

LESTES TIKALUS, N. SP. AND OTHER ODONATA FROM GUATEMALA

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Except for general surveys analyzed by Calvert (1901-1908, 1919a, 1919b) there have been no regional studies of Odonata in Guatemala. A small collection which augments knowledge of this area was made between January and May, 1956, as part of an entomological survey in the Department of Petén by Drs. Theodore H. Hubbell, Irving J. Cantrall, and Paul F. Basch, of the University of Michigan Museum of Zoology. A report on Pscoptera (Mockford, 1957) marked the first of a series to appear on the project which was supported by a grant from the Faculty Research Fund of the Horace H. Rackham School of Graduate Studies, University of Michigan.

Most of the specimens were taken in the vicinity of Tikal and Poptún in Petén, and constitute the first survey of Odonata from that area. Williamson's report (1936) on Yucatan dragonflies is the most proximal regional study. The present collection comprises 210 specimens, representing 22 genera and 34 species in six families. Included in the sample are: the plesiallotype female of *Hetaerina pilula*; a holotype male and allotype female of *Lestes tikalus*, new species; a well preserved male of *Gynacantha helenga* which enabled an expanded description of coloration in that species; and two species previously unknown in Guatemala, *Gomphoides sausa pacifica* and *Gynacantha helenga*.

Analysis of the odonate fauna of Petén reveals its tropical American aspects. Of the 34 species recorded here: 19 are widely distributed in Mexico, Central and South America, with 12 of these also occurring in the West Indies; nine are restricted to Mexico and Central America, two to Mexico, Central America and the West Indies, and one to Central and South America; three occur only in Central America. Sixteen of the species have been previously reported and 13 are here recorded, apparently for the first time, from the Yucatan Peninsula.

The vegetation of Petén has been described by Lundell (1937). L. C. Stuart's (MS) description of the Tikal area is the basis for the following notes. Tikal, in the central portion of northeastern Petén, is physiographically situated in the southeastern part of the Yucatan Peninsula on an elevated plateau, the maximum elevation of which is 300 meters. The rolling, poorly drained upland is pitted with depressions; the smaller of these are filled with water during the wet season and are known locally as *aguadas*. The larger depressions, covering many square kilometers, flooded during the wet season and drying out in dry seasons except for occasional *aguadas*, are termed *akalches* (Mayo) or *bajos* (Spanish). Tikal lies in a luxuriant and deciduous quasi-rainforest in which zapote (*Achras*, chicle tree) is the more important element. In the *bajos* there is a low forest (canopy 15 to 20 meters high) with considerable light penetrance; the *aguadas* are typically surrounded by high forest of heavy canopy and contain abundant growths of water plants and tall sedges. Rainfall is estimated to be 160 to 180 cm, with March probably being the driest month. Calvert (1908b) gives the mean annual temperature of Petén as 25° to 30°C.

Aguada Sibal, adjacent to the campsite at Tikal and the source of much of the material reported below, is surrounded by zapotal grading to the east into a bajo. It is about 345 x 255 ft, and estimated to be three ft deep. The aguada is conspicuously well-zoned; on the periphery are several large Bucute trees followed by tall cane (15 ft) and then zones of Mimosa and bullrush, the latter varying 10 to 50 ft in width. Open water is virtually absent due to the abundant growth of floating *Lemna*, *Spirodela*, *Wolfia*, and *Pistia*.

Vegetation in the vicinity of Poptún, some 100 kilometers S. S. E. of Tikal in southeastern Petén, is in sharp contrast to the zapotal of the Tikal region, according to field observations of Hubbell and Cantrall. The country is a flat lowland from which arise abruptly many limestone knobs to heights estimated as 400 ft. at most. There is open forest of Caribbean Pine which attains heights of 60 to 70 ft; the meadowlike appearance, with open clumps of low shrubs, gives way to hardwoods to the south. According to the observers, the region, "looks very much like high pine in southwest Georgia." North of Poptún there is a stream bed with steep (2 to 4 ft) banks and some 30 ft wide in which a shallow stream two ft wide trickled in the dry season; southeast there is a drainage way bordered by shrubs and trees.

Minor collections were made in the following localities: Coban, Department Alta Ver Paz; Finca La Paz, Department San Marcos; Panajachel, Department Sololá; Puerto Barrios, Department Izabal; Tiquisate, Department Escuintla. In the list of species, the field collection number appears in parentheses after the abbreviation of the collector (IJC=Irving J. Cantrall; THH=Theodore H. Hubbell; PFB=Paul F. Basch.) Specimens are deposited in the Museum of Zoology of the University of Michigan. I am indebted to Leonora K. Gloyd for determinations of the species of *Argia* and *Argiallagma*, and to Irving J. Cantrall for criticizing the manuscript.

Calopterygidae

Hetaerina cruentata (Rambur). Finca La Paz: in meadowlike cafetal along Buena Vista Creek, 4200 ft, 2 to 2:30 PM, May 3, THH(235), 1♂; along Miraflor Creek, 3600 ft, May 6, THH (254), 2♂. Miraflor Creek is described by the collector as a swift mountain brook, about a foot deep and 3 to 4 ft wide, flowing in a narrow steep valley with heavily vegetated slopes, and with large boulders and pools in the stream.

Hetaerina titia (Drury), "tricolor" wing pattern. Along steep and partly shaded banks of Río San Pedro at gate to military camp on road north of Poptún, April 16, THH+IJC(181), 1♂.

Hetaerina pilula Calvert. Poptún, in small clearing in gallery forest along large pool in Río San Pedro, 8:30 to 10 PM, April 16, THH+IJC(178), 2♂. According to the collectors, the river is a succession of deep (to 10 ft) and clear pools with narrower and swifter reaches, some with rapids of small size over limestone rocks.

This is apparently the first record of this species from the Yucatan Peninsula.

Hetaerina pilula, Plesiallotype Female (fig. 3). A female, collected with the two males of *pilula*, was initially identified as *H. macropus* according to Calvert's (1901) key. It differed from *macropus* in several characters, notably in the presence of two spines on the dorsoapical margin of abdominal segment 10, one on each side. These spines are shorter and more slender than the spine which continues the middorsal carina. Comparison of the female with the description of the male of *Hetaerina pilula* indicated that this was the undescribed female of that species. The specimen was sent to Calvert for an opinion; his reply (August 8, 1957) contains the following: "Your Guatemala female does not differ more . . . from the description of *pilula* male than do females of *macropus* from *macropus* males; bearing this in mind I think it would be safe to call it *pilula*."

The female differs from the description of the male (Calvert, 1901, pp. 33-34) as follows:

Head with nasus with a cupreous metallic reflection, vertex metallic dark green with a coppery-yellow reflection.

Prothorax and thoracic dorsum without coppery-red reflection; a narrow metallic green band along the thoracic carina, widened posteriorly to the humeral suture; a metallic green band on each of the mesepimeron, metepisternum, and metepimeron, that of mesepimeron interrupted posteriorly at three-fourths its length; yellow humeral stripe four to five times wider than the dark brown of the same side of the thoracic dorsum.

Abdomen with a small dorsolateral metallic green spot on segment 1; an elongate dorso-lateral green spot extending one-half the length of segment 2; segment 10 with middorsal carina extended and elevated as a slender black spine; two dorsoapical spines on segment 10,

one on either side of the middorsal spine, one-half as long and more slender than middorsal spine; ventrolateral apical spines (2 on left, 3 on right) and ventroapical spines, one on each side, as long as the two dorsoapical spines.

Appendages nearly as long as segment 10, conical, acute; genital valvules extend to ventral apex of tergum of segment 10, apical half of inferior margin denticulated.

Stigma obscure in color, surmounting less than one-half cell on all wings; tip of each wing unicolorous with rest of wing, not brown; coppery-red metallic reflection on longitudinal veins from R_1 to lower sector of arculus and outward to beyond nodus, otherwise no coloring of the wing to represent the coloring of the base of the wing in the male; median cross veins, 6 in forewing, 7 in hindwing (vs. 9 in male); quadrilateral crossveins, 6 in forewing, 5 in hindwing (vs. 7-9 in male); antenodal crossveins, 23 in left forewing, 21 in right forewing, 22 in left hindwing, 23 in right hindwing (vs. 22 in male).

Abdomen, 34 mm; hindwing, 30 mm

The plesiallotype female, labeled, "Guatemala: Department Petén, Poptún, April 16, 1956, I. J. Cantrall and T. H. Hubbell, #178," is deposited in the type collection of the University of Michigan Museum of Zoology.

The following modification in Calvert's key (1901, p. 21) will permit separation of *macropus* and *pilula* females.

f. Pterostigma, if present, obscure in colour.

- f₁. A dorsolateral apical spine on each side of spine which continues the middorsal carina.....9. *pilula*
 f₂. No dorsolateral apical spine on each side of spine which continues the middorsal carina.....10. *macropus*

Lestidae

Lestes tenuatus Rambur. Tikal: along trail to Great Plaza, April 8, THH+IJC(145), 1♂; Aguada Sibal, April 8, THH+IJC(147), 1♀; around periphery of Aguada Sibal, 3 to 4 PM, April 11, THH+IJC(160), 7♂; along first three-fourths mile of trail to Aguada Naranja in low shrubbery and small trees, May 14, THH(271), 2♂, 1♀; west and south sides of Aguada Sibal in zone to knee-to to thigh-high herbage, 4 to 5:30 PM, May 17, THH(278), 3♂, 1♀. Poptún, in pine savanna at outskirts of city, 2 to 5 PM, April 14, THH+IJC(170), 1♀.

Lestes tikalus, new species.

Figures 1, 2, 4, 5

Holotype male.—Labium brownish yellow, movable spine of palpus black; mandibles yellowish-brown to brown at base, black at tips; labrum pale blue becoming brown; anteclypeus blue becoming black; postclypeus and frons brown to black (a narrow yellow line along dorsoanterior edge of postclypeus in holotype); vertex dark metallic green darkening to black; posterior of epicranium with broad border of dark brown; rear of head becoming pruinose, pale but with considerable black in older individuals, pale yellowish-brown to brown around foramen.

Prothorax becoming wholly pruinose over a yellowish-brown base color. Thorax becoming wholly pruinose, base color brown; middorsal thoracic carina yellow (brown in older individuals and continuous with narrow border of brown); each mesepisternum with a metallic green stripe extending from basal ramus, one-fifth to one-fourth as wide as mesepisternum itself, narrowing posteriorly before abruptly widening ventrally at five-sevenths its length to about one-half the width of the mesepisternum, separated from the middorsal carina and antealar carina by a brown area as wide as the anterior width of the stripe, separated from humeral suture by a pale to dark brown stripe (wider anteriorly) plus pruinose blackish which together are twice as wide as the stripe; mesepimeron pale brown with a centrally located metallic green stripe, roughly triangular in form with the apex posterior, one-half the width of the mesepimeron at base and in older individuals grading imperceptibly into dark brown which also covers the metepisternum posteriorly from the spiracle; metepisternum in younger individuals pale brown, dark brown around the spiracle; an elongate black spot ventrally on both the anterior and posterior end of the metepimeron which is pale brown

anteriorly, dark brown posteriorly. Femora brown, with three black lines which are superior, anterior, and inferior, respectively. Tibiae dark above, pale below; tarsi black.

Wings reaching to middle of abdominal segment 6; membrane hyaline, wing veins and stigma brownish black. Postnodals: forewings, 9-12 on left, 10-11 on right; hindwings, 8-12 on left, 9-11 on right. M stem arises at the lower fourth of the upper limb of the arculus; R_s and M_3 at or slightly distal to level of apex of quadrangle; M_2 at midlevel between third and fourth to midlevel between fourth and fifth postnodal in forewing, at or before third to midlevel between third and fourth in hindwing; anal cross vein at considerably before the midlevel of antenodals in forewing, just or considerably before in hindwing. M_{1a} is zig-zag its full length. M_3 reaches hind end of wing at or beyond level of outer end of stigma in both wings. Stigma surmounts two cells. Cu_2 12-19 cells long in forewing, 10-15 in hindwing.

Abdomen becoming pruinose on segments 1, 2, and 7-10; dark metallic green becoming black dorsally; brown laterally on segments 1-6; segments 7-10 dark brown; segments 1-7 with a basal, dorsally-interrupted transverse pale blue ring, 2-6 with a lateroapical pale blue spot which becomes black. Pattern otherwise obscure.

Superior appendages 1.5 times as long as side of segment 10, two-thirds the length of segment 9; brown at base, black apically. In dorsal view, appendages curved toward each other in their distal halves, distal margin of outer edge denticulate; inner edge of each appendage bears at one-fifth its length an acute tooth directed mesocaudad followed by a lamina with an almost straight nondenticulated margin for about one-fourth the length of the appendage, the lamina terminating in an acute caudomesad-directed spine, which is succeeded by a concavity, and this in turn by a small rounded triangular protuberance at two-thirds of the appendage length; distal half of appendage bearing a dorsal groove on the proximal three-fourths. In profile view, the proximal two-thirds almost straight, the distal third curved downward.

Inferior appendages nearly or fully as long as superiors, brownish-black, uniformly curved toward each other. In profile view, the proximal two-fifths wider than distal three-fifths.

Abdomen (including appendages), 31.3 mm (29.5-33.0); hindwing, 19.9 mm (19.0-20.5); stigma, 1.3 mm.

Described from five males from Guatemala as follows: Department Petén, Tikal, March 7, 1956, I. J. Cantrall, No. 101, 1♂ (HOLOTYPE); Department Petén, Uaxactún, May 6, 1931, A. Murie, 2♂; Department Izabal, Los Amates, June 22, 1909, E. B. Williamson, 2♂. The specimens are deposited in the University of Michigan Museum of Zoology except for one paratype male from Uaxactún which is deposited in the Academy of Natural Sciences of Philadelphia. The specimens from Uaxactún and Los Amates were found among a series of undetermined *Lestes* in the UMMZ.

Allotype female.—Head as in male except labrum black, clypeus brown and lacks yellow stripe.

Prothorax as in male. Thorax color pattern as in male except as follows: middorsal thoracic carina pale, not bordered by black; mesepisternum lacking pruinose black area; mesepimeron and metepisternum lacking dark brown except around spiracle.

Wings as in male except as follows: postnodals in forewings, 10 on left, 11 on right, and in hindwings, 10 on left, 11 on right; M_2 arises just beyond midlevel of third and fourth postnodal in forewing, just beyond third postnodal in hindwing; M_3 reaches hind end of wing at level of middle of stigma in hindwing; Cu_2 in forewing 16 (left), 17 (right) cells long, in hindwing 14 (left), 13, (right).

Abdomen with slight pruinosity on segments 1 and 8; slight metallic green reflection on segments 2-4, otherwise brownish-black; basal rings on segments 3-7 pale (blue?); segments 2-5 with lateral apical pale (blue?) spot. Appendages brownish-black.

Ovipositor black with brown area dorsad on base of outer valves; cerci as long as side of segment 10; valves extend as far as the extreme end of the abdomen; posterolateral margins of basal plate of ovipositor angulate, the angle produced into an acute process almost as long as length of basal plate.

Abdomen (including appendages), 29 mm; hindwing, 20.3 mm; stigma, 1.3 mm.

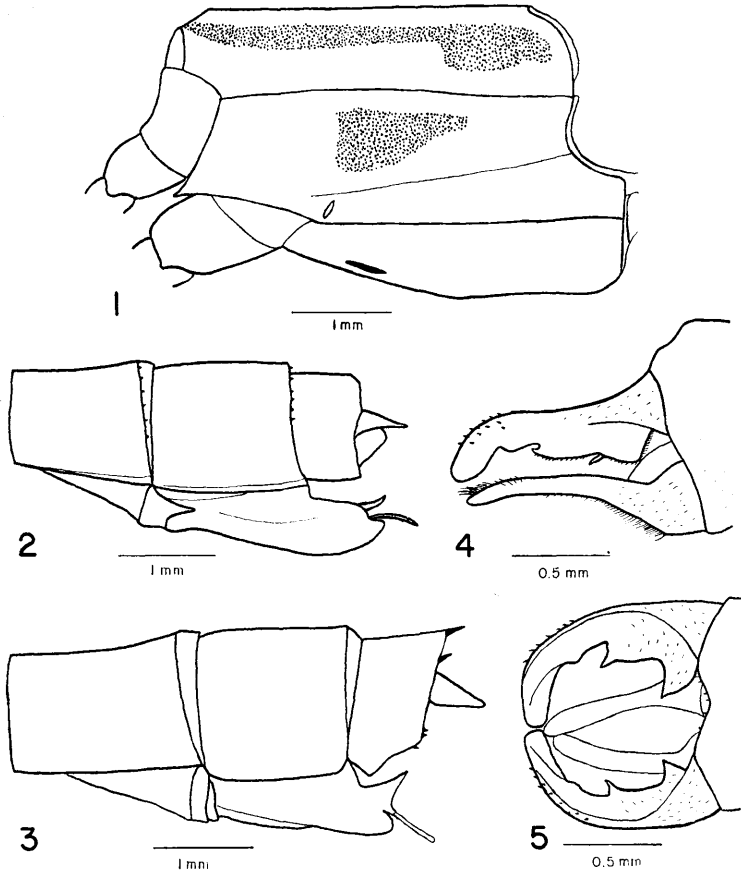


FIGURE 1. Pterothorax color pattern of allotype female of *Lestes tikalus*, n. sp.
 FIGURE 2. Abdominal segments 8-10 of allotype female of *Lestes tikalus*, n. sp.
 FIGURE 3. Abdominal segments 8-10 of plesiallotype female of *Hetaerina pilula* Calvert.
 FIGURE 4. Lateral view, anal appendages of holotype male of *Lestes tikalus*, n. sp.
 FIGURE 5. Superior oblique view, anal appendages of holotype male of *Lestes tikalus*, n. sp.

Described from a single female labeled, "Guatemala: Department Petén, Tikal, February 20, 1956, I. J. Cantrall, #59," and deposited in the type collection of the University of Michigan Museum of Zoology.

The female is considered to be correctly associated with the male because of the similar peculiarities of the color pattern of the thorax, venation of the wing, and capture in the same locality (campsite at Tikal).

The relationships of *Lestes tikalus* are those with typical species of the genus. The male superior appendages are nearest *Lestes scalaris* (Calvert, 1909, p. 94 and Pl. I, fig. 18) in regard to the inner edge except that the lamina in *tikalus* terminates in an acute spine much as in *L. mediorufus* (Calvert, 1909, pp. 97-98 and Pl. II, fig. 24). The inferior appendages in *tikalus* are as long as the superiors, whereas in *scalaris* they are noticeably shorter. The thoracic color and color pattern of *tikalus* is different from *scalaris*, but grossly similar to that in *forcicula* (Klots, 1932, p. 77; Clavert, 1928, pp. 5-8; and when compared with a series of 13 males in the University of Michigan Museum of Zoology collection including 2 from Cuba, 2 from Mexico, 3 from Jamaica, and 6 from the Dominican Republic). In *tikalus* the mesepisternal stripe is abruptly widened ventrally to twice its width at the upper end whereas in *forcicula*, widening, if present, is slight and uniformly gradual; the mesepimeron stripe is

two to three times wider than that in *forficula*: inner edge of appendages of the male *tikalus* bears a second spine as long as the basal one, with the intervening lamina smooth whereas in *forficula* there is no second spine and the lamina is denticulated.

The following modifications in Calvert's key (1901, p. 48) will permit separation of *Lestes tikalus* from *L. forficula*:

- aa. Each mesepisternum with a metallic green stripe one-fourth to one-sixth (or less) as wide as mesepisternum itself, upper end usually widened.
 - aa₁. Upper end of mesepisternal green stripe not abruptly widened, if at all; mesepimeron stripe narrow, one-eighth to one-tenth as wide as long; superior appendages of male with an acute basal tooth and a convex median dilatation on inner side, the lamina of which is denticulated; inferiors almost as long as the superiors, reaching beyond the level of the apex of the median dilatation thereof. 4. *forficula*
 - aa₂. Upper end of mesepisternal green stripe abruptly widened to about twice its width; mesepimeron stripe roughly triangular in form, about as wide anteriorly as long; superior appendages of male with an acute basal tooth and a median dilatation on the inner side, the lamina of which is non-denticulated and terminates in an acute tooth as long as the basal one; inferiors as long as the superiors. 18. *tikalus*

The habitat of *Lestes tikalus*, based on the tikal material, appears to be aguadas (see description of Aguada Sibal *antea*) in lowlands and coastal plains (Los Amates).

Coenagrionidae

Argia extranea (Hagen). Finca La Paz, in cafetal near Santa Teresa Creek, 3500 feet, May 3, THH, 1♂. Panajachel: on shore of Lago Atitlan, January 20, IJC(3), 2♂; in cafetal and along small irrigation ditches, 10 to 12 AM, April 29, THH(213), 1♂, 1♀.

Argia fissa Selys. Coban, on grass and low leafy shrubs, May 1, PFB(1), 1♀.

Argia frequentula Calvert. Poptún: April 16, THH+IJC(178), 2♂, 2♀ (see *Hetaerina pilula*); in monte, along road from Poptún to San Luis, April 20, THH+IJC(196), 4♂, 1♀.

This is apparently the first record of this species from the Yucatan Peninsula.

Argia oculata Hagen. Poptún, in gallery forest along Río San Pedro, April 16, THH+IJC(17), 1♀.

This is apparently the first record of this species from the Yucatan Peninsula.

Argia ulmeca Calvert. Poptún: April 16, THH+IJC(180), 1♂ (same as 178, see *Hetaerina pilula*); April 16, THH+IJC(181), 1♂ (see *Hetaerina titia*).

Argiallagma minutum (Selys). Tikal: in a zone of *Panicum* on west edge of aguada at camp, February 20, IJC(58), 1♂; adjacent to aguada at camp, February 20, IJC(59), 4♂, 3♀; at Aguada El Naranjo, April 11, THH, 2♂.

This is apparently the first record of this species from the Yucatan Peninsula.

Anisagrion allopterum Selys. Panajachel: January 20, IJC(3), 1♀ (see *Argia extranea*); in sunny open corner of cafetal, April 28, 1560 meters, THH(208), 1♂; April 29, THH(213), 3♂, 3♀ (see *Argia extranea*).

Anisagrion lais (Brauer). Panajachel, April 28, THH(208), 1♂ (see *Anisagrion allopterum*).

Enallagma coecum novae-hispaniae Calvert. Poptún, April 16, THH+IJC(181), 1♂ (see *Hetaerina titia*).

This is apparently the first record of this species from the Yucatan Peninsula.

Telebasis filiola (Perty). Tikal, April 11, THH+IJC(160), 2♂, 1♀ (see *Lestes tenuatus*).

Telebasis salva (Hagen). Tikal, April 11, THH+IJC(160), 1♂ (see *Lestes tenuatus*).

Leptobasis vacillans Selys. Tikal: resting on vegetation along edge of Aguada Sibal, February 15, IJC(49), 2♂; February 20, IJC(58), 1♂, 1♀ (see *Argiallagma minutum*); February 20, IJC(59), 1♂, 1♀ (see *Argiallagma minutum*); Aguada Sibal, April 8, THH+IJC(147), 1♀ (see *Lestes tenuatus*); April 11, THH+IJC(160), 10♂, 8♀ (see *Lestes tenuatus*); May 17, THH(278), 2♀ (see *Lestes tenuatus*).

Ischnura ramburii (Selys). Tikal: at lamp-light at table in camp, April 10, THH+IJC(100), 1♂; in guarumal south of road from camp to airstrip, collecting by headlight, 7 to 10 PM, April 12, THH+IJC(164), 1♀.

Anomalagrion hastatum (Say). Puerto Barrios, in center of town on a low carpet-grass covered fill over a former mangrove swamp, January 30, IJC(20), 1 ♀. 5.4 miles south of Puerto Barrios, sweeping at night, February 1, IJC(21), 1 ♂. Coban, May 1, PFB(1), 1 ♀ (see *Argia fissa*).

Ceratura capreola (Hagen). 5.4 miles south of Puerto Barrios, February 1, IJC(21), 1 ♂, 1 ♀ (see *Anomalagrion hastatum*).

Gomphidae

Gomphoides sausa pacifica Selys. Poptún, April 14, THH+IJC(170), 1 ♂ (see *Lestes tenuatus*).

This is the southernmost record of this subspecies previously unrecorded in Guatemala; Calvert (1919) reported *G. s. sausa* in Guatemala.

Aeshnidae

Aeshna (Hesperaeschna) psilus Calvert. Finca La Paz, Municipio de la Reforma, in house, May 3, THH, 1 ♀.

Triacanthagyna septima Selys. Tikal: flying at dusk near aguada, February 13, IJC, 1 ♀; flying at dusk around camp, April 8, THH+IJC(101), 1 ♀.

This is apparently the first record of this species from the Yucatan Peninsula.

Triacanthagyna ditzleri Williamson. Tikal, about dusk around camp, May 16, THH(274), 1 ♀.

Williamson (1923) gives the maximum length of the stigma in the front wing as 3.6 mm; in the female from Tikal that length is 3.9 mm although other mensurable features are as stated in Williamson's description. The Tikal specimen is apparently the northernmost record for this species, and the first record of it from the Yucatan Peninsula.

Gynacantha helenga Williamson and Williamson. Poptún, April 16, THH+IJC(178), 1 ♂ (see *Hetaerina pilula*).

This species is not previously recorded from Guatemala or the Yucatan Peninsula; it has been known only from the type locality in Jalisco, Mexico. The excellent color preservation on this male, superior to that of the type male with which it has been compared, permits the following additions and corrections to the original description (Williamson and Williamson, 1930). The clypeus and frons are bluish green rather than brownish green; on either side of the T-spot on the dorsum of the frons, the color is pale blue as in *G. tibiata* Karsch, rather than clear green; the dorsoposterior angle of the metepimeron is brownish blue; metacostal process is pale blue; apical half of dorsum of abdominal segment 1 is blue rather than "light brown?"; the anterior third of abdominal segment 2 is brownish green except for a basal blue annulus, and as stated by the Williamsons, the posterior two-thirds is blue with brown stripes. The tubercle in the median line near the apex of the sternum of abdominal segment 1 bears a well-marked depression on the ventral surface, similar to that in *G. tibiata*.

Gynacantha nervosa Rambur. Tikal: at dusk near aguada, February 13, IJC, 1 ♀; hawking at dusk around eaves of champa, April 7, THH+IJC(101), 1 ♀; May 16, THH(274), 6 ♂, 6 ♀ (see *Triacanthagyna ditzleri*); at camp grounds, May 18, THH(101), 2 ♂, 2 ♀; flying at dusk around camp, May 19, THH(101), 5 ♂, 2 ♀; at camp grounds, May 20, THH(101), 2 ♂, 1 ♀.

This is apparently the first record of this species from the Yucatan Peninsula.

Libellulidae

Uracis imbuta (Burmeister). Tikal, along first 1.5 miles of Uaxactún trail which is bordered by medium tall and low shrubbery and small trees, 1:30 to 5 PM, May 19, THH(282), 1 ♂.

Micrathyria didyma didyma (Selys). Tikal: at campground, March 26, IJC(101), 1 ♀ (teneral); at table in champa at camp, April 1, IJC(101), 1 ♀ (teneral); along trails to Great Plaza, Pyramid 2 and aguada north of Pyramid 2, 2 to 5:30 PM, May 18, THH(281), 1 ♂; May 19, THH(282), 1 ♂ (see *Uracis imbuta*).

Anatya normalis Calvert. Tikal: collecting by headlight in brushy area at north temple, 7 to 9 PM, April 7, THH+IJC(141), 1 ♂; April 11, THH+IJC(160), 1 ♂ (see *Lestes tenuatus*); May 14, THH(271), 1 ♀, (see *Lestes tenuatus*); May 17, THH(278), 1 ♀ (see *Lestes tenuatus*); May 19, THH(282), 1 ♀ (see *Uracis imbuta*).

This is apparently the first record of this species from the Yucatan Peninsula.

Erythrodiplax umbrata (Linnaeus). Puerto Barrios, at night, February 1, IJC(22), 1♂ (same as 20, see *Anomalagrion hastatum*). Tikal: April 7, THH+IJC(141), 1♀ (see *Anatya normalis*); in bajo in a small sunny opening around young escobas and palm fronds, April 9, THH+IJC(150), 3♂, 2♀; in great plaza of ruins, May 13, THH, 1♂; at east end of airstrip at which taller forest trees were felled in the A.M., collecting by lantern and headlights on foliage of felled trees, 6 to 9:30 PM, May 17, THH(279), 1♂, 3♀; May 19, THH(282), 1♂, 1♀ (see *Uracis imbuta*); around camp, May 20, THH, 1♀. Poptún: April 14, THH+IJC(170), 2♂, 2♀ (see *Lestes tenuatus*); collecting by headlights in pinewoods north of Poptún, 7:30 to 10:30 PM, April 15, THH+IJC(172), 19♂, 14♀ (same as 170, see *Lestes tenuatus*); April 16, THH+IJC(178), 2♂, 2♀ (see *Hetaerina pilula*).

Except for two homochromatic females taken at Poptún, April 15, all of the females are of the heterochromatic form.

Erythrodiplax funerea (Hagen). Tiquisate, in banana plantation, 10 kilometers from coast near bend in Zanjón del Mico, 1 to 4 PM, May 8, THH(257), 1♂.

Dythemis velox Hagen. Poptún: April 14, THH+IJC(170), 1♂ (see *Lestes tenuatus*); along creek north of town, April 15, THH+IJC(175), 2♂; April 16, THH+IJC(178), 1♂ (see *Hetaerina pilula*); April 16, THH+IJC(181), 1♂ (see *Hetaerina titia*); along small creek, April 19, THH+IJC, 1♀.

Brechmorhoga rapax crocosema Ris. Finca La Paz, Buena Vista section above Buena Vista creek in cafetal on steep south facing slope in old part of finca, 4700 to 5000 ft, May 3, THH(234), 1♂.

Erythemis attala (Selys). Tikal, on Uaxactún trail, May 15, THH, 1♂.

This is apparently the first record of this species from the Yucatan Peninsula.

REFERENCES CITED

- Calvert, P. P.** 1901-1908a. Odonata, in *Biología Centrali-Americana*. xxx+17-420 pp.
 ———. 1908b. The composition and ecological relations of the odonata fauna of Mexico and Central America. *Proc. Acad. Nat. Sci. Phil.*: 460-491.
 ———. 1909. Contributions to a knowledge of the Odonata of the neotropical region, exclusive of Mexico and Central America. *Ann. Carnegie Mus.* 6: 73-280.
 ———. 1919a. Odonata Anisoptera from Guatemala. *Ent. News* 30: 31-38, 72-78.
 ———. 1919b. Odonata Zygoptera from Guatemala. *Ent. News* 30: 160-165.
 ———. 1928. Report on Odonata, including notes on some internal organs of the larvae. *Univ. Iowa Studies* 12: 1-44.
Klots, E. B. 1932. Odonata or Dragonflies, in *Insects of Porto Rico and the Virgin Islands*. *New York Acad. Sci.* 14: 1-107.
Lundell, C. W. 1937. The vegetation of Petén. *Carnegie Inst. Wash.* x+244 pp.
Mockford, E. L. 1957. Some pscoptera from Tikal, Guatemala. *Ent. News* 68: 197-205.
Williamson, E. B. 1923. Notes on american species of *Triacanthagyna* and *Gynacantha*. *Misc. Publ. Univ. Mich. Mus. Zool.* 9: 1-80.
 ———. 1936. Odonata from Yucatan. *Publ. Carnegie Inst. Wash.* 457: 139-143.
 ——— and **J. H. Williamson.** 1930. Two new neotropical aeshnines (Odonata). *Occ. Pap. Mus. Zool. Univ. Mich.* 218: 1-15.