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RESULTS OF THE UNIVERSITY OF MICHIGAN-  
WILLIAMSON EXPEDITION TO COLOMBIA1916-1917<sup>1</sup>

## V. NOTES ON A FEW SPECIES OF PROGOMPHUS

(ODONATA)<sup>2</sup>

BY E. B. WILLIAMSON

The following notes deal with specimens of *Progomphus* collected by me in Guatemala in 1909, and by J. H. Williamson and myself in Colombia in 1916. A new species from Guatemala is described.

With the new species of *Progomphus* described in this paper, twenty-three species of the genus are now known. Kirby lists eleven species in his Catalogue. The elevation of *borealis* to its proper specific rank makes the number twelve. In the *Bio. Cent. Amer.*, p. 150, Calvert describes *P. clendoni*, and in

<sup>1</sup>A Collecting Trip to Colombia, South America, Miscellaneous Publications, Museum of Zoology, University of Michigan, No. 3, February, 1918.

<sup>2</sup>I, *Occ. Papers, Mus. of Zool., Univ. of Mich.*, No. 52, April 17, 1918. II, *ibid.*, No. 59, June 24, 1918. III, *ibid.*, No. 63 January 5, 1919. IV, *ibid.*, No. 68, April 24, 1919.

Od. Neotrop. Reg., Ann. Carn. Mus., he describes *P. recticarinatus*. Ris, Beit. zur Odonatenfauna von Argentina, Deutsch. Ent. Zeitschr., 1908, describes *P. joergenseni*; in Ueber Einige Gomphinen von Sudbrasilien und Argentina, Mem. Soc. Ent. Belg., XIX, 1911, he describes *P. auropictus*, *lepidus*, and *basisticus*; and in Libellen (Odonata) aus der Region der amerikanischen Kordilleren von Costarica bis Catamarca, Archiv fur Naturgeschichte, 1916, he describes *longistigma*, *phyllochromus*, and *perpusillus*.

The twenty-three species of the genus *Progomphus*, while forming a natural and generally easily recognized group, yet show remarkable differences in several characters. Venational differences involving characters generally considered valid for the definition of major groups exist within the genus (crossed or open triangles). In Plate II the wings of three species are shown: in *pygmaeus*, fig. 5, the triangle of the front wing is open and the anal field is only one cell wide, and in the hind wing there are three postanal cells in both the proximal and distal rows; in *risi*, fig. 6, the anal field in the front wing is two cells wide for a short distance both proximal and distal to the level of the triangle, and in the proximal row of postanal cells in the hind wing there are four cells, and three in the distal; in the unnamed species, fig. 7, the anal field of the front wing is still wider, and in the hind wing there are four cells in both the proximal and distal rows of postanal cells. The change in form of the triangle from a fairly regular three-sided figure to almost a four-sided figure, due to the angling of the distal side of the triangle, may be traced in figures 5 to 7.

In the proportion of the tibia and tarsus of the third pair of legs striking differences exist. The difference between *risi* and *pygmaeus* is discussed below in the description of *risi*. In *joergenseni* the third tibia and tarsus bear the same rela-

tion to each other as in *pygmaeus*. Generally the third tibia and the tarsus without the claws are approximately equal or the tibia is slightly the longer, but I lack sufficient material to study the matter in detail. In *risi*, however, the hind tarsus without claws is slightly longer than the tibia.

Under the discussion of *risi* I also call attention to the great difference in the length of occipital hairs in *risi* and *pygmaeus*. The more robust build of *risi* as compared with *pygmaeus* is also conspicuous. Within the genus considerable differences in thoracic color patterns exist. Figures 1-3, Plate I, illustrate this.

**Progomphus risi**, new species

Figs. 1, 6, 8, 9, 10, 11

*Description*: Abdomen, male 26, female 26.5; hind wing, male 18, female 21.5.

Male.—Rear of head brown, paler below, mouth parts light brown; face brown, marked with leaden or bluish gray as follows: a spot below, not touching the borders, on either side of the labrum; rhinarium entirely pale; nasus with a spot on either side, reaching the extreme lateral border; and frons in front above the last yellowish or greenish. Frons above pale, greenish or yellowish, a median posterior ill-defined triangular leaden colored area; vertex and antennae black or dark brown; ocellary ridge, posterior to each lateal ocellus, well-defined, curved, not angled, at its outer end between the ocellus and the eye; the two postocellary ridges, one posterior to each lateral ocellus, meeting in the median line almost in a straight line, the angle between them very obtuse; occiput dark dull green, the posterior edge and adjoining the eyes darker, indentate in the median line from which it rises, on either side, in a very slight concavity to the rear of the head; hairs on pos-

terior edge relatively weak and short, shorter than the occiput is long (distance from frons to posterior border of the occiput about midway between the angle of the eye and the median line).

Prothorax black with some indefinite small yellow markings; middle lobe with the posterior, inflated-like, transverse area on either side entirely bluish gray.

Dorsum of thorax rich brown to almost black with a pale almost white stripe on either side, the inferior end of which is more or less bluish gray; these two dorsal pale stripes widely divergent; no trace of a mesothoracic collar; side of thorax lighter brown and bluish gray. Coxae light brown in front indefinitely marked with paler, behind pale bluish gray; under parts bluish gray, passing to light brown posteriorly.

Abdomen robust, seen from above largely dark brown or black; 1 brown at base, black apically; 2 narrowly brown at base, followed by a transverse bluish gray band extending to and covering the auricles above, posterior half of segment brown; 3-5 black, each with a basal triangular bluish gray spot, narrowly separated from the base, pointed posteriorly, extending three-fourths the length of 3, less than half the length of 4, and about one-fourth the length of 5; 6 and 7 black; 7 with the basal two-sevenths or one-third dull yellow, the pale color continued indefinitely posteriorly in a thread-like dorsal line; 8 black or nearly so; 9 and 10 dark brown. Seen from the side the inferior third of 1 is bluish gray; 2 is brown with the inferior posterior portion bluish gray; 3 is brown, shading to black apically with a small obscure inferior basal bluish gray spot; the remaining segments are black with the basal pale ring of 7 carried to the inferior margin. Sterna of segments 3-5 ending apically in a small narrow spine-like projection. No ventral spine or tubercle on 1. Superior appendages jet black

at base, the apex light yellow, the black oblique, occupying about one-fourth the length above and about one-half the length below; inferior appendage brown.

Wings hyaline, no trace of any colored areas, very faintly greenish tinged to the nodus; costa brown, narrowly and inconspicuously edged with pale greenish or yellowish blue. Stigma dark brown, covering 4 to 4.5 cells in the front wing and 5 to 5.5 in the hind wing; in one hind wing the cells posterior to the stigma are abnormal. Antenodals front wing 11 or 12, hind wing 7 to 9; postnodals front wing 5 to 8, hind wing 6 or 7; basal antenodal of second series present; the distal thickened antenodal the fifth. Triangle of front wing once crossed; of hind wing free in one wing, once crossed in three wings, the single uncrossed wing is abnormal in that the anterior side of the triangle, instead of meeting  $M_4$  at or slightly proximal to the distal anterior angle of the triangle, meets the distal side of the triangle posteriorly to the distal anterior angle a distance about equal to half the length of the arculus; the anterior side of the triangle in this abnormal wing therefore occupies a position about midway between the anterior side of the triangle and the cross-vein of the triangle in the normal wing, and takes the place of the two. The subtriangle is once crossed in all front wings and free in all hind wings. Anal field of the front wing proximal to the triangle two cells wide for a distance of two cells, counting the anterior row; distal to the triangle the field is two cells wide for a distance of three or four cells. There are four cells in the proximal row of postanal cells and three or four, usually three, in the distal row.

Legs short, femora reddish brown, shading into black at apices, the first pair bluish gray beneath; tibiae and tarsi black; tarsal claws dark reddish brown, the teeth and apices black.

Hind tibiae relatively short, shorter than the hind tarsi without the claws.

Female.—More robust than the male; the head about 6 mm. wide (5 in the male) and paler colored; the labrum is largely light yellowish brown, and the brown on nasus and frons below in front is paler and duller, less sharply contrasted with the adjacent bluish gray parts, and, on the nasus, reduced in extent. Vertex yellowish brown, the ocellary ridges lighter in color; occiput similar to that of the male, slightly paler.

Prothorax patterned as in the male with yellowish brown replacing the black of the latter.

Thorax light reddish brown, little if any darker on the dorsum, marked with bluish gray with the same pattern as in the male, except that there is a faint trace of pale color on either side on the dorsum just in front of the antealar sinus; under parts and coxae slightly paler than in the male.

Abdomen robust, colors and pattern obscure and ill-defined, probably due to postmortem changes; 1 largely pale, apical half or less of dorsum and an ill-defined median lateral spot brown; 2 largely pale, with no defined pattern, but apparently much faded so colors in life cannot be described; 3-5 apparently as in the male, with the dorsal basal pale areas more extensive, extending apically about one-half the length of each segment on 4 and 5; 6 black; 7 light brown, without trace of pattern in the dried specimen; 8-10 indefinitely patterned black and brown, black predominating. Sterna of segments 2-5 ending apically in a small spine-like projection. No trace of ventral spine or tubercle on 1. Appendages yellow, brown at the extreme base.

Wings hyaline, no trace of colored areas, slightly greenish tinged to or beyond the nodus especially in the anterior part of the wings; costa brown. Stigma brown, covering 4 to 4.5 cells

in the front wing and 4 to nearly 5 in the hind wing. Antenodals front wing 12, hind wing 8 or 9; postnodals front wing 7, hind wing 7 or 8, basal antenodal of second series present; the distal thickened antenodal the fifth. Subtriangle in hind wing free, all other triangles and subtriangles once crossed. Anal fields as in the male.

Legs as in the male, slightly paler in color.

*Material Studied*: Gualan, Department Zacapa, Guatemala, June 16, 1909, two males and one female, one male and the female the type and allotype respectively, in coll. E. B. W. Named for Dr. F. Ris, whose many acts of personal kindness, as well as his valuable contributions to Odonatology, are gratefully acknowledged by the author. A male and female of this species, same locality and date, not studied in the preparation of this paper, are in Dr. Calvert's collection. These specimens and specimens of *P. pygmaeus* from Colombia, sent to Dr. Calvert by me, have been carefully studied by Dr. Calvert and compared with de Sely's original description of *pygmaeus* and with specimens of that species from Costa Rica in his collection. His notes on all this material have been placed at my disposal. His conclusion is that the Gualan species, here described as *risi*, is new and distinct. Drawings of the abdominal appendages of *risi* were sent to Dr. Ris who also pronounced the species new.

*Remarks*: *Progomphus risi*, next to *P. pygmaeus* and *perpusillus*, is the smallest species of the genus. From *pygmaeus* it is separated in both sexes by the following venational differences: anal field in front wing one cell wide throughout in *pygmaeus*, two cells wide for short distances both proximal and distal to the level of the triangle in *risi*; three cells in the proximal row of postanal cells in the hind wing in *pygmaeus*, four cells in *risi*. In both sexes of *pygmaeus* the legs, especially the

third pair are relatively longer and slenderer and the hind tarsus without the claws is only about two-thirds as long as the hind tibia, while in *risi* the hind tarsus without the claws is actually longer than the shortened hind tibia, giving the leg a malformed appearance. In *pygmaeus* the occipital hairs are fully one-half longer than in *risi* (*pygmaeus* .35-.40 mm., *risi* about .25 mm.), while the relative difference is greater, as the occiput of *risi* is about one-half longer (measured from frons to posterior border of occiput about midway between the angle of the eye and the median line) than *pygmaeus*. The thoracic patterns of the two species are very different (see figs. 1 and 2); and the male appendages and female vulvar laminae are equally distinct (compare figs. plate III). *Perpusillus* is the smallest gomphine known, with abdomen only 18 mm. long and hind wing 15 mm. long. It and *longistigma*, which is very slightly larger than *risi*, differ from *risi* in both thoracic color patterns and abdominal appendages. From *P. gracilis*, which it approaches in size, *risi* may be recognized by the presence of the basal antenodal of the second series, which is wanting in *gracilis*, and by the very different thoracic pattern (see figs. 7 and 8, Ueber Gomphinen von Sudbrasilien und Argentina, Mem. Soc. Ent. Belg., XIX, 1911, Dr. F. Ris). In the key in Dr. Ris's paper referred to in the preceding sentence, *risi* will not go in either of his two groups A and B, being separated from A by the presence of the basal antenodal of the second series, and from B by the small number of two-celled rows of cells proximal to the triangle in the anal field of the front wing.

The small species, *P. lepidus*, belongs in Ris's group A, and it is separated from *risi*, in addition to the venational difference, by the very different thoracic pattern and male abdominal appendages (see Ris's figs. 9 and 10). In Calvert's key to the Central American species of Progomphus (Bio. Cent. Am.),



two groups based on the presence or absence of a sternal process or tubercle on abdominal segment I are recognized. *Pygmaeus* is the only species in the key lacking this process, which is also lacking in *risi*. Differences between the two species have been indicated above.

A short distance above the railway station at Gualan, Guatemala, the railroad crosses the Gualan River. Just above the bridge a small stream from the right enters the Gualan River. Much collecting was done along this small stream in January, 1905, but no gomphines were seen. In June, 1909, however, there were two handsome species of Gomphoides and *Progomphus risi*. A short distance above the mouth of the small stream was a pool, shallow on one side and with a wall of vegetation on the opposite deeper side. The three species of gomphines were accustomed to fly in to this sunny pool and alight on leaves overhanging the deeper water.

*Progomphus pygmaeus* Selys

Figs. 2, 4, 5, 12, 13, 14

*Description*: Abdomen, male 23-25, female 22.5-23.5; hind wing, male 19, female 20.

Face brown, marked with gray as follows: lower part of labrum, variable in extent, rhinarium entirely, and frons above. Rear of head indefinitely mottled green and brown, variable, darker above, below varying from almost entirely green to almost entirely brown. Thorax brown, marked with greenish; dorsal thoracic stripes wide.

Legs brown to black and green or yellowish green; the first and second femora pale at base, above passing at once into brown which passes into black; below pale; third femora largely pale, the apical fourth or fifth brown above, the extreme

apex black, unusually long and slender for the genus; tibiae and tarsi black; third tibia longer than the tarsus and claws. The Chapada female, discussed below, has the legs incomplete but apparently similar.

Wings hyaline to more rarely smoky tinged especially about the nervules, no trace of any distinct colored area. Costa dark. The venational characters of 25 male wings and 6 female wings were tabulated with the following result: triangle front wing free, 16% male, 0% female; crossed 84% male, 100% female; subtriangle front wing crossed, 100% male, 100% female; triangle hind wing crossed, 100% male, 100% female; subtriangle hind wing free, 32% male, 0% female; crossed, 68% male, 100% female; anal field front wing one cell wide, 100% male, 100% female; three postanal cells in the proximal row, 100% male, 100% female; two postanal cells in the distal row, 68% male, 33 1/3% female; three in the distal row, 32% male, 66 2/3% female.

Male.—Abdominal segment 2 with a narrow longitudinal dorsal pale greenish stripe the length of the segment, separated from the extensive pale lateral areas; 3 similarly patterned, the dorsal stripe becoming very narrow apically but reaching nearly or quite to the apex, and the lateral pale area confined to the basal third of the segment; on 4 the apical extension of the dorsal stripe and the lateral area is still more reduced, the areas joining more or less basally to form a ring, and the thread-like extension of the dorsal stripe extending about four-fifths the length of the segment or less; on 5 and 6 the dorsal pale stripe is not evident, but the basal lateral areas are nearly or quite united in the mid-dorsal line to form a narrow transverse basal ring on each segment; 7-10 and appendages as described by de Selys, the basal ring on 7 apparently greenish, the lateral stripe on 8 yellowish and really better described

as two spots more or less obscurely joined; these two spots on 8 are also present on 7 as a triangular spot just posterior to the basal greenish area with the apex of the spot directed posteriorly and an apical, less definitely triangular spot with its apex directed anteriorly; the homologues of these two spots on 7 form the "bande laterale au 8<sup>e</sup>" of de Selys.

Female.—Through the kindness of Mr. Kahl I have had for study the material in the Carnegie Museum determined by Dr. Calvert as *pygmaeus* (Bio. Cent. Amer.). The female from Chapada, Brazil, lacking the last seven abdominal segments, which served as the basis for the description of that sex of *pygmaeus* by Dr. Calvert, is really another and unnamed species, so that the female of *pygmaeus* has not hitherto been known. In *pygmaeus* the brown of the face is much lighter than in the Chapada species; in the Chapada female the frons is distinctly angled, the angle being the dividing line between the anterior brown and the dorsal green, in *pygmaeus* the frons is rounded and low, without a trace of an angle; in the same way the vertex is more flattened in *pygmaeus*, the postocellary ridge less prominent, and not developed into a more or less median over-hanging plate as in the Chapada female. In the Chapada female the occiput is straight, as described by Calvert, while in *pygmaeus* it is slightly concave, with a small median indentation. In the Chapada female the dorsum of the thorax is distinctly darker than the brown dorsum of *pygmaeus* and might be described as black; in *pygmaeus* the pale dorsal stripes are as shown for the male (fig. 2) or they may narrow continuously dorsally without any expansion or enlargement at the dorsal end, but in either case they are barely separated from the antearlar sinus; in the Chapada female, on the other hand, the dorsal stripes are more yellowish and are much shortened, being separated from the antearlar sinus by

a distance about equal to their width at midlength; in addition there is in the Chapada female a dorsal antehumeral pale spot, no trace of which exists in *pygmaeus*; laterally *pygmaeus* is the paler, the obscure stripes on the sutures in the males of *pygmaeus* and the Chapada female, being more obscure or absent.

Abdomen brown, shading out to black on the apical segments, faded in dried material, apparently very similar to the male, but the lateral markings on 8 and the homologous markings on 7 not discernible; appendages pale (greenish yellow?), dark at the extreme base.

*Material Examined*: Bolivar, near Santa Marta, Colombia, December 24 and 25, 1916, 27 males, 3 females, collected by J. H. and E. B. Williamson, in Coll. E. B. W. (3 additional males, same locality and date have been sent to Drs. Calvert and Ris, and Mr. Champion); Bonda, Colombia, one imperfect male, H. H. Smith, collector, cited by Calvert (Bio. Centr. Amer.); the very teneral condition of this specimen explains Dr. Calvert's description of the color of the head. The locality where specimens were collected by J. H. Williamson and myself is briefly described on page 8, A Collecting Trip to Colombia, South America, Misc. Publ. No. 3, Univ. of Mich., Mus. of Zoology, but the number of specimens captured is there stated to be about 25, while the correct number is 33. I think every specimen seen was captured. We spent practically the entire day of December 25 looking for this one species with the result that we caught 25 specimens that day. They were always found resting on broad leaves at a slight elevation, usually a foot or two from the ground, and in the sun. *Pygmaeus* is a dull colored and, under the conditions we observed it, a sluggish species.

*The Identity of P. pygmaeus Selys.*—Specimens of the spe-

cies taken near Bolivar, Colombia, were sent to Drs. Calvert and Ris, who independently identified them as *pygmaeus*. Unfortunately Mr. Champion was not able to compare the Colombian specimen sent him with the type of *pygmaeus* in the MacLachlan collection. This type came from Bogota, which means little in this connection as a definite locality. The existence of another very similar but distinct species at Chapada, Brazil, to which the description of de Selys is in some respects more applicable than to the Central American and northern coastal Colombian species throws doubt on the identity of these northern specimens. Moreover, in the Carnegie Museum there is another female *Progomphus* from Chapada of similar size, lacking the entire abdomen, but having the anal area distal to the triangle two cells wide or more. We are therefore sure that at least three small species of *Progomphus* exist, and that only one name is available. It seems to me very probable that other species will be found and that one of these, at present not known, or, less likely, the Chapada female, described by Calvert, and compared above with the Bolivar specimens, will be found to be the true *pygmaeus*, and that the Central American and northern Colombian species will be found to require a new name. Comparison of material I have sent to Mr. Champion with the de Selys type in MacLachlan's collection will settle this matter. Until that time it is well to bear in mind that at the time de Selys described *pygmaeus* he knew certainly six or seven more species of the genus, and he said "*pygmaeus* is very distinct by the distal side of the triangle of the front wing more angled than in any other species." The remarkable thing about the triangle of the front wing in the specimens from Bolivar, Colombia, is the short anterior side of the triangle. The distal side is not unusually angled. De Selys also speaks of the distal side of the triangle of the hind

wing being strongly angled. *Pygmaeus* is described as having the thorax black, a matter in which de Selys could hardly be mistaken because of postmortem changes, yet the Bolivar specimens, fully matured, are brown. And the basal abdominal markings present on segments 3-6 in the Bolivar specimens are not mentioned by de Selys, though these may have been lost due to postmortem changes in the single specimen he had.

*Progomphus clendoni* Calvert

This species has been known from Tuxpan, Mexico (two males—Bio. Cent. Amer.), and from Costa Rica (Calvert, A Year of Costa Rican Natural History, page 429), so its occurrence in Guatemala is not surprising. But its distribution in Guatemala and the variation shown in the material collected are surprising. I took specimens at Puerto Barrios at approximately sea level; at Los Amates, at an elevation of 160 feet; in the mountains at Aqua Caliente and still higher at El Fiscal at an elevation of 3,700 feet, both towns in the Dept. Guatemala. El Fiscal is near the continental divide but is on the Atlantic side. But when the divide was crossed and collecting was done at Amatitlan, at an elevation of about 4,000 feet on the Pacific slope, *clendoni* was found there too. I can not explain my failure to find the species at Gualan, between Los Amates and Agua Caliente, where I collected carefully. The dates of captures run from May 28 to June 19, 1909, and altogether 13 males were taken.

In size the Guatemalan material varies from 35 to 41 in length of abdomen and from 27 to 30 in length of hind wing. The size seems to vary independently of locality though more material might show that averages varied for widely separated localities, having very different altitudes. This is indicated by the fact that the largest specimen is from El Fiscal in the

mountains, but a second specimen taken there has the abdomen 37, while the smallest specimen is from Puerto Barrios at sea level.

In coloration two distinct groups are recognizable in the material: group 1, specimens from Aqua Caliente and El Fiscal; group 2, specimens from Puerto Barrios, Los Amates and Amatitlan. Group 1 most nearly resembles the type material from Tuxpan, Mexico. In this group the face markings are pale and not well defined; pale dorsal thoracic stripes separated in every case from the pale mesothoracic margin; pale antehumeral stripe barely or not separated to form a superior spot and an inferior stripe; wide pale stripe on mesepimeron continuous; wide pale stripe on metepisternum narrowly or scarcely divided to form a superior spot and an inferior stripe; metepimeron with the posterior inferior half or slightly more, pale; abdominal segment, 1 broadly pale below on the sides; 2 with a longitudinal pale dorsal stripe the full length of the dorsum, the auricle, a spot behind it and the inferior posterior margin of the segment conspicuously pale; 3 with a relatively broad longitudinal pale dorsal stripe from the base to the apical spines, and with the inferior lateral margin broadly pale; on 4 the dorsal stripe extends from the base about four-fifths the length of the segment, and on 5 about three-fourths; on 6 this stripe is a little more than half the length of the segment, dilated at the base to form a transverse band, as on segments 4 and 5, and again equally dilated just anterior to the transverse carina to form a second transverse band; 7 entirely yellow at base, except the extreme lower border, to the transverse carina, with a dorsal prolongation of yellow about two-fifths across the apical black, and with the lower margin, posterior to the transverse carina, broadly yellow; lower half of 8-10, in side view, obscurely patterned in yellow or yellowish

brown; basal black on dorsum of appendages reaching the level of the externo-lateral dilatation of the appendages.

In specimens of group 2 the colors are as follows: face markings dark brown, conspicuous and well defined; pale dorsal thoracic stripes very slightly narrower than in group 1, widely separated from the pale mesothoracic collar, which is more widely divided in the median line than it is in group 1; pale antehumeral narrowly to widely separated above to form a superior spot and an inferior stripe; pale stripe on mesepimeron narrower than in group 1, and separated to form a superior and inferior spot; pale stripe on metepisternum narrower than in group 1 and narrowly to widely separated to form a superior spot and an inferior stripe; metepimeron largely dark, the pale forming a posterior vertical stripe; abdominal segment 1 narrowly pale below on the sides; 2 with a median dorsal spot, the auricle, and the inferior posterior margin of the segment narrowly pale; 3 with a narrow dorsal stripe from the base to three-fourths the length of the segment, and with the inferior lateral margin very narrowly pale; on 4-6 the pale area is restricted to a small dorsal basal spot on each segment; 7 yellow to the transverse carina, with the inferior margin of this area broadly black, and with the lower border, posterior to the transverse carina, very narrowly if pale at all; 8-10 in lateral view black; basal black on dorsum of appendages extended apically twice as far as in group 1.

*Progomphus* sp.

Fig. 3, 7, 15

A single female was captured at La Tigrera, about ten miles from Santa Marta, on December 20, 1916. The Tamacal flows through La Tigrera, and the specimen was resting at an elevation of about eight feet on the tip of a dead twig of a small



tree growing on the bank of the stream. It was found late in the afternoon, and further search then and during a subsequent visit failed to reveal more specimens. The species is apparently unnamed but I do not care to name it from such scanty material. A brief description of the single female follows:

Abdomen 30, hind wing 25.5. Labrum, nasus and frons in front rich dark brown; rhinarium and a small spot on the lateral margin of the nasus gray; frons above in front greenish yellow, the posterior half and the vertex brown, and the occiput darker brown. Postocellary ridges meeting in the median line in an angle of about  $120^\circ$  with no conspicuous median prominence. Occipital edge nearly straight, very slightly concave, a scarcely discernible median concavity; occipital hairs short.

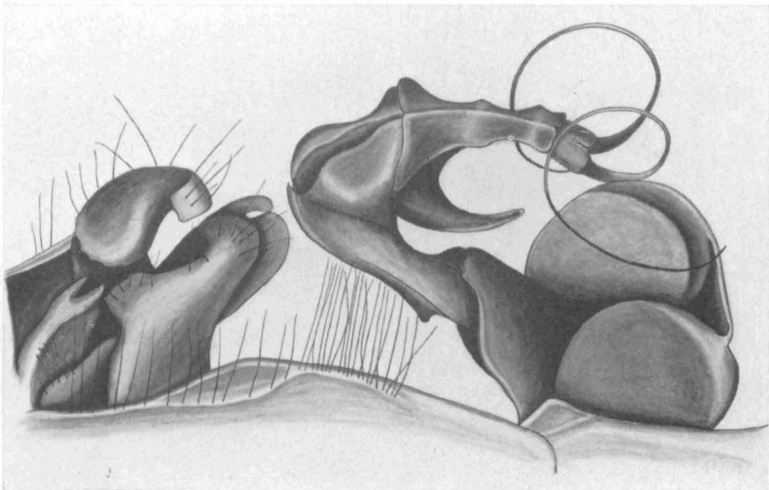
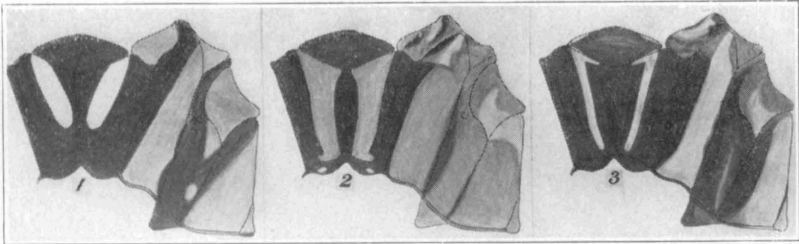
Prothorax brown, the anterior lobe lighter and the posterior lobe darker, the inflated areas of the median lobe greenish yellow. Thorax rich dark brown marked with greenish yellow (see fig. 3), the brown on the metepimeron lighter than on the mesepisternum. Beneath and coxae greenish yellow, the latter shaded and marked with light brown.

Abdomen brown, marked greenish yellow; 1 brown, pale below; 2 with a narrow median longitudinal stripe the length of the segment and the sides broadly pale; 3 and 4 with the merest trace of the same dorsal line, not discernible throughout the length of the segment on 4; 3-6 each with a large dorsal basal spot on either side of the median line, the two on each segment narrowly separated, and with the inferior lateral margin pale; 7 apparently pale basally to the transverse carina, and with the sides below, posterior to the carina, largely pale brown or yellowish; 8 and 9 dark brown or black above, the sides extensively paler brown or yellowish, similar to 7 posterior to the transverse carina; 10 black; appendages light brown or grayish, darker at the extreme base.

## PLATE I

Figs. 1-3, diagrams of thoracic color patterns. Fig. 1, *Progomphus risi*, male, Gualan, Guatemala; fig. 2, *Progomphus pygmaeus*, male, Bolivar, Colombia; fig. 3, *Progomphus* sp., female, La Tigrera, Colombia, December 20, 1916.

Fig. 4, accessory genitalia of the second abdominal segment of *Progomphus pygmaeus*, male, Bolivar, Colombia, December 24, 1916.







*University of Michigan*

PLATE II

Wing photographs by C. H. Kennedy. Fig. 5, *Progomphus pygmaeus*, male, Bolivar, Colombia, December 25, 1916; fig. 6, *Progomphus risi*, male, Gualan, Guatemala, June 16, 1909; fig. 7, *Progomphus* sp., female, La Tigrera, Colombia, December 20, 1916.

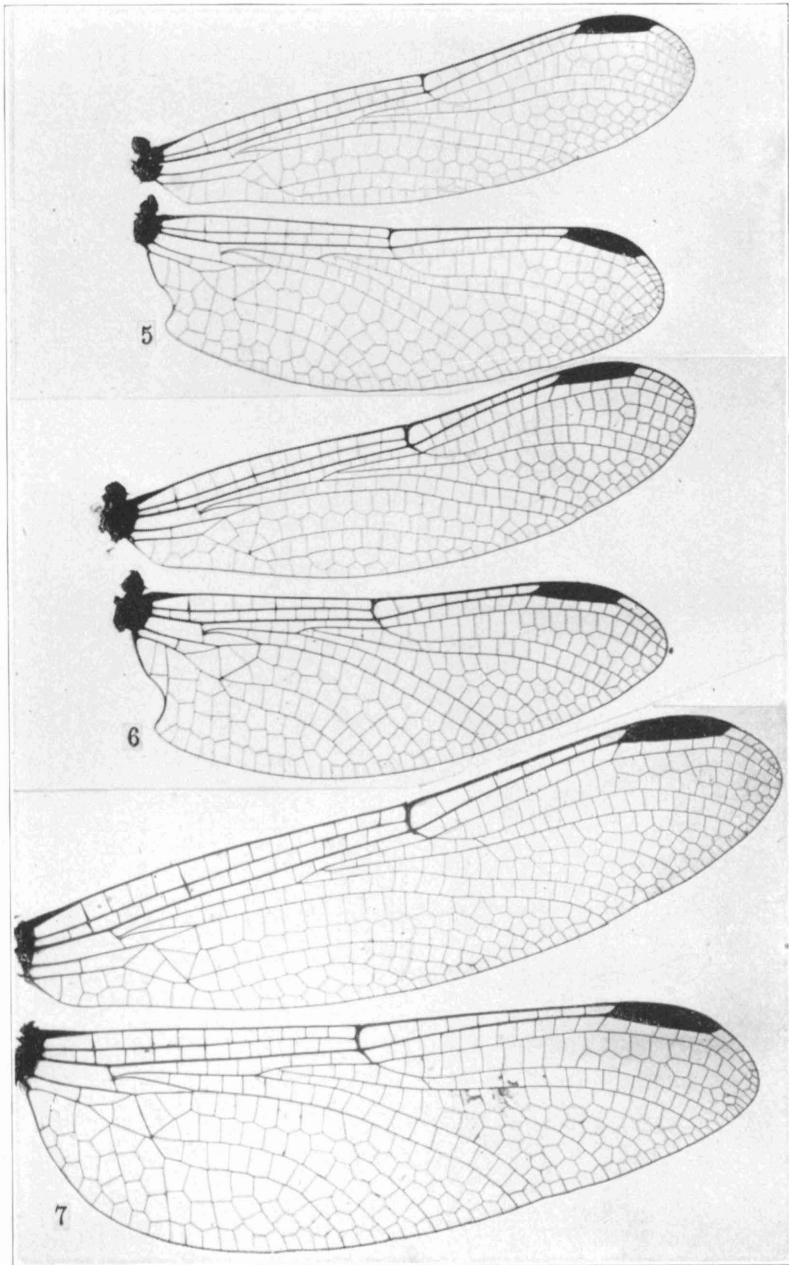








PLATE III

Figs. 8-11, *Progomphus risi*, type male and allotype female; figs. 12-14, *Progomphus pygmaeus*, male and female, Bolivar, Colombia, December 24, 1916; fig. 15, *Progomphus* sp., female, La Tigrera, Colombia, December 20, 1916.

Fig. 8, accessory genitalia of second abdominal segment; figs. 9 and 12, inferior views and figs. 10 and 12, lateral views of male abdominal appendages; figs. 11, 14 and 15, female vulvar lamina.

