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NOTA / NOTE
On the identity of *Neurothemis tullia* (Drury, 1773) (Odonata: Libellulidae).

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Abstract: This note provides a firm basis for a reliable identification of *Neurothemis tullia* (Drury, 1773) (Odonata: Libellulidae) whose male and female show a substantial disparity making the identification of this taxon somewhat unclear.
Key words: Odonata, Libellulidae, *Neurothemis tullia*, Identity.

Resumen: Sobre la identidad de *Neurothemis tullia* (Drury, 1773) (Odonata: Libellulidae). Esta nota presenta una base firme para una identificación fiable de *Neurothemis tullia* (Drury, 1773) (Odonata: Libellulidae), cuyos machos y hembras muestran apreciables diferencias, lo que no siempre permite una clara identificación de este taxón.
Palabras clave: Odonata, Libellulidae, *Neurothemis tullia*, Identity.

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Introduction

Odonata are divided into two groups, Zygoptera and Anisoptera. Zygopterans are the damselflies, relatively soft bodied, narrow and small. Their head is transverse and eyes are present as lateral projections of the head. They bring their wings together and place them obliquely or nearly vertically over the abdomen. Anisopterans are the dragonflies, relatively robust and usually larger than damselflies. Wings are placed horizontally at rest. The hind wings are larger than the fore wings. The head is large, broad and rounded with large and prominent eyes.

Odonata are considered to be as invasive pest species with large impacts on agricultural crop yields, and understanding their diversity will advance our knowledge about its population ecology, which can be important for developing effective management strategies. Many species are very specific in their requirements but others are generalists and can exist in almost all kind of water bodies, whether acidic, alkaline, brackish, or saline. Rare species frequently live in running water, but some select still waters, swamps and fenlands (Zia, 2010; Zia *et al.*, 2011).

Fraser (1933) studied the Odonata present in the central part of India. Prasad & Varshney (1995) published a checklist of Indian Odonata that included 499 species. Prasad (1996) and Kulkarni *et al.* (2002) reported 84 species from Maharashtra state. Kumar & Prasad (1977) and Gunathilagraj *et al.* (1999) recorded 21 species from paddy fields in Dehradoon valley and Coimbatore respectively. Asaithumbi & Manikararsgam (2002) recorded 10 species of Odonata from paddy fields from Annamalai University area in Tamil Nadu, raising the total to 22 species. Talmale & Kulkarni (2003) collected 8 species from paddy fields of Bhandara district. Kulkarni *et al.* (2004) studied the species present in Pench National Park and Nathsagar wetlands. Tiple *et al.* (2008) recorded 62 species of Odonata from Nagpur city. Andrew *et al.* (2010) collected 23 species also from Nagpur city. More recently, Lakhiar *et al.* (2015) carried out a work on the taxonomy of *Crocothemis servilia servilia* (Drury, 1773) from Pakistan.

As per our knowledge, no substantial information is available on the differences between the males and females of *Neurothemis tullia* (Drury, 1773) from this region. The present work will be useful to distinguish *Neurothemis tullia* from other species.

Material and methods

The survey of Odonata was carried out in marshy places during the months of July 2014 to June 2015. These places are both seasonal and perennial, surrounded by trees, shrubs and grass meadows that are used by these insects for breeding purposes. For this study, the species were caught with insect nets and identified with the help of standard keys and other literature. The material is deposited in the National College of Science (Sindh/Pakistan).

Results

***Neurothemis tullia* (Drury, 1773)** (Figs. 1 & 2)

Material examined: Pakistan: Badin, 12♂♂ and 10♀♀, 19.VII.2014; 4♂♂ and 6♀♀, 7.VI.2015 (A. Lakhiar & W.A. Panhwar leg.).

Measurements: ♂: Abdomen: 17-20 mm, Hind wing: 20-23 mm. ♀: Abdomen: 17-19 mm, Hind wing: 21-23 mm.

Descriptions:

♂: Face: black. Eyes: blackish brown above, violaceous below. Thorax: black with mid dorsal cream stripe. Legs: black. Wings: basal half is opaque blue black bordered by a milky white patch towards the tip. The wing tips are transparent. Wing spot: dull brown. Abdomen: black with a broad mid dorsal creamy white stripe on the upper side.

♀: Differs significantly from the male in body markings and coloration. The face is olivaceous yellow. Eyes: pale brown above, fading to pale olivaceous towards the sides and below. Thorax: greenish yellow with a bright yellow mid dorsal stripe. This stripe is broadly bordered with blackish brown throughout. Legs: the outer surface is yellow and the inner surface is black. Wings: base bright amber yellow. Front edge of the wing is blackish brown, broadening into a very large blackish brown spot. This spot extends to the rear edge of the wing. In the hind wings this spot is irregular or sickle shaped. Tips of all wings are broadly blackish brown. Wing spot: dull brown. Abdomen: bright yellow with a broad black band above. Underside is black.

Comparison: Male and female are completely different in terms of appearance. The adult male's wings have a broad black band followed by a white band. Its body colour varies with age being light brown initially. The females have dark brown tips with brown spots in the middle of their golden wings. Their abdomens are light brown and yellow with black lines running along its length.

Habits and habitat: A conspicuous species of ponds, marshes and paddy fields. Its flight is slow and weak. Usually perches on twigs, aquatic weeds, and other plants. This species is very common along irrigation canals in paddy fields. Breeding: breeds in marshes and ponds. Andrew & Tembhare (1997) stated that this species occurs throughout the year.

Distribution: Oriental region.

References

Andrew, R.J. & Tembhare, D.B. 1997. Collection of Odonata from Nagpur city, Maharashtra State, India. *Fraseria* (N.S.), **4:** 1-4.

Andrew, R.J.; Verma, P. & Thaokar, N. 2010. Field notes on the Odonates at the Grotto tank of Seminari hills, Nagpur (Central India). *Hislopia Journal*, **3**(2): 201-208.

Asaithumbi, M. & Manikararsgam, S. 2002. Odonata of Annamalai University, Annamalainagar, Tamilnadu, India. *Zoos' Print Journal*, **17**(2): 704-706.

Fraser, F.C. 1933. *The Fauna of British India, including Burma & Ceylon*, Vol. 1, Taylor and Francis. London, xiii + 423 pp.

Gunathilagraj, K.; Soundararajan, R.P.; Chitra, N. & Swamiappan, M. 1999. Odonates in the rice fields of Coimbatore. *Zoos' Print Journal*, **14**(6): 43-44.

Kulkarni, P.P.; Prasad, M. & Talmale, S.S. 2002. New records of damselfly *Pseudagrion microcephalum* (Rambur) from Maharashtra (Odonata: Coenagrionidae). *Bionotes*, **4**(3): 58.

Kulkarni, P.P.; Prasad, M. & Talmale, S.S. 2004. Conservation Area Series 20, *Fauna of Pench National Park*: 175-206.

Kumar, A. & Prasad, M. 1977. Odonata of ponds, tanks and paddy fields at and around the Dehra Dun valley (W. Himalaya). *Newsletter of Zoological Survey of India*, **3**(5): 270-273.

Lakhiar, A.; Panhwar, W.A. & Panhwar, F.A. 2015. Studies on the taxonomy of *Crocothemis servilia servilia* (Drury, 1773) (Odonata: Libellulidae). *Arquivos Entomolóxicos*, **14**: 105-106.

Prasad, M. 1996. An account of Odonata of Maharashtra State, India. *Records of Zoological Survey of India*, **95**(3-4): 305-327.

Prasad, M. & Varshney, R.K. 1995. A checklist of the Odonata of India including data on larval studies. *Oriental Insects*, **29**: 385-428.

Talmale, S.S. & Kulkarni, P.P. 2003. Odonata in paddy fields of Bhandara district, Maharashtra. *Bionotes*, **5**(3): 67-68.

Tiple, A.D.; Khurad, A.M. & Andrew, R.J. 2008. Species diversity of Odonata in and around Nagpur city, Central India. *Fraseria* (N.S.), **7**: 45-49.

Zia, A. 2010. *Biosystematics of Damselflies (Zygoptera: Odonata) of Pakistan*. Ph.D. thesis, Department of Agriculture Entomology, Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi, Pakistan, 163 pp.

Zia, A.; Awan, Z.J. & Astori, Z.H. 2011. *Boreal Odonata of Pakistan: Dragonflies and Damselflies*. LAP, Lambert Academic Publishing. 76 pp.

Fig. 1.- *Neurothemis tullia* (Drury, 1773), ♂.

Fig. 2.- *Neurothemis tullia* (Drury, 1773), ♀.