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Telebasis igapocola sp. nov., a new damselfly from Amazonian Peru and Brazil (Odonata: Coenagrionidae)

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To date 57 species of *Telebasis* have been described. Most are Neotropical species, only three extending North of Mexico. From Peru 17 species were known. Most are found in the Amazonian lowlands; two are known from higher elevations in the Andes. From Brazil 26 species were known. In this article another Neotropical species is described, hereby named *Telebasis igapocola*. Males of this species differ from other described species of *Telebasis* with a black and red abdomen by the shape of cerci, paraprocts and genital ligula. Cerci are as long as paraprocts with a blunt tip. Genital ligula has a sharp-angled arrow-shape in ventral view. Females can be distinguished from other *Telebasis* species by the shape of the prothorax with two approximate processes curving caudad.

http://zoobank.org/urn:lsid:zoobank.org:pub:99B3663D-199B-4CB6-A380-2F3A71CF2853

Keywords: taxonomy; Zygoptera; dragonfly; new species; Loreto; Pará; South America

Introduction

Telebasis Selys, 1865 is one of the most species-rich Neotropical genera. For years it was nearly impossible to identify South American specimens belonging to this genus to species level based on available literature. This improved when R.W. Garrison published a synopsis of the genus in which he described and illustrated all 50 species known at the time (Garrison, 2009). Shortly after this publication eight additional species from Brazil were described (Lencioni, 2010; Machado, 2010). Two years later *T. pareci* Machado, 2010 was synonymised with *T. lenkoi* Machado, 2010 (Pinto & Carvalho, 2012), bringing the total to 57 species.

This number will undoubtedly increase in the future as research progresses: several species still await description and also it seems likely that other new species are still to be discovered (Garrison, von Ellenrieder, & Louton, 2010).

In this article a new species is described, which until recently was only known from two males: one from Pará, Brazil (in MNRJ collection; collected in 1971 by unknown collectors) and one from Loreto, Peru (in RWG collection, collected in 1994 by Jerry A. Louton). The species was found again in 2010 and 2015 in Loreto, Peru.

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Materials and methods

Measurements are in millimetres, abdominal length excludes appendages. The following abbreviations are used in the text: Fw = forewing; Hw = hind wing; CuP = cubitus posterior; RP2 = second branch of the radius posterior; S1–10 = abdominal segments 1 to 10.

Acronyms for collections: MUSM = Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru; RWG = Rosser W. Garrison collection, Sacramento, CA, USA; RMNH = National Museum of Natural History Naturalis, Leiden, the Netherlands (formerly Rijks Museum van Natuurlijke Historie); MNRJ = Universidade Federal de Rio de Janeiro, Museu Nacional do Rio de Janeiro, Brazil.

Telebasis igapocola sp. nov.

Etymology

The species is named *igapocola* (noun in apposition) after the habitat were it was found: Igapó (a type of flooded lowland rainforest). The Latin suffix *–cola* meaning 'inhabitant'.

Specimens examined

Holotype ♂: Peru, Loreto department, Tamshiyacu-Tahuayo Reserve, near Río Tahuayo in flooded forest (Igapó) (4.3316°S, 73.2338°W, 97 m asl), 17 February 2010, leg. T. Faasen [MUSM].

Paratypes: 1 ♂ and 1 ♀ in copula, same data as holotype, leg. T. Faasen [RMNH]; 1 ♂, same data as holotype but 1 February 2015, leg. T. Faasen [RMNH]; 1 ♂, further upstream near Río Tahuayo in flooded forest (Igapó) (4.4144°S, 73.3077°W, 100 m asl), 2 March 2010, leg. T. Faasen [RMNH]; 1 ♂, near Río Tangarana in flooded forest (Igapó) (4.4163°S, 73.2830°W, 103 m asl), 8 February 2015, leg. T. Faasen [RMNH]; 1 ♂, Aguas Negras (0.5227°S, 75.2566°W, 185 m asl), 13 March 1994, leg. J. Louton [RWG]; 1 ♂, Brazil, Pará State, Óbidos municipality, Village of Curuai (2.2833°S; 55.4733°W, 12 m asl), 31 January 1971, collectors unknown [MNRJ].

Male holotype

Head. Labium and base of mandibles pale; labrum, genae, anteclypeus and postclypeus greenish-yellow; anterior part of frons up to anterior ocellus and just posterior to antennae dark reddish. Posterior to the antennae a narrow red line protrudes posteromedially to the lateral ocelli. Very narrow reddish stripe present along dorsal eyerim and along posterior border of head behind lateral ocelli. Antennae and eyes reddish-brown. Remaining part of head black (Figure 3a, b).

Thorax. Prothorax reddish-brown dorsally, gradually lightening laterally and ventrally; posterior lobe projected posteriorly with posterior margin slightly sinusoidal. Pterothorax with a black, slightly iridescent dorsal longitudinal stripe covering 35% of the mesepisternum. Remaining (lateral) part of the mesepisternum reddish-brown (Figure 2b). Mesepimeron and metepisternum light brown. Remaining parts of thorax, including coxa, pale yellowish. Mesepisternal plates narrowly triangular, three times as wide as long, with a medial rim and raised lateral tip. Legs pale with dark longitudinal stripe on dorsal surface of femora, spurs black. Pretarsus with well-developed supplementary tooth, black at tip; remainder reddish.

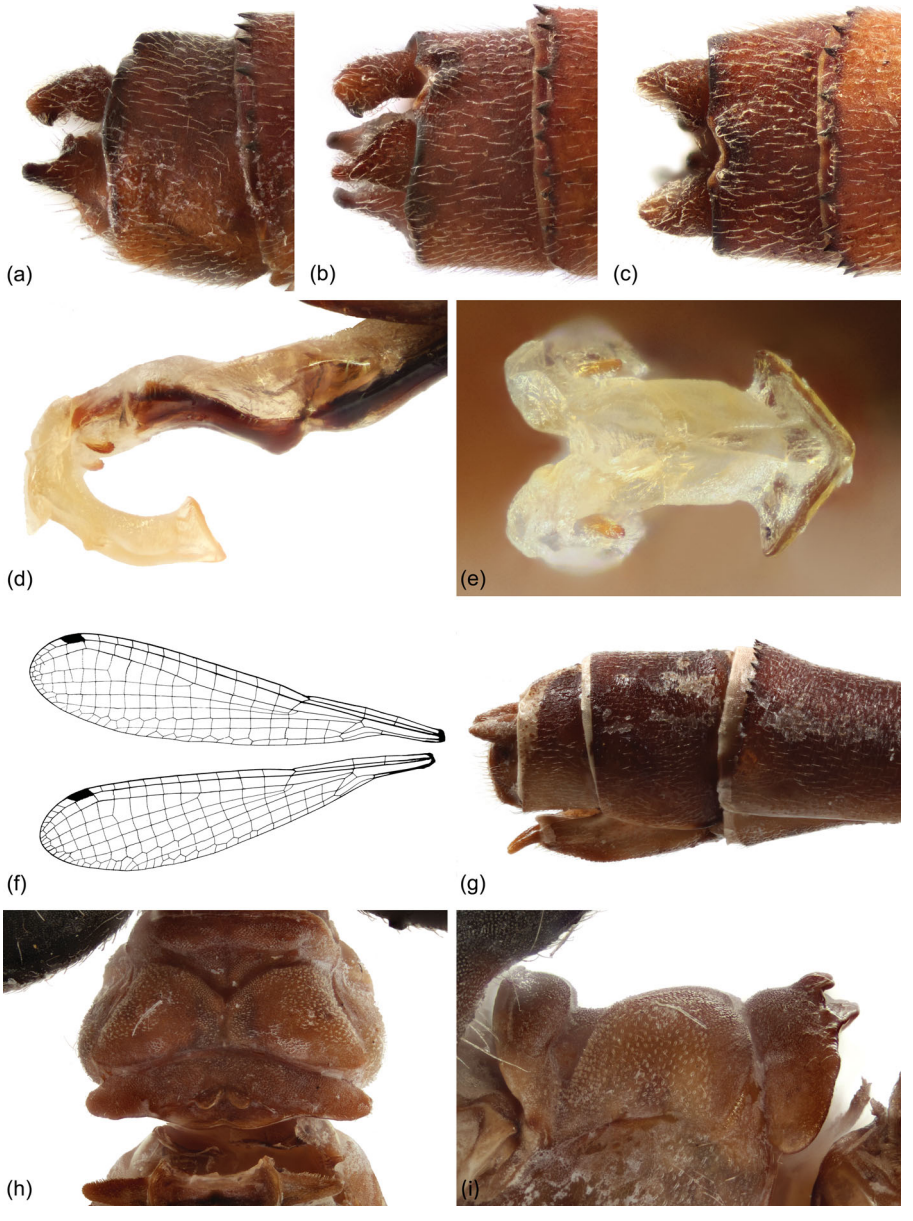

Figure 1. *Telebasis igapocola*. (a–c) cerci and paraprocts male (paratype): (a) lateral view; (b) mediodorsal view; (c) dorsal view. (d, e) Genital ligula male (paratype): (d) lateral view; (e) ventral view. (f) Right wings ventral view male (paratype). (g) S9–10 and ovipositor female (paratype). (h, i) prothorax female (paratype): (h) dorsal view; (i) lateral view.

Wings hyaline; pterostigma covering one cell, dark brown; CuP at end of petiolation at about 1/3 of the length between antenodals 1 and 2 in both Fw and Hw. Postnodals: 12 in Fw, 10 in Hw. RP2 branching at postnodal 5 in Fw, at postnodal 4 in Hw (Figure 1f).

Abdomen. Terga: S1 pale reddish dorsally, yellowish laterally; S2–3 reddish dorsally, orange laterally. S4–7 dark brown to black dorsally, except narrow pale anterior margin, pale orange brown laterally; S8–10 reddish (Figure 2b). Sterna: S1–7 dark brown except margins; S8–10 orange, with dark longitudinal marking on S8.

Genital ligula with distinct terminal fold; inner fold short and strongly appressed to ligula; a

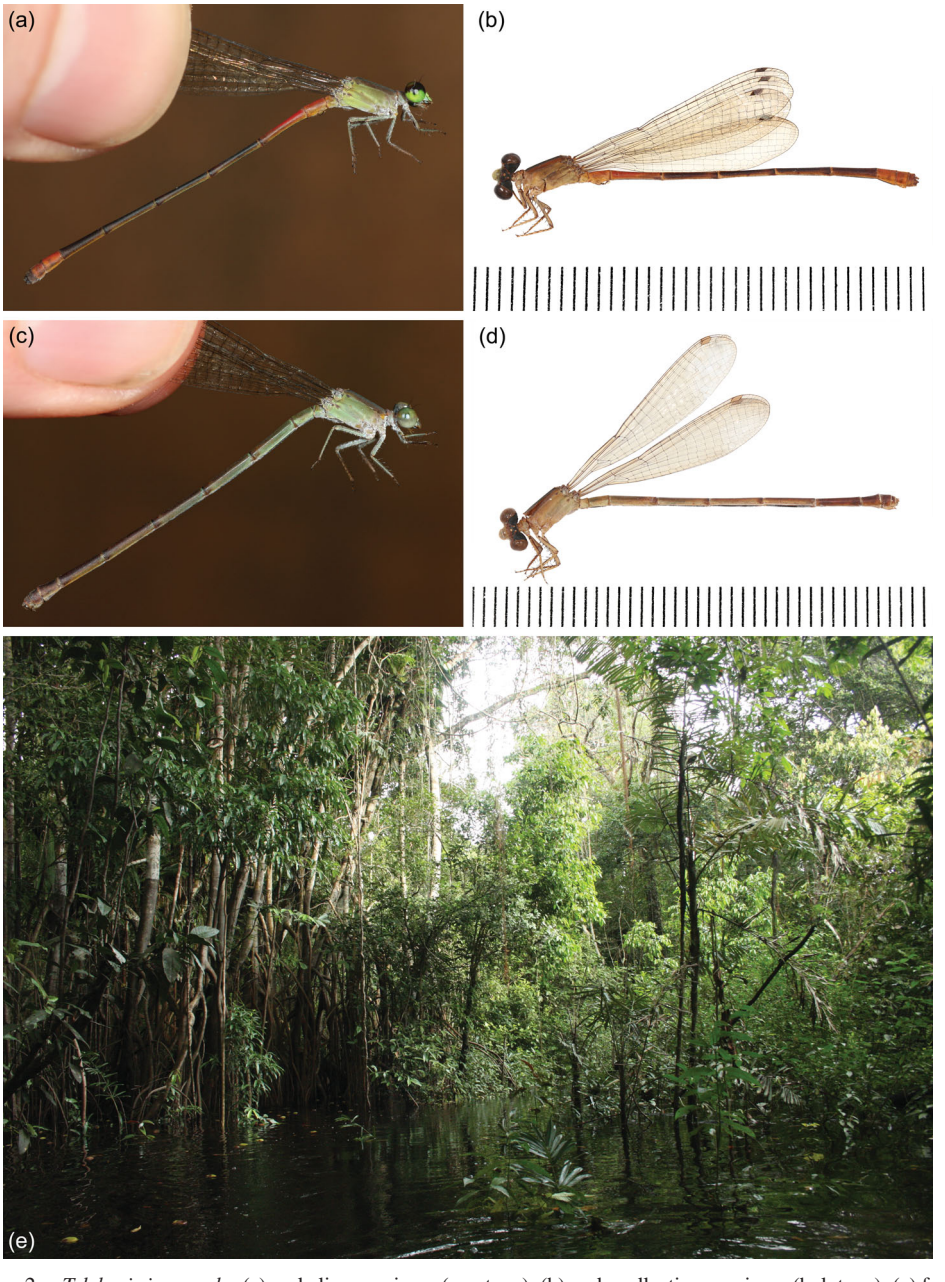

Figure 2. *Telebasis igapocola*: (a) male live specimen (paratype); (b) male collection specimen (holotype); (c) female live specimen (paratype); (d) female collection specimen (paratype); (e) habitat (type location in Tamshiyacu-Tahuayo Reserve).

pair of chitinised, semicircular, tubercles with serrate edge, visible at magnification of 120 × or higher, present at base of flexure; distal segment of ligula parallel sided, but expanded at apex; apex truncated in lateral view; in ventral view parallel sided with widened triangular tip (arrow-shaped) (Figure 1d, e). Cerci orange-brown, shorter than S10; lateral and dorsal surface of cerci convex at base, but compressed apically into almost planar, blunt tip (Figure 1a–c). Mesially a small dark tooth directs medioventrally, visible in lateral view. Paraprocts as long as cerci.

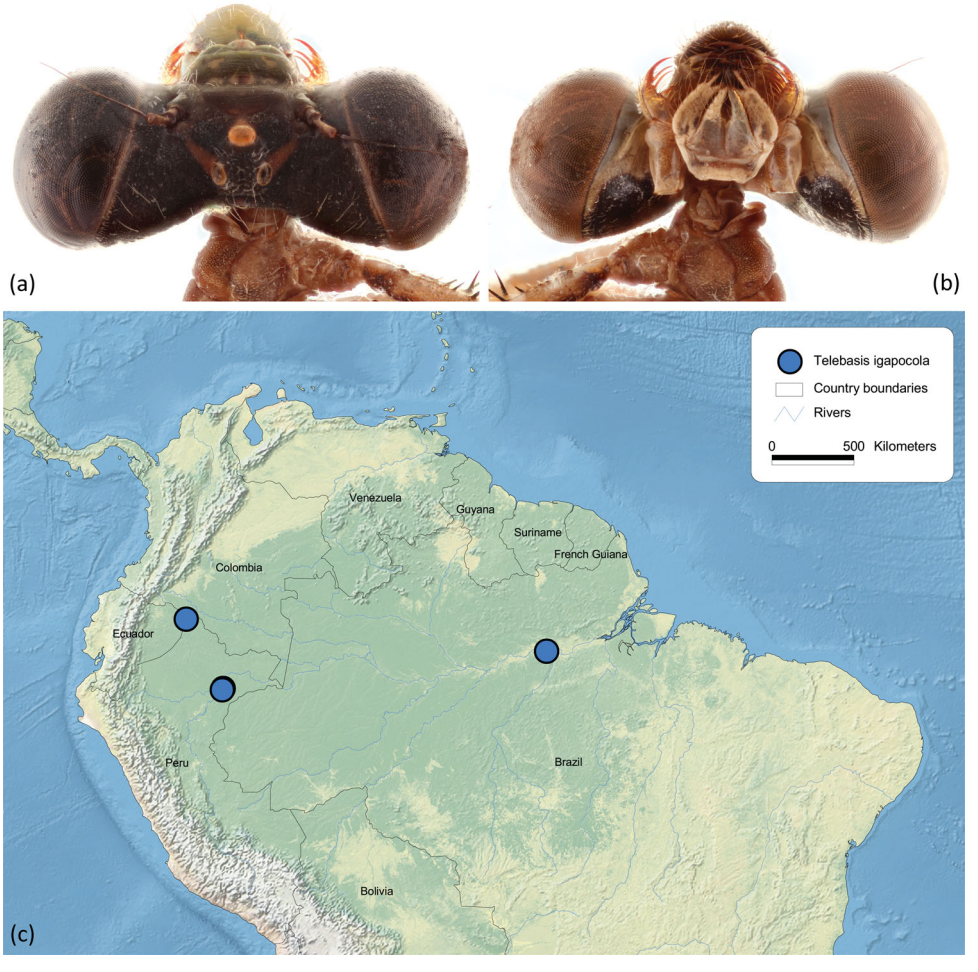

Figure 3. *Telebasis igapocola*: head male paratype: (a) dorsal view, (b) ventral view. (c) Distribution map.

Dorsal and ventral margins concave, converging into a short, narrow blunt darkened tip; halfway on mesodorsal edge of paraprocts a dark, blunt tooth directs dorsally about ½ size of apical tip.

Dimensions. Total length 34.5 mm; abdominal length 27.0 mm; forewings 18.5 mm; hind wings 18.0 mm.

Female paratype

Head. As holotype.

Thorax. Coloration of thorax as in holotype, though slightly lighter on lateral parts (Figure 2d). Posterior lobe of prothorax ridged on posterior half with two short, rounded, dorsal processes. Processes curved caudad over the lobe, not reaching posterior margin. Posterior margin sinusoidal, more distinctly than holotype (Figure 1 h, i). RP2 branches slightly distal to postnodal 5 in forewings. Legs as in holotype; pretarsus with well-developed supplementary tooth.

Abdomen. Terga S1–4 pale greyish brown; terga S5–10 slightly darker brown. Tergum of S10 with triangular cleft in caudal margin dividing S10 for more than ½ of its length. Sterna dark

from S2 onwards. S8 without vulvar spine. Cerci brown, conical and shorter than S10. Tip of ovipositor extends almost to posterior margin of S10; stylus reaches as far as paraprocts, not reaching tips of cerci (Figure 1 g).

Dimensions. Total length 36.0 mm; abdominal length 28.5 mm; forewings 20.0 mm; hind wings 19.0 mm.

Variation in male paratypes

Head. As holotype.

Thorax. As holotype, but postnodals in Fw 11 ($n = 4$), 12 ($n = 5$) or 13 ($n = 1$); in Hw 9 ($n = 2$), 10 ($n = 6$) or 11 ($n = 1$).

Abdomen. As holotype, but tip of paraproct not darkened in Brazilian specimen.

Dimensions. Total length 34.0–34.5 mm; abdominal length 26.5–27.0 mm; Fw 18.5–19.0 mm; Hw 17.5–18.0 mm.

Remarks

Several paratypes were photographed when still alive, giving information on coloration of live specimens (Figure 2a, c). Differences with preserved specimens are small: base of mandibles and genae in male: light blue; eyes in male: upper half dark brown to black, lower half greenish yellow; eyes in female: upper half olive, lower half beige; pterothorax: olive laterally; female abdomen: S1–3 olive dorsally and laterally (S3 dorsally only in apical half), S4–5 olive laterally.

On www.boldsystems.org *T. igapocola* can be found under taxonID 746178. It lists two specimens with photographs and barcodes.

Diagnosis

Medium-sized coenagrionid. Prothorax of female with a pair of short processes on dorsum of posterior lobe. Pterothorax olive-brown with dark middorsal stripe. Abdomen of male red and black, abdomen of female olive-brown (Figure 2a–d).

It is placed within the genus *Telebasis* based on a combination of characteristics that define the genus (Garrison et al., 2010): frons angulate, pale postocular spots absent, pretarsus with well-developed supplementary tooth, CuA extending >6 cells distal to vein descending from subnodus; genital ligula with well-developed chitinised tubercle on each side at base of flexure; male cercus and paraproct entire, equally long, slightly shorter than S10, not expanded vertically; female lacking vulvar spine, ovipositor not surpassing S10 and S10 dorsum divided longitudinally by a cleft for more than ½ its length.

T. igapocola resembles *T. selaopyge* De Marmels, 1989 and *T. corbeti* Garrison 2009: rear of head mostly black, labrum greenish/blue, wings hyaline, male S4–7 mostly black, S8–10 red, cerci not approximate and without elongate lateral seam, female without anteriorly directed prothoracic horns, but posterior lobe with a pair of mediolateral processes, mesepisternal pits absent, ovipositor not extending beyond S10, metepisternum unmarked.

T. igapocola differs from *T. corbeti* by absence of dark stripe on mesepimeron and shorter cerci; from *T. selaopyge* by red S1–3 and lack of a dorsal tooth on cerci (males) or more pronounced, approximate mediolateral processes on prothoracic posterior lobe (females).

Males of *T. igapocola* can be distinguished from these and all other known *Telebasis* species by the shape of cerci, paraprocts and genital ligula. Cerci not approximate and as long as

paraprocts with blunt tip. Proximal to tip on median side a small tooth directs medioventrally. Paraprocts converge into a blunt tip; halfway on mediodorsal edge of paraprocts a dark, blunt tooth directs dorsally (Figure 1a). Genital ligula differs by its sharp-angled arrow-shape (Figure 1e).

Females of *T. igapocola* can be distinguished from other *Telebasis* species by two approximate, short, rounded processes curving caudad on dorsum of prothoracic posterior lobe (Figure 1 g, h).

Using the 'Key to males of *Telebasis*' in Garrison (2009, p. 11), males of *T. igapocola* key out in Key M-7, based on cerci not approximate, wings hyaline, cerci lacking a seam and less than twice the size of paraprocts, rear of head mostly black and labrum bluish. Following Key M-7 *T. igapocola* keys out in couplet 3 or 4, as it lacks black on the labrum and has a red abdomen. Insertion in 3 seems most practical:

3. Cercus short and with one small dorsal tooth as well as two apical teeth; distal segment of lig narrow with an abruptly expanded tip; Amazonas State, Venezuela..... .....*T. selaopyge*

3′. Cercus lacking a dorsal tooth; distal segment of lig wider, parallel at proximal 2/3 in ventral view, expanding abruptly at 2/3 of its length into a sharp-edged triangular tip; Peru and Brazil.....*T. igapocola*

3″. Cercus lacking a dorsal tooth; distal segment of lig expanded at mid-length, tip truncated or rounded.....4

Using the 'Key to females of *Telebasis*' in Garrison (2009, p. 23), females of *T. igapocola* key out in Key F-5, based on absence of mesepisternal pits lateral to mid-dorsal carina, ovipositor not extending beyond S10, unmarked metepisternum, absence of mesepisternal black stripe and absence of prothoracic horns. Following Key F-5, *T. igapocola* keys out in couplet 4, as it has a pair of tubercles on the posterior lobe of the prothorax and the posterodistal margin of the mesostigmal plate is raised:

4. Posteromedial margin of mesostigmal plate lacking a prominent black glabrous lobe, posterodistal margin of mesostigmal plate raised; prothoracic tubercles isolated and prominent, as high as wide, their tips as high as hind margin of prothorax; larger species (hind wing 19, abdomen 29); Peru and Bolivia.....*T. corbeti*

4′. Posteromedial margin of mesostigmal plate lacking a prominent black glabrous lobe, posterodistal margin of mesostigmal plate raised; prothoracic tubercles approximate and prominent, curved caudad over posterior part of hind lobe, not reaching posterior margin; larger species (hind wing 19, abdomen 28,5); Peru and Brazil.....*T. igapocola*

4″. Posteromedial margin of mesostigmal plate forming a prominent black glabrous lobe, posterodistal margin of mesostigmal plate not raised; prothoracic tubercles isolated and less prominent, wider than high, their tips not as high as hind margin of prothorax; smaller species (hind wing 16–17, abdomen 25–27); Venezuela.....*T. selaopyge*

Biology

All collected specimens originated from Amazonian lowland tropical forests, most near black water rivers. The specimens from Tamshiyacu-Tahuayo Reserve were all found in primary Igapó forests, which are flooded for most of the year with black water from a neighbouring river (Myster, 2009; Figure 2e). The species was found repeatedly at two very similar sites during visits in two different years and at one site also a copula was collected, so this site probably represents reproductive habitat. The sites were close to the river in relatively deep water.

They seemed to live there in low densities and were typically seen as solitary specimens perching discreetly less than 1 m above the water on twigs of small trees and shrubs or flying low over the water from one twig to the next. They were observed both in the sun and in the shade. Their tendency to fly back and forth between sun and shade and also between shrubs made it difficult to track them.

Sites where *T. igapocola* was collected are difficult to sample as they can only be accessed by canoes which manoeuvre between the vegetation slower than Odonata. Odonata densities are very low here and specimens can easily fly out of reach. As a result not much information is available on species sharing habitat with *T. igapocola*. Near the type localities mainly rather common species were seen in low numbers, e.g. *Perithemis cornelia* Ris, 1910, *Erythemis haematogastra* (Burmeister, 1839) and *Phoenicagrion flammeum* (Selys, 1876). Furthermore solitary individuals were seen of *Hetaerina laesa* Hagen in Selys, 1853 and *Perithemis lais* (Perty, 1834) (probably wandering in from the river) and of *Heteragrion inca* Calvert, 1909 and *Acanthagrion phallicorne* Leonard, 1977 (wandering in from adjacent less severely flooded forests). Besides these species, at one of the sites two undescribed Coenagrionidae species were seen that need further study.

All specimens of *T. igapocola* studied were collected in January–March. Though it seems possible that this species will indeed primarily fly in this part of the year (the wet season), it should be taken into account that there no sampling data are available from the type localities from other parts of the year, so the flight period of this species could in fact also be much longer.

Distribution

T. igapocola is known from the NE Amazonian part of Peru, from the Zona Reservada Güeppí (on the Ecuadorian border and less than 50 km from the Colombian border) and from Tamshiyacu-Tahuayo Reserve. Furthermore it was found in Pará, Brazil, near the Amazon River, more than 2000km to the east (Figure 3c). It seems likely that the species will also be present in intermediate and adjacent areas within Brazil, Ecuador and Colombia.

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