

**TELEBASIS SIMULATA SPEC. NOV. FROM SOUTH AMERICA,
PREVIOUSLY CONFUSED WITH *T. SANGUINALIS* CALVERT
(ZYGOPTERA: COENAGRIONIDAE)**

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The new sp. (holotype ♂, allotype ♀: Brazil, State of Amazonas, Manaus, 20-VI-1922; deposited in FSCA, Gainesville, Fla, USA) is described and illustrated based on 82 ♂ and 15 ♀ from Brazil, Surinam, Trinidad and Venezuela. It most closely resembles *T. sanguinalis* but differs mainly by: (1) translucent dorsal flap of terminal penile segment rectangular in lateral view, gradually tapered to posterior lateral angle (vs flap with a posterolateral lobe-like extension directed posteriorly); (2) cerci 1.6 to 1.8 times as long as paraprocts (vs 2.0 times as long); (3) rear of head half black, black marking extending to occipital foramen (vs pale except for a pair of small, dark circular spots). *T. sanguinalis* is known only from central Bolivia and western Brazil.

INTRODUCTION

While searching for Odonata in eastern Bolivia in November of 1999, I collected a series of a relatively small red *Telebasis* which I could not identify in the field. I later discovered that the specimens are *T. sanguinalis* Calvert, and that specimens previously identified by others as *T. sanguinalis* are actually an undescribed species which I present herein.

TELEBASIS SIMULATA SP. NOV.

Figures 1-6

Material. — **Holotype** ♂: BRAZIL, State of Amazonas, Manaus, 20-VI-1922, J.H. Williamson & J.W. Strohm leg.; — **Allotype** ♀: same data as holotype. — **Paratypes** (20 ♂, 8 ♀): 10 ♂, 3 ♀, 1 mated pair: same data as holotype; — 1 ♂, 1 ♀, 2 mated pairs: SURINAM, Suriname, Zanderij, 26-V-1962, 24-VI-1962, 21-IV-1963, J. Belle leg.; — 1 ♂: VENEZUELA, Bolivar, trib. Rio Tobanamo, 20 to 50 km E of Tumeremo, 27-VII-1987, T.W. Donnelly leg.; — 5 ♂, 1 ♀: TRINIDAD, Caroni County, Cacandee Village, edge of Caroni Swamp, 16-IX-1964, C.T. Collins leg. The holotype, allotype and 15 paratypes are deposited

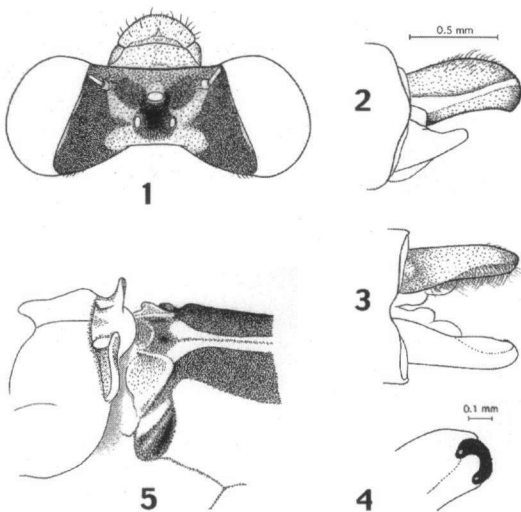
in the Florida State Collection of Arthropods (FSCA) in Gainesville, Florida; 6 ♂, 2 ♀ and a tandem pair (paratypes) are in the University of Michigan Museum of Zoology (UMMZ); a tandem pair from Surinam and a male from Trinidad (paratypes) are in the D.R. Paulson Collection.

Other specimens studied. — [FSCA]: BRAZIL, Bahia, Barra, III-1958, Dente leg., 2 ♂; Amazonas, Manaus, 20-VI-1922, J.H. Williamson & J.W. Strohm leg., 13 ♂, 1 ♀. — SURINAM, Suriname, Zanderij, 26-V-1962, J. Belle leg., 2 ♂, 2 ♀; same data, 15-V-1959, 1 ♂, 1 ♀; same data, 21-IV-1963, in cop. — TRINIDAD, St. George County, Waller Field, 3-VIII-1964, C.T. Collins leg., 1 ♂; same loc., 6-X-1964, J. Hernandez leg., 3 ♂; Caroni County, Cacandee Village, edge of Caroni Swamp, 16-IX-1964, C.T. Collins leg., 4 ♂. — [UMMZ]: BRAZIL, Amazonas, Manaus, 20-VI-1922, J.H. Williamson & J.W. Strohm leg., 24 ♂; same locality, 22-VI-1922, 3 ♂; same locality, 30-VI-1922, 1 ♂; same locality, 20-VII-1922, 7 ♂, 1 ♀.

Etymology. — The name *simulata* implies the similarity of the new species to *T. sanguinalis*.

MALE (holotype). — **H e a d.** — Labium light tan; labrum, base of mandibles and genae grayish green; clypeus and frons blackish brown; basal 2 segments of antennae orange, second seg. paler; vertex black; occiput mostly black with brownish red mark anterior to median ocellus and a pair of larger, dark orange irregular marks lateral to ocelli, the two marks narrowly connected at posterior margin of head (Fig. 1); rear of head about half black, tan around occipital foramen and to base of mouthparts.

T h o r a x. — Prothorax reddish orange with paler sides, deeply recessed area between the anterior and middle lobes black; pterothorax orange except for black middorsal stripe 0.28 mm wide on each side of orange mid-dorsal carina (0.10 mm wide), black stripe occupies 2/5 width of mesepisternum in dorso-lateral view; a small black spot at posterior end of each of the mesopleural (humeral), interpleural, and metapleural sutures; sides and venter of pterothorax pale ochre. Legs tan, femora with diffuse brown dorsal stripe, spines black. Wings hyaline; postnodal crossveins: 10 in forewings, 9 in left hindwing, 10 in right; vein M_2 (Needham-Comstock system, see WESTFALL & MAY, 1996, p. 9) originates at 5th postnodal crossvein in forewing, at 4th in hindwing; pterostigma light brown, surmounting one cell.



Figs 1-5. *Telebasis simulata* sp. n.: (1) head of holotype, dorsal view; — (2/3) male anal appendages: (2) lateral view, (3) dorsal view, setae omitted on left cercus; — (4) right cercus, apicomedial view, setae omitted; — (5) middle and hind lobes of female prothorax plus anterior portion of pterothorax, dorsal oblique view.

Abdomen. — Segment 1 mostly tan except red dorsoapically; 2-10 red dorsally and laterally, light tan ventrally. Cerci in lateral view 0.62 mm long, width at midlength 0.29 mm (length:width ratio = 2.1), with a lateroventral, longitudinal full-length seam, orange red above, pale below with dark brown ventral margin, and a large basal, ventral tooth close to base of cercus (Fig. 2); in dorsal view narrow, nearly straight, with numerous stout setae on mesal margin (Fig. 3), apex with 2 small, rounded black teeth best seen in apicomedial view (Fig. 4); paraproct slightly more than half as long as cercus, in lateral view tapering to elongate, rounded apex (Fig. 2).

Dorsal, translucent flap of terminal penile segment rectangular in lateral view, gradually tapered to anterior lateral angle (Fig. 6).

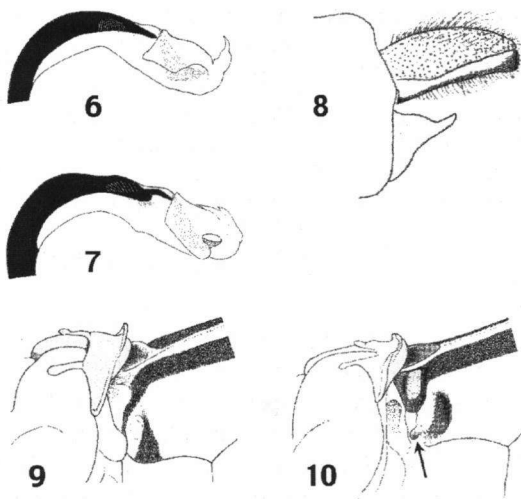
Measurements (mm). — Total length 30; hind wing 15.3; abdomen 24.

FEMALE (allotype). — Similar in coloration to male, except red areas more orange. Hind lobe of prothorax with rudiments of anteriorly-directed processes (Fig. 5); posterior rim of hind lobe with low medial arched lobe directed posteriorly and with erect lateral lobes (Fig. 5); mesostigmal plates flat, posterior margin low, lateral lobe slightly produced, barely protruding above thoracic surface in dorsolateral view (Fig. 5); black middorsal stripes of mesepisternum extending laterally behind triangular mesostigmal plates; elongate, black low ridge and adjacent furrow posterolateral to mesostigmal plates (Fig. 5). Postnodal crossveins: 10 in forewings, 9 in left hindwing, 8 in right.

Dorsum of abdomen orange on segs. 1-6, apical segs. darker; segment 10 cleft middorsally; cerci brown, 0.38 mm long, approximately equal to lateral length of segment 10; styli of ovipositor black, 0.25 mm long.

Measurements (mm). — Total length 29.2; hindwing 16.0; abdomen 23.4.

VARIATION. — Occiput of most paratypes with a black mark dividing the elongate orange mark in half near the lateral ocelli, and area anterior to median ocellus mostly black; postnodal crossveins 9-11 in forewings, 8-10 in hindwings; hindwing length



Figs 6-10. Structural features of *Telebasis simulata* (Fig. 6), *T. sanguinalis* (Figs 7-9) and *T. corallina* (Fig. 10): (6-7) penis, lateral view: (6) *T. simulata*, (7) *T. sanguinalis*; — (8) *T. sanguinalis*, male anal appendages, lateral view; — (9-10) middle and hind lobes of female prothorax plus anterior portion of pterothorax, dorsal oblique view: (9) *T. sanguinalis*, (10) *T. corallina*.

15.0-15.6 mm, abdomen length 22.5-24.0 mm, and total length 28-30 mm. Hind lobe of several females have short anteriorly directed lobes that extend about 1/4 length of the middle lobe, and cerci 0.32-0.38 mm long. Male measurements (mm): total 27.0-31.0, hindwing 13.8-15.5, abdomen 21.5-25.3; females: total 28.2-31.5, hindwing 15.5-16.8, abdomen 21.5-25.5. Male cerci length ranged from 0.52-0.63 mm.

DIAGNOSIS AND DISCUSSION

Telebasis simulata and *T. sanguinalis* belong to a small group of reddish species in which the male cercus has an elongate, lateral seam (Figs 2 & 8) and that includes also *T. carmesina* Calvert, *T. corallina* (Selys), and *T. milleri* Garrison (see BICK & BICK, 1995, p. 16, couplet 9-11; and GARRISON, 1997). *T. milleri* is distinct from others in this group by its large size (hindwing 17.5-20 mm long), red labrum, short cercus (length about 0.34 mm, only slightly longer than the paraprocts), diamond-shaped in lateral view, without a basoventral tooth; the prothoracic horns in females are small and anterodorsally directed. In *T. carmesina*, the hind lobe of the prothorax is black, the ventral margin of the male cercus is markedly concave in lateral view and the apex bears two large black teeth; the hind prothoracic lobe of the female is not erect and the short "horns" are tapered and sharply pointed. Bill Mauffray and I collected *T. carmesina* in a shallow pond 15 km NW of San Ignacio, Velasco Province, Santa Cruz Dept., Bolivia, a new record for this country.

T. simulata closely resembles *T. corallina* and *T. sanguinalis*. In *T. corallina*, the rear of the head has large black spots (about 0.35 × 0.60 mm) that are roughly rectangular and narrowly connected dorsally to the black of the occiput. The male cerci in lateral view are thick, the length to width ratio being about 1.4 to 1.6. Females of *T. simulata* key to *T. corallina* in BICK & BICK (1996) because of the long prothoracic lobes. In *T. corallina* females, the hind lobe of the prothorax is low and the tubercle distal to the mesostigmal plates bears a small lobe which projects ventrally and slightly anteriorly (Fig. 10). The range of *T. corallina* largely overlaps that of *T. simulata*, as it has been recorded from Cuba, the Lesser Antilles, Costa Rica, Venezuela and Brazil. WESTFALL & MAY (1996) reported that the *T. sanguinalis* record for Cuba by ALAYO (1968) was *T. corallina*, as was the record by DONNELLY (1970) for Dominicana.

I studied three specimens of Calvert's original series of *T. sanguinalis* (Chapada, Brazil, deposited in Carnegie Museum) to compare with my specimens from Bolivia and with specimens ranging from northern Brazil to Trinidad determined by other workers as *sanguinalis* (described above as *T. simulata*). The main color pattern differences between *T. simulata* and the true *T. sanguinalis* are: (1) rear of head half black/half pale in *simulata*, mostly pale in *sanguinalis* (except for two small circular dark spots, diameter 0.10-0.15 mm, near the occipital foramen); (2) black mesepisternal stripes wide in *simulata* (0.30-0.35 mm wide and occupying about 1/3-2/5 mesepisternal width), narrow in *sanguinalis* (0.08-0.22 mm wide and occupying at most 1/4 of mesepisternal width in dorsolateral view). Morphological differences in males are: (1)

cerci about 1.6-1.8 times as long as paraprocts in *simulata*, about 2.0 in *sanguinalis*; (2) cercus length 2.0-2.1 times its width at midlength in lateral view in *simulata*, 2.2-2.3 times in *sanguinalis* (Fig. 8); (3) tip of paraproct blunt and rounded in *simulata* (Fig. 2), slender and pointed in *sanguinalis* (Fig. 8); (4) translucent dorsal flap of terminal penile segment rectangular in lateral view, gradually tapered to posterolateral angle in *simulata* (Fig. 6), with a posterolateral lobe-like extension in *sanguinalis* (Fig. 7), plus the anterolateral corner is acute in *simulata* vs obtuse in *sanguinalis*. The degree of curvature in the ventral margin of the cercus, between the basal and apical teeth, is intermediate between *T. sanguinalis* (nearly straight) and *T. corallina* (markedly concave). Figure 8 in BICK & BICK (1995), given as a lateral view of the cercus of *T. sanguinalis*, is actually of *T. simulata*. One of the Calvert specimens has "Type" on the label; I have designated this specimen as the lectotype.

Differences between females of *T. simulata* and *T. sanguinalis* are: (1) hind lobe of prothorax with dorsal, anteriorly-directed processes rudimentary to short, not reaching middle lobe or extending about 1/4 length of middle lobe at most in *simulata* (Fig. 5) vs extending about 1/2 to 2/3 its length in *sanguinalis* (Fig. 9); (2) lateral margins of prothoracic posterior rim more erect in *simulata* (Figs 5 & 9); (3) tubercle distal to mesostigmal plate mostly black in *simulata*, pale in *sanguinalis*; (4) middorsal carina of abdominal segment 10 orange brown in *simulata*, black in *sanguinalis*. In the original description of *T. sanguinalis*, CALVERT (1909) stated that the hind lobe of the female prothorax has "two slender thin processes directed forward and applied for their whole length against the dorsal surface of the middle lobe reaching to one half of its length." BICK & BICK (1995) referred to these processes as "horns", stating that the *T. sanguinalis* specimens they examined had only small horns, scarcely reaching 1/4 the length of the middle lobe. In their subsequent study on females of the genus (BICK & BICK, 1996) they stated that the processes in *T. sanguinalis* ranged from minute to 1/3 the length of the middle lobe. Unknown to them, the specimens they studied were *T. simulata*, not *T. sanguinalis*.

Although *T. simulata* and *T. sanguinalis* are sibling species, their ranges as currently known are allopatric. Records of *T. sanguinalis* for Brazil, Surinam, Trinidad, and Venezuela must be removed from its range and referred to *T. simulata* based on specimens I have seen in the FSCA and other collections. The Trinidad record of *T. sanguinalis* by MICHALSKI (1988), based on GEIJSKES (1932), must be deleted and replaced with *T. simulata*. The record for French Guyana, based on TSUDA (1991), undoubtedly must be referred also to *T. simulata*, although I have not seen specimens from there. *T. sanguinalis* was listed for Bolivia by Paulson (<http://www.ups.edu/biology/museum/ODofSA.html>), undoubtedly based on a specimen in the FSCA collected by J. Steinbach in the Buena Vista area, Ichilo Province, and identified by M.J. Westfall in 1987 and G.H. Bick in 1993. I examined this specimen and agree it is the true *T. sanguinalis*. Jerrell J. Daigle collected several specimens of *T. sanguinalis* at a small pond S of Buena Vista in Feb. 2000, which confirms Steinbach's record. I collected *T. sanguinalis* in eastern Bolivia, Velasco Province, in a shallow pond about

14 km NW of El Carmen de la Ruiza, 11 Nov. 1999, roughly 500 km W of the type locality.

GEIJSKES (1943) collected and described larvae of *T. simulata* (which he identified as *T. sanguinalis*) "between the stems of *Heleocharis* in a flat savannah pool" in Surinam. The adult *T. sanguinalis* I collected in Bolivia were flying low in sparse emergent vegetation at the shallow end of a large open pond, between 3:00 and 4:00 p.m. Other Zygoptera collected at this location were *Lestes forficula* Rambur, *Acanthagrion* sp., *Helveciagrion simulacrum* (Calvert), and *Telebasis carminita* Calvert.

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