

**THE FEMALE OF *LIBELLULA (HOLOTANIA) GAIGEI* GLOYD, 1938
(ANISOPTERA: LIBELLULIDAE)**

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The female of *Libellula gaigei* Gloyd from Mexico is described and differentiated from the females of *L. croceipennis* Selys and *L. saturata* Uhler. The wings and genitalia are figured.

INTRODUCTION

The neotropical dragonfly, *Libellula gaigei* Gloyd of the subgenus *Holotania*, is known from few specimens. The species was described by Gloyd (1938) from two males in the Museum of Zoology at the University of Michigan taken in 1932 at Dzadz Cenote, Yucatan. Largely because of a similarity in wing coloration, these specimens were previously recorded (WILLIAMSON, 1936) as *Belonia croceipennis* (Selys). Apparently the species was not taken again until DONNELLY (1967) collected several males at Tikal, Guatemala, in 1964.

Additional specimens, a male and female, were collected in southern Mexico by the author in 1968. These two individuals were not observed in copulation, but their similarity and the differences distinguishing the female from other females of the genus *Libellula* strongly suggest that it represents *L. gaigei*.

DESCRIPTION OF FEMALE

Labium tawny becoming paler toward hind margin and sides, labrum tawny; base of mandibles yellow-brown, tips black; ante- and postclypeus olive-brown; frons and vertex slightly darker; base of antennae dark brown, remainder black;

vesicle of vertex with small median notch; eye seam short, occiput dark brown ringed with yellow-brown along edges; postgenae reddish-brown, yellow-brown ventrally.

Prothorax reddish-brown, frontal and hind lobes ringed with paler reddish-brown; pterothorax reddish-brown, slightly darker on dorsum and front, spiracle and denticles on antealar crest black; entire thorax thinly clothed with reddish-brown hairs, reduced on sides.

Legs reddish-brown, darker than thorax; tarsi and tips of tibiae dark reddish-brown, armature black.

Wings (Fig. 1) with the basal band of orange as in male, but much lighter in color; forewing band extending in front distally to nodus, following M_{1+2} basally to beginning of bridge, then receding slightly posteriad to wing margin; orange covering first 6-7 cells between Cu_1 and Cu_2 ; orange band in hind wing as in forewing, but receding more sharply to wing margin, terminating 1-2 cells distally from toe of anal loop. Venation within orange bands bright orange,

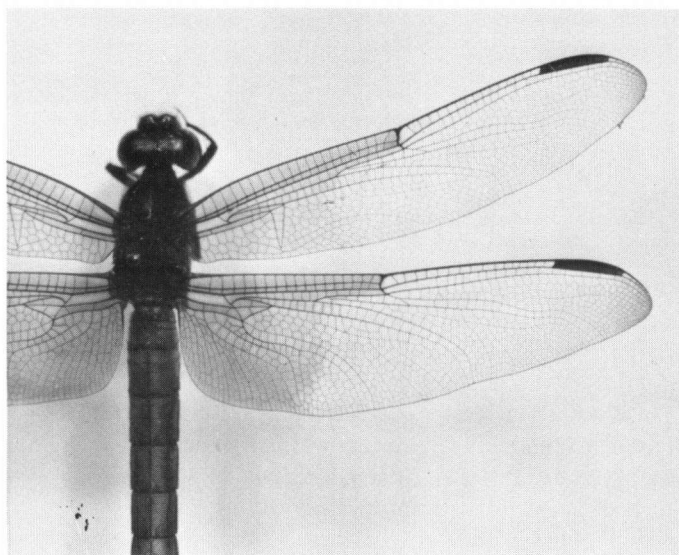


Fig. 1. *Libellula gaigei* Gloyd, female. Dorsal view.

venation otherwise black, remainder of wings hyaline with smoky wing tips extending basally to pterostigma in forewing, slightly past pterostigma in hind wing; pterostigmas very dark reddish-brown. Base of hind wing narrower than in male with tornus more rounded. Venational characters and measurements shown in Table 1.

Table I
Venational characters of *Libellula gaigei* Gloyd
(HW = hind wing; – FW = forewing; – cs = crossveins; –
L = left; – R = right)

Character		Male Holotype (Gloyd, 1938)	Male, Veracruz, Mexico, 1968	Female Veracruz, Mex., 1968
Length	HW	41-42 mm	41.9 mm	31.1 mm
Ptero- stigma	FW	L R	L R	L R
		6-6 mm	5.8-5.8 mm	6.7-6.7 mm
	HW	6-6 mm	5.8-5.8 mm	6.7-6.7 mm
Antenodal cs	FW	24-22	26-23	22-21
	HW	17-17	19-18	18-17
Postnodal cs	FW	17-16	15-17	15-15
	HW	16-20	17-16	16-16
Crossveins in subtriangle	FW	5 (8 cells) - 6 (10 cells)	5 (7 cells) - 5 (6 cells)	3 (4 cells) - 3 (4 cells)
	HW	2-3	2 (3 cells) - 2 (3 cells)	2 (3 cells) - 1 (2 cells)
Supratri- angular cs	FW	4-4	3-2	4-3
	HW	1-1	1-2	1-1
Subtri- angle cells	FW	14-14	17-16	10-10
Cubito- anal cs	FW	2-3	2-2	3-3
	HW	2-2	2-2	2-2
Bridge cs	FW	6-6	4-5	5-5
	HW	5-5	4-6	5-5
Trigonal interspace	FW	8 cells, then L-irregularly by 7 cells	8 cells, then irregularly by 8 cells	6 cells, then irregularly by 6 cells to 4 cells
		7 cells, then R-irregularly by 5 cells	7 cells, then irregularly by 8 cells	6 cells, then irregularly by 6 cells to 4 cells

Abdomen (33.1 mm long) relatively stout, tapering slightly, segment 8 with large lateral expansions. Dorsum pale orange becoming darker with more reddish-brown posteriorly; lateral and dorsal carinae black; denticles on intersegmental sutures black, lateral projections of segment 8 dark brown (Fig. 2 a); underside of abdomen pale yellow-brown, continuous with sides of abdominal tergites 1 and 2, but contrasting with deep reddish-brown on dorsum of tergites 3 to 10; sternites 1 and 2 concolorous with underside of tergites, but darker in middle¹; paraproct olive-brown, cerci reddish-brown. Vulvar lamina process forming two widely divergent flaps (Fig. 2 b) opposite each other and somewhat perpendicular to longitudinal axis.

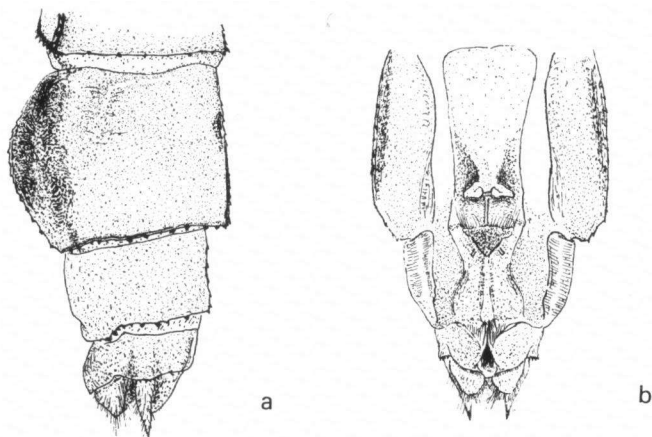


Fig. 2. Abdominal appendages and vulvar lamina of female *Libellula gaigei*. Lateral (a) and ventral (b) views.

Collection locality. 11 mi. S. of Tecolutla, Veracruz, Mexico, near Mex. Hwy. 180, 31 July 1968, coll. Rosser W. Garrison. To be deposited in the U.S. National Museum, Washington, D.C.

Diagnosis. The female is distinguished from females of all other *Libellula* species by the conspicuous, well-defined orange wing bands; females of two predominantly red species, *L. saturata* Uhler and *L. croceipennis* Selys, lack these bands. Females of *L. saturata* have the entire costal area tinged with yellow, whereas the area distal to the nodus is hyaline in the female of *L. gaigei*. Female *L. saturata* also lack the smoky wing tips present in *L. gaigei*, and the

¹ Sternites 3 through 7 were removed in the field after capture so that the contents of the abdomen could be removed, to promote faster drying of the specimen and better color preservation.

lateral projections of abdominal segment 8 are dark brown in *L. gaigei*, not yellow or orange as in *L. saturata*. The pterostigmas of the female *L. gaigei* are slightly longer than those in females of *L. saturata* (4.5-5.5 mm) and *L. croceipennis* (5.5-6.5 mm) (NEEDHAM & WESTFALL, 1955).

Additional remarks. Compared to the male, the venation (Table 1) is sparser, and the pterostigma is slightly longer (6 mm for holotype male, 6.7 mm for female). Coloration is less intense.

Very little is known about the biology of this species. Dr. T.W. Donnelly (pers. comm.) believes that it is a forest dweller. My specimens were taken less than 25 yards apart on a beach covered with thick shrubs about ten feet high. No fresh water was seen in the immediate vicinity. Both individuals rested on twigs, the male making several short sorties about 15-20 feet in the air, but always returning to the same perch.

This is the most westerly record for the species, and it is about 600 miles west of the type locality. Thorough collecting should provide a much better idea of its distribution.

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