilestes* species as potential indicators of well-conserved conditions of mountain streams.

Further key words. Dragonfly, damselfly, larvae, conservation, diversity, Michoacán

**Biometric differences across three populations
of *Boyeria irene*
from the southern Iberian Peninsula
(Odonata: Aeshnidae)**

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Abstract. *Boyeria irene* is mainly a West Mediterranean species. The instar distribution during winter is that of a ‘summer species’ *sensu* CORBET (1964). Little is known about how the geographical location of the population may affect the biometric peculiarities of *B. irene* larvae. Eight biometric variables were studied in male and female larvae belonging to three southern Iberian populations, with the objective of ascertaining whether there are differences between populations. The southernmost population (Los Alcornocales) shows the largest sizes for most of the variables measured, while the northernmost population (Sierra Madrona) shows the smallest sizes for most of the variables. Winter water temperatures may be the cause of the size divergences, due to a longer arrest in time of larval growth in the northernmost population.

Further key words. Dragonfly, Anisoptera, larval stadia, winter water temperature, Andalusia

Reproductive behaviour, phenology, and reproductive lifespan of *Chalcolestes parvidens* at an intermittent stream on a Greek island (Odonata: Lestidae)

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Abstract. At a summer-dry stream on the Aegean island of Lesbos, a population of *Chalcolestes parvidens* (Artobolevski, 1929) was studied during the reproductive period from late August to November 2018. Mediterranean intermittent streams display unique characteristics with a seasonal sequence of abiotic and biotic regulation and provide valuable habitats for *C. parvidens*. Abundance at the breeding water and perching positions on plants of males, females and pairs were recorded, and a mark-recapture study with 412 males was conducted. The damselflies perched mostly on dry plant parts of *Salix fragilis* and *Nerium oleander* that dominated the site. Males perched mainly on exposed twig tips near or over the water and some individuals were quite philopatric. A minimum adult male life span of 30 days after maturation was determined. Oviposition was observed exclusively in branches of *S. fragilis*. Differences in reproductive behaviour between *C. parvidens* and its sister species *C. viridis* appear to be very small or not distinguishable at all.

Further key words. Dragonfly, damselfly, Zygoptera, mark-recapture study, site fidelity, perching sites, oviposition site selection

Notes on *Cordulegaster kalkmani* in East Turkey (Odonata: Cordulegastridae)

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Abstract. Populations of *Cordulegaster kalkmani* Schneider *et al.*, 2021 were found in the Kars and Bitlis provinces of East Turkey (*i.e.*, western Armenian Highlands), in July 2022. This species was found at elevations from 1 800 to 2 200 m a.s.l. in six localities. One female, 15 males and one exuvia were collected for closer examination. The special feature of the inferior appendage, which is broader than long so that the distal pointed lobes can be seen from above, was confirmed for all males. Variation in abdominal colour markings, some biometrical data and habitat features are reported. *Cordulegaster kalkmani* seems to be restricted to a geographic region limited by the Anatolian Diagonal in the west, the Pontic Mountains in the north, the Lesser Caucasus in the east, and is roughly confined to the western Armenian Highlands in the centre and the eastern Taurus in the south. This region is characterised by cold winters with significant snow cover.

Further key words. Dragonfly, Anisoptera, *Cordulegaster charpentieri*, Anatolian Diagonal, Armenian Highlands, South Caucasus, West Palaearctic

Anax aurantiacus sp. nov., a new dragonfly from mainland Southeast Asia (Odonata: Aeshnidae)

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Abstract. A new species of the genus *Anax*, *A. aurantiacus*, is described and illustrated based on adults of both sexes and exuviae from Thailand. This new species was previously considered by several authors to be a form of *A. immaculifrons* Rambur, 1842, but was never officially described. *Anax aurantiacus* sp. nov. is differentiated from *A. immaculifrons* based on coloration and morphological differences in the adults and larvae. Two species delimitation analyses (ABGD and bPTP) were also carried out, from which can be inferred that *A. aurantiacus* and *A. immaculifrons* were different Molecular Operational Taxonomic Units. Material and images available on internet and literature show the species to be present in Cambodia, Laos, China, Hong Kong, Thailand, and Vietnam, with *A. immaculifrons* occurring in South Asia and further west. *Anax immaculifrons* therefore needs to be deleted from the checklists from Cambodia, Laos, China, Hong Kong, Thailand, and Vietnam, replaced by *A. aurantiacus* sp. nov.

Further key words. Anisoptera, new species, *Anax immaculifrons*, Thailand, larva, distribution