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## SHORT COMMUNICATION

### A NEW SPECIES OF *PLATYLESTES* SELYS (ODONATA: ZYGOPTERA: LESTIDAE) FROM THE COASTAL AREA OF KANNUR DISTRICT, KERALA, INDIA

K.G. Emiliyamma, Muhamed Jafer Palot & C. Charesh

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## A new species of *Platylestes* Selys (Odonata: Zygoptera: Lestidae) from the coastal area of Kannur District, Kerala, India

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**Abstract:** The genus *Platylestes* Selys, 1862 is known from India, by only one species, *P. platystylus* from eastern India, West Bengal, and recently from Kerala. Here, we describe a new species *Platylestes kirani* from the coastal tracts of the northern part of Kerala, southern India. The new species differs from all other known species of the genus by its unique coloration, distinct marking on synthorax, and the shape of anal appendages.

**Keywords:** *Platylestes kirani* sp. nov., *P. platystylus*, southern India, wetland.

The genus *Platylestes* Selys, 1862 is a group of medium-sized damselflies (2.2–3.3 cm) resting with wings expanded, non-metallic, and dull colored. This genus is distinguished from other genera of family Lestidae, by its subquadrate pterostigma twice as long as broad, with white at both ends. Fraser (1933) reported a single species of *Platylestes*, i.e., *P. platystyla* from Bengal and Burma (Myanmar). Based on the recent Odonata species list of the World (Schorr & Paulson 2019), three species of the genus are known, viz.: *P. heterostylus* Lieftinck, 1932, *P. platystylus* (Rambur, 1842), and *P. pertinax*

Lieftinck, 1932. The distribution record of *P. heterostylus* is from Indonesia, Malaysia, and Singapore (Dow 2009), while the distribution of *P. pertinax* is not mentioned anywhere in the literature. *P. platystylus* is relatively well known and distributed through West Bengal (India), Myanmar, Lao People's Democratic Republic, Thailand, and Vietnam (Fraser 1933; Hämäläinen & Pinratana 1999; Yokoi 2001; Sharma 2010; Subramanian & Babu 2017). *P. platystylus* was recently reported from various localities of Kerala, through several photographic records by many naturalists.

### MATERIALS AND METHODS

As a part of faunistic survey of the various wetland habitats of northern Kerala the third author (CC) photographed the species from the coastal wetlands of Kannapuram, Kannur District on 20 August 2017 (Figure 1). Later on, several intensive surveys to the area fetched more specimens. As many as seven specimens were observed in a single day during the period. Subsequently, in the year 2018, we noticed the activity

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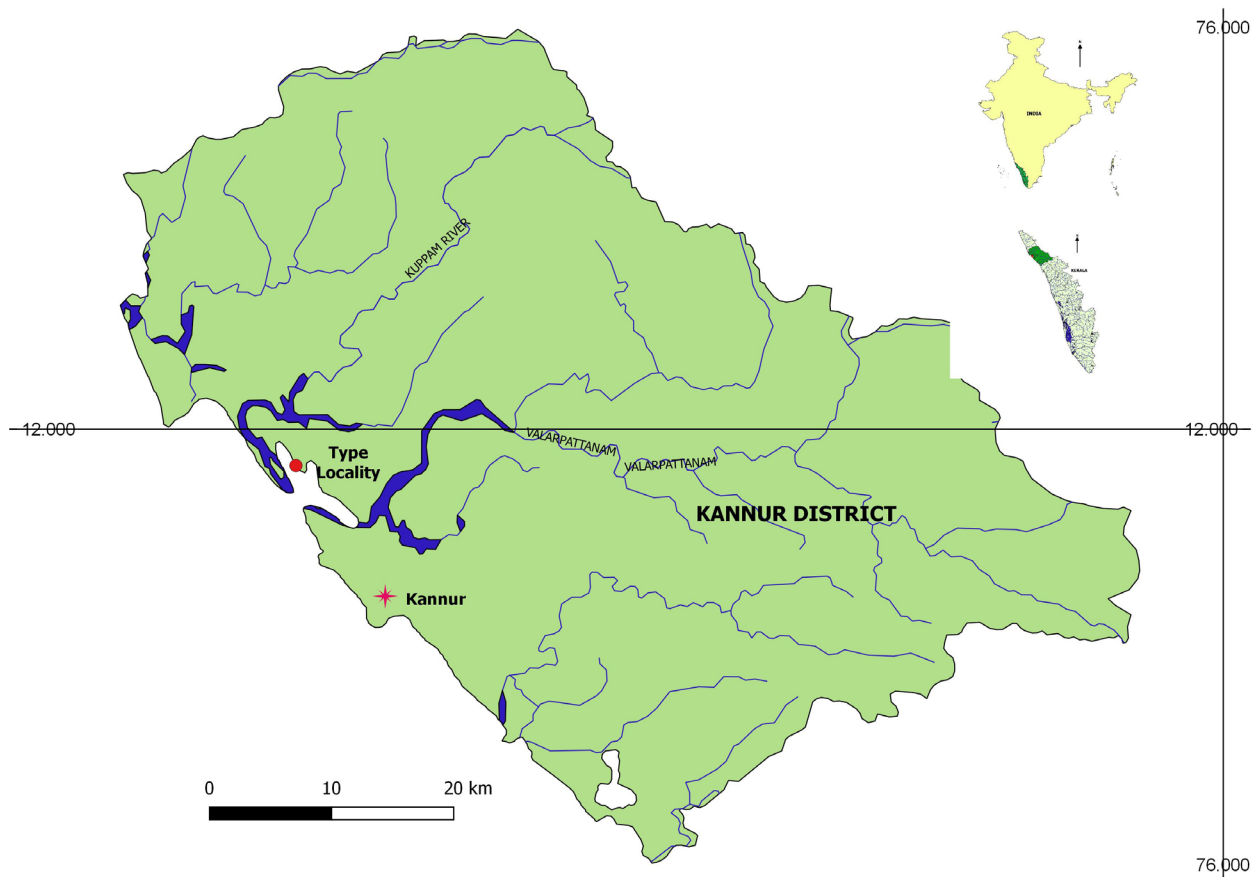


Figure 1. Type locality of *Platylestes kirani* sp. nov.

of the species by 11 August which continued until 2 October. We counted 4–5 specimens during 2018 from the locality. The collected specimens were preserved in absolute alcohol for future reference. Morphological terminology follows Chao (1953) and Watson & O’Farrell (1991). Measurements are given in millimeters (mm). The specimens were photographed using a Leica MZ 16 binocular microscope and deposited in the National Zoological Collection (NZC) of Zoological Survey of India (ZSI), Western Ghat Regional Centre (WGRC), Kozhikode.

***Platylestes kirani* sp. nov.**  
(Images 1–11)

urn:lsid:zoobank.org:act:E71D153F-38AF-49C0-92DF-AEB9421F5DE0

**Holotype:** ZSI/WGRC/IR.INV/12167, 20.viii.2017, male, India, Kerala, Edakkepuram, Kannur District (11.5836N & 75.1816E, 2m), coll. C. Charesh and Muhamed Jafer Palot.

**Paratypes:** ZSI/WGRC/IR.INV/12168, 3.ix.2017, female, same data as holotype. ZSI/WGRC/IR.INV/12169, 3.ix.2017, female, same data as holotype.

The holotype and paratypes are preserved wet in 70% ethyl alcohol. All the types are deposited in the NZC of WGRC, ZSI, Kozhikode.

**Holotype male:** Head: Labium creamy yellow with bluish tinge; labrum apple green, anterior tip black; mandibles and genae apple green; ante and post clypeus greenish-yellow with brownish tinge; postclypeus with a small black spot at the centre; frons dull greenish with three black spots, the middle spot is bigger than other two lateral spots; vertex black; eyes apple green, area adjacent to vertex pale blue with small black spots; antennae brownish black, basal segment brownish, remaining segments pale black. Thorax: Prothorax: pale greenish-blue, with a black stripe similar to that of synthorax traversing from anterior to posterior lobe at the middle; a pair of black spots on the middle and posterior lobe laterally; synthorax bright olive green on dorsum, laterally greenish-yellow; a broad black stripe on the dorsum, straight on the inner border, outwardly crenulated expanded at the upper, middle and at the lower end; mid dorsal carina pale creamy at the middle of this marking; mesothoracic triangle black; humeral



Image 1–11. *Platylestes kirani* sp. nov. 1—Adult male | 2—Adult female | 3—Head and thorax of male | 4—Head and thorax of female | 5—Male and appendage - lateral view | 6—Male anal appendage - dorsal view | 7—Secondary genitalia of male | 8—Female anal appendage - lateral view | 9—Female anal appendage - ventral view | 10—Female anal appendage - dorsal view | 11—Wings. © K.G. Emiliyamma & C. Charesh.



**Image 12. Comparison of genitalia. Male anal appendage: a—*Platylestes kirani* sp. nov. | b— *Platylestes platystylus*. Male secondary genitalia: c—*Platylestes kirani* sp. nov. | d— *Platylestes platystylus*. © K.G. Emiliyamma.**

suture thin black, two small black spots at the upper and lower ends; four black spots on mesepimeron, two at its upper third, one over the spiracle and one at the lower third; metepimeron greenish-yellow with two black spots at upper and lower ends; pleura of fore coxa with a small black stripe; antealar sinus pale blue; undersurface of thorax pale yellowish- green with two black spots between the hind legs; legs pale yellowish-white with black stripes on extensor surfaces of femora and tibiae on forelegs, mid legs and hind legs; a black spot on each hind coxa, underside of each coxa black, claws black;

wings hyaline, petiolated as far as ac, pointed at apices; forewing with 10–11 and hindwing with 9–10 postnodal nervures; pterostigma short and broad, twice as long as broad, distal end straight, proximal end oblique and in line with brace, covering two cells, black, with creamy yellow at coastal, distal and proximal ends; abdomen greenish-yellow, with brown stripes on dorsum, similar to that in *P. platystylus*; segment 1 and 2 bright yellowish-green; segment 2 with a brownish spear mark with hook like shape at the bottom, split at the middle; segments 3–6 with subdorsal brownish spots, pale yellow at both



**Image 13. Comparison of adult specimens of *Platylestes kirani* sp. nov. and *P. platystylus*: a—*Platylestes platystylus* - male | b—*Platylestes platystylus* - female | c— *Platylestes kirani* sp. nov. - male | d— *Platylestes kirani* sp. nov. - female**

ends; segment 7 with yellow spot fused and extended laterally; segment 8 with a greenish-blue crescent marking; segment 9 and 10 black, without marking; segment 1 and 2 with small black spots ventrally; segments 2–6 with black apical rings, pale yellowish-green with a blue tinge underside; *anal appendages* as in *P. platystylus*, creamy white, base of superior

and inferior appendages black; superior appendages as long as segment 9, broad, forcipate, apices curving gradually in to meet with, blunt at apices, outer border with 3 big and 1 small spine near apices; inner border with a small membrane like expansion beginning from near the base as an obtuse knob and ends with a sharp spine, apex of superiors ends with a few white, delicate

**Table 1. Morphometric measurements of type specimens of *Platylestes kirani* sp. nov.**

Type	Sex	Abdomen (mm)	Forewing (mm)	Hindwing (mm)
Holotype	Male	32	21	20
Paratype 1	Female	31	22	21
Paratype 2	Female	29	21	20

long hairs; inferior appendages less than half the length of superiors, ends at the middle of sharp spine of inner membrane like expansion of superiors, slender throughout its length, convergent and meet at extreme apices so as to enclose a small oval space, ends with a tuft of long, delicate, white hairs.

**Female:** Differs from the male in many aspects. The differences are follows: eyes pale greenish-yellow; labrum with a deep, median black spot; vertex pale brown with black patches; two black spots near the base of antenna; anterior lobe of prothorax brownish, middle lobe with two elongated black spots, middle and posterior lobe with pale brownish stripe as in male; synthorax dull green, laterally pale greenish-yellow; black stripe on dorsum of synthorax absent and with black spots as in *P. platystylus*; two long black spots on the outer side of mesothoracic triangle; dorsum with 4 black spots of various sizes at the posterior half; anterior and posterior humeral stripe with black long spot at the base; mesepimeron with a big triangle black spot and another three spots at anterior part and a round spot at the posterior; metepimeron with two spots; ventral surface of thorax with two small spots at anterior and posterior parts; wings with 10–11 postnodals in forewings, 10 in hindwings; abdomen similar to male in markings, but pale colored, first and second abdominal segment with two small spots laterally. In the second specimen, the dorsum of synthorax with a black straight stripe, spots on synthorax similar to the first specimen; postnodals 9–10 in forewings, 8–9 in hindwings; abdomen pale brownish, markings similar to male. The anal appendages are creamy white, conical, blunt at tip, longer than segment 10; vulvar scale robust, black, extending up to the end of abdomen.

**Diagnosis:** This species can be easily distinguished from all other species of *Platylestes*, by its unique coloration, distinct black marking on its synthorax and shape of anal appendages. This species is characterized from *P. platystylus* and *P. heterostylus* by its broad black band on synthorax and apple green coloration.

The new species, *Platylestes kirani* sp. nov. is differentiated from its close relative, *P. platystylus* by



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**Image 14. Type locality of *Platylestes kirani* sp. nov.**

the following set of characters (Images 12 & 13):

1. Dorsum of synthorax with a broad black marking, its inner side straight, while its outer side crenulated expanded structure at three points (in *P. platystylus*, dorsum of synthorax without stripe, and with many black spots)
2. Synthorax apple green (*P. platystylus*: pale khaki brown)
3. Apex of superior anal appendages blunt and rounded, meeting each other (*P. platystylus*: apex is conical, not meeting each other, pointing downwards)
4. The colour of pterostigma is much darker than *P. platystylus*.

**Etymology**

The species is named after the late C.G. Kiran, in recognition of his outstanding contribution to the odonatology of Kerala. He co-authored the first Odonata book in Malayalam (local language) and popularized odontology among the nature enthusiasts of the region. He passed away in 2017, at an early age of 40 years. The species name *kirani* is used as a noun in the genitive case.

### HABITAT AND DISTRIBUTION

The type locality Edakkepuram wetlands (11.5836N & 75.1816E) is about 5km north of Azheekkal estuary, where both Valapattanam and Kuppam rivers discharge water to the Arabian Sea. The locality is primarily a creek extending from Madackara (close to the estuary) to Edakkepuram and the water inflow is controlled by a sluice at Edakkepuram. The area was mainly a paddy field, bordered with a small patch of mangrove trees of *Avicennia officinalis*, *Rhizophora mucronata*, and *Excoecaria agallocha* on the bunds. The other mangrove associated species observed were *Clerodendron inerme*, *Premna latifolia*, *Derris trifoliata*, and *Ipomoea companulata*.

The swamp vegetation was dominated by *Nymphaea nauchali*, *Hydrilla verticillata*, *Ipomoea aquatica*, and a thick growth of *Cynodon arcuatus* grasses. The shoreline vegetation was mainly of *Mariscus javanicus*, *Colocassia esculenta*, *Ipomoea marginata*, *Impatiens minor*, *Eclipta alba*, *Urena lobata*, *Cayretia trifolia*, and *Passiflora foetida*.

The new damselfly species was mainly found foraging inside the shoreline vegetation and occasionally resting on the stems of *Colocassia* plants or on the leaf blades of grasses and sedge (Image 14). Interestingly, most of the specimens observed were males during the last two seasons. No breeding activity was noted from the area.

*Platylestes kirani* sp. nov. is currently known only from the coastal wetlands of Kannur District, northern Kerala. Several individuals were located during the months of August, September, and October. The species frequented paddy-fields and mangrove wetlands, where the water was saline during the dry season. The type locality is typically dry from March to May. The species was found to be locally abundant during the short flight period from August to September or October. It was first

sighted in the last week of August and seen throughout almost for two months. The locality is also shared by its close congener *P. platystylus* during the month of June to August. Other odonates collected or observed at the type locality include *Agriocnemis pygmaea*, *Ceriagrion cerinorubellum*, *C. coromandelianum*, *Ischnura rubilio*, *Psuedagrion microcephalum*, *Acisoma panorpoides*, *Brachythemis contaminata*, *Brachydiplax sobrina*, *Crocothemis servilia*, *Diplacodes trivialis*, *Neurothemis tullia*, *Orthetrum sabina*, *Rhodothemis rufa*, *Rhyothemis variegata*, *Tholymis tillarga*, *Trithemis aurora*, *T. pallidinervis*, and *Anax guttatus*.

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