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On the synonymy of *Crocothemis crocea* Navás, 1918, with *Crocothemis servilia* (Drury, 1773), with remarks on Philippine odonates (Odonata: Libellulidae)

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Abstract. No new information on *Crocothemis crocea* has been published since its original description in 1918 based on three females from the Philippines. The original description does not discuss differences between *C. crocea* and other species of *Crocothemis* and the description itself fits well with *C. servilia*, a species common and widespread in the Philippines. It is therefore concluded that *C. crocea* is a junior synonym of *C. servilia*.

Further key words. Dragonfly, Anisoptera, Southeast Asia

Introduction

The first formal descriptions of Odonata were published in 1758 by Carolus Linnaeus (LINNAEUS 1758). These descriptions written in Latin are short, lack comparison with other species and do not contain illustrations. Since then species descriptions have strongly improved and most descriptions made in the 20th century are in English, are illustrated and do compare new species with already described species. The only person in the 20th century who described a substantial number of Odonata in Latin is Longinos Navás. He worked on Plecoptera, Neuroptera, Odonata and Trichoptera and described a large number of new taxa. The quality of his work is generally poor and most of his descriptions are short, lack illustrations and seemingly display a lack of proper overview of the literature. As a result about eighty of his species have been found to be mere synonyms or are regarded as *nomen nudum* (see for example YU & HÄMÄLÄINEN 2021). The latter is due to the fact that the information on the whereabouts of his types is scant with at least a part of the material lost, while at least some material is still found at the Museu de Ciències Naturals de Barcelona (Spain) and the Universidad de Zaragoza (Spain).

Navás described a large number of odonates including ones that actually were new to science and at present the World Odonata List includes 37 apparently valid species described by him (PAULSON *et al.* 2024) although undoubtedly some of these names will eventually prove to be synonyms. One of the names still listed as valid on the World Odonata List is *Crocothemis crocea* Navás, 1918, a species only known from the female sex from Zamboanga, Mindanao, Philippines. The locality is followed by the Latin words ‘*ut arbitror*’ which means something like ‘as I think’

suggesting that the author had some doubt on the origin of the specimens. As this species has not been recorded since its original description we considered it to be a good candidate to be a synonym for which reason we evaluate the status of the species based on the original description.

Original description

The original description is in Latin and is about a page long without figures. The following characters mentioned in the description allow us to rule out all regional genera with the exception of *Crocothemis*: (i) hind lobe of pronotum is described as small; (ii) head, thorax and legs without extensive dark pattern; (iii) 12 Ax in fore wing and 9 Ax in hindwing; (iv) pterostigma large (3.7 mm); (v) wings hyaline but with base of wing with yellow suffusion; (vi) vulvar scale large reaching above sternite nine (in the description termed as the subgenital plate of the eighth sternite). Considering that the species is a *Crocothemis* and assuming that the specimens are indeed from the Philippines then the next step is to attempt to rule out *C. servilia* (Drury, 1773), the only representative of *Crocothemis* found in the Philippines and surrounding areas of Southeast Asia. The description does not provide a comparison with *C. servilia* and none of the characters mentioned is clearly different from *C. servilia*.

Conclusion

The characters provided in the description of *C. crocea* confirm that the species belongs to the genus *Crocothemis* but do not provide any characters allowing it to be differentiated from *C. servilia*. As the latter is common and widespread in the Philippines and as no further evidence of a second species of *Crocothemis* occurring in the Philippines has ever been put forward it seems best to regard *C. crocea* as a synonym of *C. servilia*.

Crocothemis servilia (Drury, 1773), valid name
= *Crocothemis crocea* Navás, 1918 **syn. nov.**

Remarks on Philippine odonates

The most recent synopsis of the Philippine dragonflies and damselflies lists 224 named and 65 to 70 undescribed species (HÄMÄLÄINEN & MÜLLER 1997). Since then, several species were found new to the Philippines and no less than 65 Philippine species were described as new to science, so that at present over 300 named species are known to occur in the Philippines. Numerous species still await description, mostly in the genera *Drepanosticta* (*halterata* group), *Percinemis*, *Oligoaeschna* and *Chlorogomphus* (VAN TOL 2005; VILLANUEVA & DOW 2014). There is a small number of Philippine species known only from the type description in need of re-description. These include *Pseudagrion azureum* Needham & Gyger, 1939, *P. evanidum* Needham & Gyger, 1939, *Paracercion luzonicum* (Asahina, 1968), *Indaeschna baluga* Needham & Gyger, 1937, and *Prothorthemis intermedia* Fraser, 1936.

References

- HÄMÄLÄINEN M. & MÜLLER R.A. 1997. Synopsis of the Philippine Odonata, with lists of species recorded from forty islands. *Odonatologica* 26: 249-315
- LINNAEUS C. 1758. *Systema Naturae*. 10th ed. Laurentius Salvius, Stockholm
- PAULSON D., SCHORR M., ABBOTT J., BOTA-SIERRA C., DELIRY C., DIJKSTRA K.-D.B. & LOZANO F. (Coordinators). 2024. World Odonata List. Odonata-Central, University of Alabama. URL (03.iii.2024): <https://www.odonatacentral.org/app/#/wol/>
- VAN TOL J. 2005. Revision of the Platystictidae of the Philippines (Odonata, excluding the *Drepanosticta halterata* group, with description of twenty-one new species. *Zoologische Mededelingen*, Leiden, 79: 195-282
- VILLANUEVA R.J.T. & DOW R.A. 2014. Review of the Philippine taxa formerly assigned to the genus *Amphicnemis* Selys, II. Genus *Sangabasis* with description of eight new species. *Zootaxa* 3815: 1-28
- YU X. & HÄMÄLÄINEN M. 2021. Longinos Nava's Odonata species from China: Notes on three synonymies in Platynemididae, including the synonymy of *Pseudocopera tokyoensis* (Asahina, 1948). *Odonatologica* 50: 115-129

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