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TWO NEW NEOTROPICAL AESHNINES (ODONATA)

BY E. B. WILLIAMSON AND J. H. WILLIAMSON

ONE of the new species described is a *Gynacantha* from Mexico and the other is a *Neuraeschna* from Brazil. The specimens were collected by J. H. Williamson.

Gynacantha helenga, new species

Abdomen male 51.5–52.0 mm. + appendages 5.0 mm., female 52.0–54.0 + appendages 6.67 mm.; hind wing male 51.0–52.0 mm., female 51.0–53.0 mm.; stigma front wing male 3.90–4.19 mm., female 3.90–4.38 mm.; third femur male and female 7.10–7.80 mm.; width of stem of T-spot on frons at midlength male and female 0.33–0.38 mm.

Male. Labium dull greenish or bluish light brown, median and basal parts more or less yellowish tinged; labrum similarly colored; clypeus brownish green; frons in front darker brown than the clypeus, more or less mottled yellowish, darkening above at the angle, paler along the eyes; frons above in front dark to black, a narrow stemmed distinct T-spot present, on either side of which the frons has the clear green color which borders the eyes to the fronto-clypeal suture; vertex black; occiput yellow or greenish yellow, behind surrounded with shining black which reaches in the median line to the foramen; rear of head below this black, bright yellow.

Front lobe of prothorax largely almost white, yellowish tinged on the sides; middle lobe light brown; hind lobe paler, greenish tinged, brown.

Thorax green, no trace of markings in dried material, but the evanescent brown markings known to be present in *tibiata* and *jessei* probably occur also in this species; postero-ventral angle yellow; beneath and coxae light brown.

Abdominal segment 1 green, apical half above obscure (light brown?), lower half of extreme apical edge dark brown or black, most conspicuous in ventral view; 2 green, an ill-defined brown area posterior to the median transverse carina, posterior to which brown the dorsum is blue, bordered posteriorly at the apex with black; auricles dark edged; a short oblique brown streak on either side at the ventral margin, the anterior end opposite the apex of the spine of the anterior lamina, directed backward and upward (or outward) toward the center of the auricle; 3–7 brown above, darkening apically on each segment, apical fourth or fifth distinctly darker than base, shading to black at the apex; 8 and 9 distinctly darker than 10, varying tones of brown in indefinite pattern in dried material; 10 green, indefinitely obscured, and patterned more or less with yellow and light brown; in side view base of 3 to the median transverse carina and less distinctly posterior to the transverse carina below midheight, green; 4–7 brown, traces of two pale (blue? or green?) spots on each near the inferior margin, one between the base and the median transverse carina and the other just posterior to the same carina; reduced homologues of these spots indistinctly present on 8 and to a lesser extent on 9; sides of 10 similar to the dorsum. Appendages yellow; in dorsal view each superior has the outer edge nearly straight, becoming slightly convex in about the apical third; inner edge sinuate, narrowing the appendage at the base and at about two thirds its length, the apex truncate, a small spine on the outer angle; in profile with the upper edge concave slightly elevated before the apex and the lower edge convex, slightly elevated just beyond the base, a longitudinal patch of minute black denticles on the ventral surface and on the distal side of

this elevation, this patch of teeth separated from the base a distance about equal to the length of the patch itself; inferior appendage semielliptical transverse to the long axis, a small black denticle directed dorsad on either side at the apex.

Wings hyaline, costa narrowly light yellowish brown; main veins in the basal anterior quarter of each wing largely brown, otherwise venation black; stigma light yellowish brown, surrounded by black veins; membranule white, translucent, narrow, and extended on the anal triangle scarcely half the length of the first cell. Venational characters based on five males and two females: antenodals front wing 22 (males 10%), 23 (males 40%), 24 (males 20%), 25 (males 20%, females 50%), 26 (males 10%, females 25%), or 27 (females 25%); antenodals hind wing 17 (males 40%, females 25%), 18 (males 40%, females 25%), 19 (males 20%), or 20 (females 50%); postnodals front wing 18 (males 40%), 19 (males 60%, females 50%), 21 (females 25%), or 22 (females 25%); postnodals hind wing 19 (males 10%), 20 (males 10%), 21 (males 30%), 22 (males 20%, females 100%), or 23 (males 30%). (In the above characters the wings are more densely veined in the female; for the following characters, unless otherwise noted, the data on the two sexes are combined): basal antenodals absent, 100%; distal thickened antenodal in front wing the seventh (7%), eighth (21%), ninth (56%), or tenth (14%); distal thickened antenodal in hind wing the eighth (50%), ninth (35%), or tenth (14%); number of cells in triangle front wing, 6 (43%), or 7 (57%); number of cells in triangle hind wing, 6 (64%), or 7 (36%); number of supratriangular crossveins in front wing, 5 (43%), 6 (50%), or 7 (7%); number of supratriangular crossveins in hind wings, 4 (15%), 5 (78%), or 6 (7%); number of cubito-anal crossveins basal to subtriangle in front wing, 5 (64%), 6 (22%), or 7 (14%); number of cubito-anal crossveins basal to subtriangle in hind wing, 3 (7%), 4 (43%), 5 (43%), or 6 (7%); subtriangle front and hind wing with one crossvein, 100%; 3 cells in anal triangle, 100%; number of cells in anal loop, 10 (males 10%), 11 (males 50%, females 25%), 12 (males 40%, females 25%),

13 (females 25%), or 15 (females 25%); two rows of cells between anal loop and posterior wing margin, 100%; three rows of cells in fork of Rs posterior to stigma in front and hind wings, 100%; one row of cells between M_2 and Rs in front and hind wings, 100%; maximum number of rows of cells between Rs and Rspl in front and behind wings 4, 10.5% (2 front wings, 1 hind wing of males), or 5, 89.5%; maximum number of rows of cells between M_4 and Mspl in front wing, 4 (males 100%, females 25%), or 5 (females 75%); maximum number of rows of cells between M_4 and Mspl in hind wing, 4 (males 50%), or 5 (males 50%, females 100%); number of rows of cells between M_3 and M_4, following the loop in M_4, in front wing, 1 (males 100%, females 50%), or 2 (females 50%); 2 rows of cells between M_3 and M_4, following the loop in M_4, in hind wing, 100% excepting one wing each of a male and female; 1 row of cells between Cu_1 and Cu_2, posterior to the triangle, in the hind wing, 100%; 3 cells in the anterior row of cells in the anal loop, 100%; 2 rows of cells between M_1 and M_2 in front and hind wings beginning proximal to or at proximal end of stigma, 100%; 2 cells posterior to A between anal loop and anal triangle, 100%.

Legs pale colored, as compared with *tibiata,* especially the second and third; first leg with femur black, briefly brown at base, posterior face light greenish; tibia black at extreme base and apex, under surface brown, dorsal surface greenish, tarsus dark brown or black, tarsal claws black tipped; second and third legs with femora largely light brown, shading into black at apex; tibiae paler brown and more yellowish than femora, extreme apex black; first joint of tarsi very dark brown or black, second and third joints same color as the tibiae, each very narrowly dark brown or black at base and apex; leg spines black, tarsal claws brown, black tipped.

Female. Similar to the male, differing as follows: color of face, along the eyes in front and above, and the occiput, slightly duller; the stem of the T-spot paler behind, in some cases fading out before the vertex. The black streak on either side of the sternum on the antero-ventral margin of the

tergum of abdominal segment 2 with its anterior end separated by about its own width from the transverse narrow black line above it on segment 1; the two short dark streaks on segment 2 less divergent that the corresponding streaks in the male; 3–7 above with less or no noticeable apical darkening except a transverse thread line of black at the extreme apex; 10 little, if any, paler than 9, and 8–10 even more indefinitely patterned (in dried material at least) than in the male. In side view pale spots on 4–7 are less evident (in dried material) and are not at all evident on 8 and 9. Appendages yellow, about 6.67 mm. long, spatulate, widest beyond midlength, 1 mm. wide at the widest point, face directed dorsomesad, outer edge straighter than the more convex inner edge, apex rounded, a low median dorsal carina from base to apex. Genital valves compressed, narrow in ventral view, valvular style 1.43–1.52 mm. long, the needle-like apical brush of hairs or spine about 1.0 mm. long; ventral fork on abdominal segment 10 dark brown, extreme base paler, each branch 1.24 mm. long, depth of the arc of each branch about 0.19 mm., branches widely spread near the base, nearly parallel thereafter, the apices separated by 0.63 mm.

Wings and legs similar to those of the male. For venational characters see pages 3 and 4 in the description of wings of the male.

Material examined: Hacienda de San Marcos, near Villegas, Jalisco, Mexico, November 22 and 23, 1923, 6 males and 6 females; type male and allotype female, November 23; J. H. Williamson, all in collection E. B. W. Named for Helen Thompson (Mrs. F. M.) Gaige.

Villegas, at an altitude of 749 meters, is 226 kilometers south of Guadalajara. The Hacienda de San Marcos is about one and one half hours' by mule from Villegas. Near the hacienda house was a planting of banana and coffee shaded by many large trees with pools, ditches, and, in some places, almost natural stream conditions. Along shaded paths or lanes ten to twelve feet wide *Gynacantha helenga* was fairly common, appearing about thirty minutes before dusk and still flying as darkness which hid them from view came on.

In this planting and a nearby grove the following species of dragonflies in addition to *Gynacantha helenga* were taken: *Hetaerina americana, capitalis,* and *cruentata, Lestes alacer, Archilestes grandis, Xanthostigma ornatus, Argia fissa, extranea,* and *tarascana, Chalcargia oculata* and *pulla, Apanisagrion lais, Telebasis salva, Enallagma praevarum, Leptobasis vacillans, Orthemis ferruginea, Libellula croceipennis, Perithemis intensa,* and *Pantala flavescens.*

Gynacantha tibiata was described by Karsch from a single male with no more definite locality than Ecuador, and to that species since then all the American Gynacanthas with black or partly black legs, yellow or yellowish apical abdominal segments, and yellow appendages have been referred. The bibliography follows:

1. Neue Odonaten von Ecuador, F. Karsch. Soc. Ent. VI, 1891. The original description.
2. On Some Odonata of the Subfamily Aeschnina, Robert McLachlan. Ann. and Mag. Nat. Hist., XVII, 1895. Records a pair from Chiriqui, Panama; probably true *tibiata.*
3. Biologia Centrali-Americana, Philip P. Calvert. 1901–1908. Probably both *tibiata* and *helenga* included, the difference in the "external apical spine of the superior appendages of the males" indicating the two species.
4. Coll. Zool. de Selys, Aeschines, René Martin. 1909. The text applies possibly better to *tibiata* than to *helenga;* the figure certainly seems to be *helenga.* It is probable that both species were studied by Martin.
5. Genera Insectorum. Odonata. Family Aeschnidae. Subfamily Aeschinae, René Martin. 1911. Same remarks as item 4.
6. Libellen (Odonata) aus der Region der Amerikanischen Kordilleren von Costarica bis Catamarca, F. Ris. Archiv für Naturgeschichte, 82, 1916. Probably refers to both species.

7. A Year of Costa Rican Natural History, A. S. and P. P. Calvert. Probably refers to *tibiata.*
8. Odonata Anisoptera from Guatemala, Philip P. Calvert. Ent. News, XXX, 1919. Probably refers to *tibiata.*
9. Notes on American Species of Triacanthagyna and Gynacantha, E. B. Williamson, Misc. Publ. No. 9, Univ. of Mich., Mus. Zool. 1923. On page 33, under *Material examined,* the first two specimens mentioned are not now before us. Dr. Ris writes that the first (a male from Colima) is the same species (*helenga*) as one of the males from Villegas which we sent him for comparison. The female from Cordoba in the U. S. N. M. has not been restudied. The remaining four males from Costa Rica and Venezuela are *tibiata.*

In paper 9 of the above bibliography make the following changes: Change 8(7) and 8′, page 14, to read as follows:

8(7). Legs pale colored, yellowish or reddish, four posterior femora with no distinct black.....9

8′. Legs more or less black, at least the apices of the four posterior femora black.....*tibiata* group 15

Change 15(8′), page 15, to read as follows:

15(8′) Male and female. Four posterior tibiae striped yellow dorsally; sternum of abdominal segment 1 with a low median posterior tubercle; abdominal appendages yellow; stigma light yellowish brown; four posterior femora largely brown with less than the apical third black; second and third tarsi with some distinct yellow or yellowish on the dorsum; extreme apical edge of tergum of abdominal segment 1 in ventral view, black or nearly black; tubercle in median line near the apex of the sternum of abdominal segment 1 with the surface convex.....*helenga*

15′. Male, and probably female, but specimens of the latter sex not available for this study. Like 15 except the last five characters: stigma dark brown; four posterior femora nearly all black;

second tarsus only with yellow, third black; extreme apical edge of tergum of abdominal segment 1 in ventral view, light brown, inconspicuous; tubercle in median line near the apex of the sternum of abdominal segment 1 with a well-marked depression on the ventral surface.....*tibiata*

Change 15′ to 15″, and change *Tarsi* to read *Tibiae.*

The five distinctive characters in the above key by which *helenga* and *tibiata* may be recognized should effectively dispel any doubt of the specific distinctness of the two. That Martin, Calvert, Ris, and Williamson failed to recognize the two species in the material each studied was unfortunate but has nothing to do with the validity of the two. This past difficulty in recognizing the species furnishes, moreover, no grounds for the assumption which may be made by some students that one of these species should be relegated to a lower rank than the other by some device of nomenclature. In addition to the five characters of the key, *helenga* differs from *tibiata* in several other characters which are not so readily defined. It is more robust and this may be recognized at once when the males are placed side by side. This is most noticeable in the constriction of abdominal segment 3. In *helenga* the height of segment 3 at base from dorsum of tergum to its inferior edge, 2.72 mm.; minimum height of segment 3, 1.78 mm. (1.38–1.52 mm. in *tibiata*); width of segment 3 at base, 2.67–2.86 mm.; minimum width of segment 3, 1.36–1.42 mm. (1.00–1.10 mm. in *tibiata*). Associated with the more robust body of *helenga* is a greater wing breadth which amounts in the hind wing at the nodus to one to two mm., and six rows of cells behind Cu_2 in the hind wing as compared with five rows in *tibiata.* The clypeus is greener and browner in *helenga.* Rear of head on either side below the black of the upper median region brighter and yellower in *helenga,* very light brown in *tibiata* (in life in *tibiata* blue, see Calvert and Williamson, pages 31 and 32, paper 9 in above bibliography). Abdominal segments 8–10, and especially 8–9, darker in *helenga,* the contrast between 8–9 and 10 much greater. In

helenga the postbasal widening of the superior abdominal appendage of the male is slightly more basal and distinctly less abrupt, the appendage less petiolate, so the space in dorsal view bounded by the apex of segment 10 and the mesal edges of the two appendages to about midlength of the appendages is distinctly smaller in *helenga* than in *tibiata* (compare Martin's dorsal view figure, paper 4, in above bibliography, with Williamson's dorsal view figure, paper 9, in above bibliography). Our knowledge of the habits of the two species is fragmentary, but it indicates that *tibiata* is very active during the day and is probably less crepuscular than any other American *Gynacantha*; *helenga* seems to be distinctly crepuscular.

Working independently Drs. Calvert, Kennedy, and Ris, and the authors have come to the conclusion that Karsch's description applies better to the species called *tibiata* by us in this paper than to the other species which we have named *helenga*. Dr. Ris sent specimens of the two species furnished by us to Berlin for comparison with Karsch's type, but it could not be located and is, at least temporarily, lost. There is no doubt in our minds that the species now certainly known from Costa Rica to Venezuela is really *tibiata,* but the matter can not be positively settled until specimens from Ecuador are available for careful study and comparison or until the type can be located. Karsch's description is brief, and, in the light of future discoveries, may prove not distinctive.

Neuraeschna mina, new species

Abdomen male 53.0 mm. + appendages 3.9 mm.; hind wing male 48.5 mm.; stigma front wing male 4.20–4.40 mm., hind wing 3.11 mm.; third femur male 7.52–7.62 mm.

Male. Labrum and anteclypeus light brown; postclypeus about the same tone but greenish tinged, frons in front shading quickly from the color of the postclypeus to dark brown at the angle; the sides about the color of the postclypeus; above dark brown in front, light brown against the vertex, no well-marked T-spot.

Thorax rich dark brown, paler beneath, marked with bright green as follows: dorsum on either side with a large stripe, not reaching the antealar carina, the upper end abruptly widened into a smaller inner projection and a larger outer projection, the outer edge of the stripe nearly straight, the inner edge curved smoothly outward below to give the stripe an acute inferior apex; the antealar sinus of the front wing on either side except a narrow margin inside the carinae; two nearly straight, parallel sided lateral stripes, each about equalling the dorsal stripe in width, one on the mesepimeron, the other on the metepimeron, each starting above against the lateroalar carina and disappearing below in the brown of its sclerite; the stripe on the metepimeron slightly wider above, the sides slightly converging toward the lower end; a large roughly semicircular spot above on the metepisterum, the straight side resting against the lateroalar carina; the antealar sinus of the hind wing; spots between the wings and on the wing bases above.

Abdominal segment 1 brown, traces of subapical pale color above (probably D, see Walker, *North American Species of Aeshna,* page 9) but, as usual in those aeshnines having 1 and 2 delicately colored, both pattern and colors are lost or obscured; 2 with AD narrow extending from base to apex where it joins PD, slightly widened at about midlength, PD and PL reduced, the two separated on the side and neither extending anteriorly more than half way to the transverse carina, and PD almost divided in the median line; MD apparently absent, and AML not reaching above midheight, and the ventral side of the auricles brown; 3–10 and appendages black or dark brown; 3 with traces of AL and ML, and a narrow short apical transverse reddish brown bar on dorsum; this bar is still more reduced on 4, scarcely discernible on 5, and wanting on 6–10, 10 flattened above, the apex gradually but distinctly upturned. Superior appendage in dorsal view with its outer edge slightly convex to just before the apex where it has a short concave excavation which terminates in a slightly acute short apical projection; the inner edge is more concave than

the outer edge is convex, curving from the widened base to a more widened apical portion which is truncated on the line of the apical projection described for the outer edge; the plane of the apical widening is directed dorsomesad; before midlength there is a large tongue or thumb-like projection from this plane which is directed posteromesad and very slightly ventrad; its base is about 30% of the length of the appendage and it is nearly as long, with the apex smoothly rounded; near the apex of the appendage on the dorsomesad face is a heavy transverse keel, not reaching either the inner or outer edge of the appendage, with a smooth, polished rounded lobate margin. The inferior appendage, beginning just beyond the base, against which two ventral branches of the upper part of the anal plate are closely pressed, is very narrow, dagger-shaped with the upper surface deeply excavated into a roughly triangular trough. In profile the superior appendage is rather abruptly bent downward at about one third the length of the appendage, the height of the convexity marking the beginning of this bending being a ridge or keel which extends inward onto the thumb-like posteromesad projection on which it loses itself before the apex of the projection; the distal expansion of the appendage is conspicuous as in the dorsal view and on the ventroexternal face of this expansion is a low rounded longitudinal ridge which increases slightly in size towards its termination before the posterior edge of the appendage; a very small low shining black transverse keel just before the end of this longitudinal ridge; along the lower edge near the middle the thumb-like projection, so conspicuous in dorsal view, is barely visible (see figure 1). In profile the inferior appendage is about 70% of the length of the superiors, nearly straight, uniformly slender, and directed slightly ventrad for about 60% of its length, then gently curved slightly dorsad and tapering to the apex. The posterior edge of the dorsal part of the anal plate is visible in profile as a line between the superior and inferior appendages, the upper part of the line vertical, the lower part curved toward the apex of the inferior (see figure 1).

The anal plate is very high on both *mina* and *dentigera,* the inferior appendage produced from only the lower posterior part [we are assuming that the inferior appendage is derived solely from the anal plate (the eleventh tergite)]. *Dentigera* is apparently the closest relative of *mina,* and in the two the form of the upper part of the anal plate is as distinctive as are the appendages themselves. In *mina* the opening between the two dorso-posterior branches of the anal plate in posterior view is a narrow vertical slit; in *dentigera* it is the shape of an inverted U. Our specimens of *dentigera* were identified by Dr. Calvert years ago and we believe they are probably correctly named, but in our male from British Guiana the mesal expansion of the blade of the superior appendage at about two-thirds the length of the appendage is nearly or quite symmetrical and not markedly asymmetrical as in Martin's figure, and in profile there is in the male from British Guiana a high, strongly notched, almost semicircular subapical keel not shown in Martin's figure. These differences can hardly be explained by differences in orientation of the appendages and more material may necessitate renaming the British Guiana specimens. Very probably hardly a beginning has been made of our knowledge of the species of *Neuraeschna.*

Wings distinctly tinged brown, darkest between C and R; venation dark brown or black; stigma brown, surrounded by black veins; membranule white, about 0.80 mm. wide, extended along the anal triangle about half the length of the first cell. Antenodals front wing 32 or 33, hind wing 25 or 26; postnodals front wing 22, hind wing 24 or 25; one antenodal of second series basal to the first thickened antenodal in all the wings; Sc produced beyond the nodus two cells' length in all the wings; distal thickened antenodal in front wing the eleventh, in hind wing the twelfth or thirteenth; 9 cells in triangle front wing, 8 or 9 in hind wing; 9 or 10 supratriangular crossveins in front wing, 8 in hind wing; 7 crossveins in median space front wing, 5 in hind wing; 8 cubito-anal crossveins basal to subtriangle in front wing, 5 or 6 in hind wing;

subtriangle front and hind wing with one crossvein; 3 cells in anal triangle; in front wing 2 rows of cells between A and posterior wing margin from wing base to level of distal end of subtriangle except at the distal end of this space where two interpolated cells increase the number of rows to three (the right and left wings are identical in size and form of these interpolated cells and it will be interesting to see how constant this character is when more material is available; in *dentigera,* one male and one female, there is a single interpolated cell, the homologue of the distal one of *mina;* in wings of two females of *harypa* there is a single interpolated cell in three wings and two in one wing); 3 cells in the anterior row of cells in the anal loop; anal loop wide, at least 2 rows, in line with the long axis of the wing, with 4 cells each; supplementary loop on proximal side of anal loop with 7 cells; 17 or 18 cells in anal loop; 2 and 3 rows of cells in each hind wing between anal loop and posterior wing-margin; 2 cells just posteror to A between anal loop and anal triangle; anal triangle reaching about three-fourths the distance from A to posterior angle of hind wing; Rs front wing forking before proximal end of stigma a distance equal to about seven-ninths the length of the stigma, and about one-fifth the distance from nodus to stigma; in hind wing about one and four-sevenths the length of stigma of that wing and about one-fourth the distance from nodus to stigma; three rows of cells in fork of Rs posterior to stigma in front and hind wings; two rows of cells between M_1 and M_2 beginning at level of proximal end of stigma or one cell proximal to stigma in front wing, three cells proximal in hind wing; one row of cells between M_2 and Rs in one front and both hind wings, in one front wing there are 2 rows for four cells' length; five, with rarely six or seven, the maximum number of rows of cells between Rs and Rspl in the front wing, five or six in hind wing; one and two rows of cells between M_3 and M_4 in front wing following the loop in M_4, and two rows in the hind wing; five, with rarely six, the maximum number of rows of cells between M_4 and Mspl in front and hind wings; two rows of cells between Cu_1 and

Cu_2 posterior to triangle in hind wing, followed by one row; six the usual number of rows of cells between Cu_2 and posterior wing margin in hind wing at about the level of distal angle of triangle.

Front legs black, posterior face of femur fading out at base and on trochanter to bluish gray; middle and hind legs reddish brown, the femora darkening to black at the apex, tibiae darkening to black at both base and the extreme apex, and tarsi black.

Material examined: Porto Velho, Amazonas, Brazil, February 1, 1922, 1 male, the type; J. H. Williamson, in collection E. B. W. Named for Miss Mina L. Winslow.

Porto Velho, on the Madeira River, at an elevation of about 60 meters, is the northern termination of the Madeira-Mamoré Railway and is about 1800 miles by river from Pará. The forest begins about two miles north of town and is reached by muddy roads and trails through cleared land. The second creek in the forest at this season was about two to six feet wide and about knee deep with generally firm but muddy bottom. Following down this creek one came, still in the woods, to back water of the Madeira which partially flooded the creek basin. In the woods near the creek five aeshnines were seen, all apparently the same species, and, after the first four had made their escape, the fifth one was shot. This specimen is the type of *Neuraeschna mina.* It is not perfect but is adequate for description, about all that cannot be made out being the color of occiput, rear of head, and prothorax.

Counting *mina* there are six known species of *Neuraeschna,* four of them described by Martin in *Coll. Selys Aeschnines.* The total number of specimens of the five species seen by Martin was only nineteen—one species represented by one specimen, two by three each, one by four, and one by eight. Under this circumstance it is very probable that the figures of male appendages are properly labelled in the text. The species known are beautifully distinct in the form of the male appendages and for this reason we feel justified in basing a new species on a single male. Our drawings of the ap-

pendages of *mina* were sent to Dr. Ris who writes that it is a species not known to him.

At Rockstone on the Essequibo River in British Guiana after sundown on the evenings of January 31 and February 1, 1912, back of Sprotson's rest house about the latrine on the creek bank, in the tropical twilight were some wildly dashing aeshnines with flight as erratic as that of *Triacanthagynas.* Five of these were netted and proved to be a male and female of *Neuraeschna dentigera* and three females of *Neuraeschna harypa.* Captain Strohm and J. H. Williamson took a single teneral male of *Neuraeschna claviforcipata* hanging on a low bush in a swampy woods near a tide-water creek at Pará-Belem, Brazil, August 5, 1922. Nothing more than this is known about the habits of *Neuraeschna.*

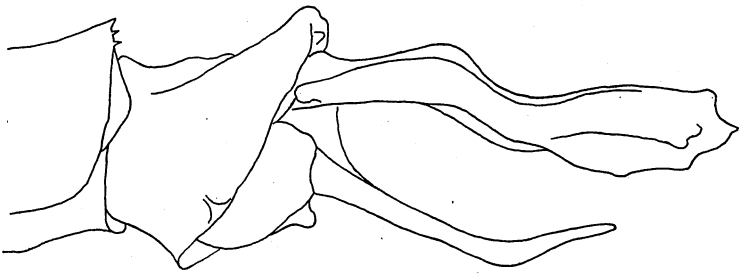
On the stretch of creek in the woods where *Neuraeschna mina* was found, the following species and some others not yet identified were collected: *Chalcopteryx rutilans,* two species of *Lais,* one of them *aenea,* three species of *Hetaerina,* two of them *amazonica* and *sanguinea, Lestes helix,* three species of *Heteragrion,* one of them *inca, Oxystigma petiolatum, Microstigma anomalum,* one *Protoneura, Psaironeura cerasina,* five species of *Argia,* four species of *Acanthagrion,* one of them *apicale, Aeolagrion flammeum,* one *Leptobasis,* three species of *Mesoleptobasis,* one of them *incus, Orthemis ferruginea* and *cultriformis, Dasythemis esmeralda, Argyrothemis argentea, Nephepeltia phryne, Elga leptostyla, Oligoclada amphinome, Uracis ovipositrix* and *imbuta,* three species of *Micrathyria,* two of them *eximia* and *mengeri, Erythrodiplax attenuata, basalis, castanea, erratica, fusca, umbrata,* and an unidentified species, *Erythemis attala, Rhodopygia cardinalis,* and *Macrothemis musiva* and *pumila.*

EXPLANATION OF PLATE

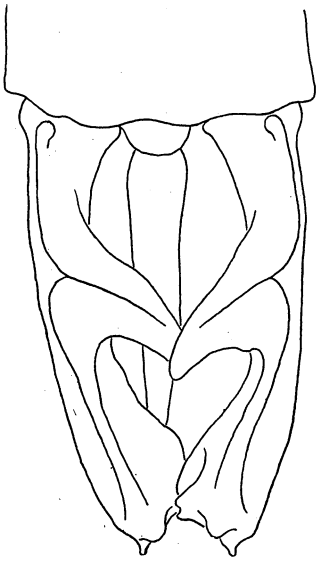
Figs. 1 and 2. Abdominal appendages of type male of *Neuraeschna mina* in profile and dorsal views.

Fig. 3. Supero-internal view of right superior abdominal appendage of the male of *Gynacantha helenga.*

Fig. 4. Supero-internal view of right superior abdominal appendage of the male of *Gynacantha tibiata.*

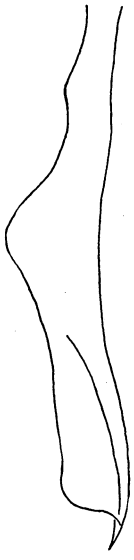


1. Neuraeschna mina



2. N. mina

3. G. helenga



4. G. tibiata