

AMERICAN MUSEUM NOVITATES

Published by

Number 1291

THE AMERICAN MUSEUM OF NATURAL HISTORY
New York City

July 19, 1945

THE PSEUDOSCORPION SUBFAMILY OLPIINAE

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The present study is concerned primarily with new genera and species of Olpiinae from the West Indies. The insular pseudoscorpion fauna of this region is poorly known, being subjected to no more than an incidental and precursory examination by a few authors. It is no surprise, then, to find that collections from the West Indies contain predominantly species that are new to the literature. Certainly the number of new species described here is insignificant in re-

lation to the species that remain undescribed in the islands of the West Indies.

This study is based on material submitted to the writer by the American Museum of Natural History and completes the study and description of Neotropical Diplosphyronida in the American Museum collections. Types, all of which are mounted in Canada balsam, are deposited in the American Museum of Natural History.

SUBORDER DIPLOSPHYRONIDA CHAMBERLIN

OLPIIDAE CHAMBERLIN

Olpiinae Banks, emend.

Olpiinae BANKS, 1895, Jour. New York Ent. Soc., vol. 3, pp. 2, 10 (*pro parte*). CHAMBERLIN, 1930, Ann. Mag. Nat. Hist., ser. 10, vol. 5, pp. 588, 598. CHAMBERLIN, 1931, Stanford Univ. Publ., Univ. Ser., Biol. Sci., vol. 7, no. 1, p. 225. BEIER, 1932, Das Tierreich, vol. 57, p. 179. ROEWER, 1937, in Bronn, H. G., Die Klassen und Ordnungen des Tierreichs, vol. 5, div. 4, book 6, no. 2, pp. 259-260.

The diagnosis of this subfamily has undergone considerable change since its establishment by Banks. In 1930 Chamberlin formulated the modern concept of this category by greatly restricting the diagnosis to include only those Olpiidae that have entire arolia (designated as empodia by Chamberlin in 1930), undivided tergites and sternites, and a cheliceral flagellum of three blades or setae. In 1932 Beier found it necessary to alter the diagnosis to include forms that have a flagellum of four setae. With the inclusion of the present new genus *Neopachyolpium*, the Olpiinae must be further amended to in-

clude forms that have only two setae in the flagellum.

REVISED DIAGNOSIS: Tergites and sternites undivided; flagellum with three, seldom with two or four, setae; arolia simple, undivided.

In order to facilitate future work in the Olpiinae and to indicate intergeneric relationships, the inclusion of a key to the genera of the subfamily seems advisable. This key is based in part on the one by Roewer (1937). Since the genera fall into two natural groups characterized by the nature of the pars basalis and pars tibialis of the first leg, two tribes are established as indicated in the key.

KEY TO GENERA OF THE SUBFAMILY OLPIINAE

1. First leg with pars tibialis plainly shorter than the pars basalis, the two parts separated by a freely movable joint (tribe Olpini).....2
- First leg with pars tibialis subequal to, or longer than, pars basalis, the nature of the joint between the two femoral parts allowing only restricted movement (tribe Xenolpini).....11

¹ Quincy College, Quincy, Illinois. This study was completed with the help of a Grant-in-Aid from the Sigma Xi Research Fund. The writer is indebted to the Reverend Pacific Hug, O.F.M., Ph.D., for a translation from the Italian of a part of Balzan's (1890) publication.

2. Palpal femur without a dorsal tactile seta.....3
Palpal femur with a dorsal tactile seta.....7
3. Venom ducts long, nodus ramosus of fixed finger proximal to tactile seta *it*.....Genus
.....*Hesperolpium* Chamberlin, 1930
Venom ducts short, nodus ramosus of fixed finger not proximal to tactile seta *it*.....4
4. Abdominal tergites with 8–12 heavy marginal setae.....
.....Genus *Parolpium* Beier, 1931
Abdominal tergites with 2–4, at the most 6, small marginal setae.....5
5. Fixed chelal finger with tactile setae of internal series (*it*, *ist*, *isb*, and *ib*) grouped together at base of finger..
.....Genus *Thaumtolpium* Beier, 1931
Tactile setae of internal series not forming a group at the base of the fixed finger.....6
6. The tactile seta *it* of the fixed chelal finger is clearly distad to *esb*....
.....Genus *Olpium* Koch, 1873
The seta *it* and *esb* are almost opposite each other.....
.....Genus *Minniza* Simon, 1881
7. Each middle tergite with 10–16 heavy marginal setae.....8
Each middle tergite with at most 6 small marginal setae.....10
8. Tactile seta *ist* of fixed chelal finger clearly distad of *est*.....
.....Genus *Apolpium* Chamberlin, 1930
Tactile seta *ist* proximal to *est*.....9
9. Subapical lobe of cheliceral finger conical, short, blunt.....
.....Genus *Pachyolpium* Beier, 1931
Subapical lobe claw-like, slender, very long, directed parallel to the apical tooth.....
.....Genus *Neopachyolpium*, new genus
10. Venom ducts short, nodus ramosus of fixed finger distal to tactile seta *it*..
.....Genus *Olpiolum* Beier, 1931
Venom ducts long, nodus ramosus of fixed finger clearly proximal to tactile seta *it*.....
.....Genus *Calocheirus* Chamberlin, 1930
11. The subapical lobe of the movable cheliceral finger simple and undivided.....12
The subapical lobe of the movable cheliceral finger secondarily divided into two or more small lobes.....14
12. No tactile seta on dorsal surface of palpal femur.....
.....Genus *Xenolpium* Chamberlin, 1930
At least one tactile seta on the dorsal surface of the palpal femur.....13
13. One tactile seta on dorsal surface of palpal femur.....
.....Genus *Euryolpium* Redikortzev, 1938
Two tactile setae on dorsal surface of palpal femur.....
.....Genus *Indolpium*, new genus
14. No tactile setae on the dorsal surface of the palpal femur.....
.....Genus *Horus* Chamberlin, 1930
Two long and well-separated tactile setae (areoles weak; setae often fragile and broken) on the dorsal surface of the palpal femur.....
.....Genus *Novohorus*, new genus

PACHYOLPIUM BEIER, EMEND.

Pachyolpium BEIER, 1931, Mitt. Mus. Zool. Berlin, vol. 17, p. 310. BEIER, 1932, Das Tierreich, vol. 57, p. 193. ROEWER, 1937, in Bronn, H. G., Die Klassen und Ordnungen des Tierreichs, vol. 5, div. 4, book 6, no. 2, pp. 261–262.

REVISED DIAGNOSIS: Cephalothorax longer than wide, without cross furrows; each central tergite with usually 10–14 marginal setae; cheliceral flagellum with three setae; subapical lobe of chelicera stout and blunt; palpus moderately stout; palpal femur with a dorsal sensory seta near the base; sensory seta *est* near midpoint or proximal to midpoint of fixed finger, *et* and *it* distal to *est*; *ist* proximal to *est* and often near the finger base; pars basalis of first leg a little longer than, to almost twice as long as, the pars tibialis, the joint between the two allowing free movement; typically a Neotropical genus.

For the convenience of future workers and in order to point out interspecies relationships within the genus *Pachyolpium*, the following key is given to species known in the genus. In addition to the species included in the key, it is possible (*vide* Beier, 1932) that *Olpium minutum* Banks, 1908,

and *O. obscurum* Banks, 1893, may also belong to this genus. Incompleteness of the original descriptions, however, precludes definite assignment of these two species to the present genus until the type specimens can be examined. While a generic assignment cannot be made on the descriptions available, it is apparent that none of the specimens described here belong to either of Bank's species.

KEY TO THE SPECIES OF THE GENUS

Pachyolpium

1. Length of movable chelal finger 0.4 mm. or less; palpal tibia 0.45 mm. or less in length; length:width ratio of palpal femur 2.5 or less; body length 2 mm. or less.....2
Length of movable finger 0.4 mm. or more; palpal tibia 0.5 mm. or more in length; length : width ratio of palpal femur 2.6 or more (except *P. adiposum* Hoff, 1945); body size variable, usually (but not always) greater than 2 mm.....4
2. Movable finger of chela 0.26 mm. long, shorter than hand without base (reported from Paraguay)....
 P. brevifemoratum (Balzan, 1890)
Finger length 0.35 mm. or greater, subequal to length of hand without pedicle (reported from West Indies).....3
3. Tibia of palp slightly shorter than the femur; length: width ratio of palpal femur 2.5; width of chela 0.25 mm..
 *P. incertum* Beier, 1931
Tibia of palp slightly longer than femur; length: width ratio of palpal femur 2.3 or less; width of chela about 0.31 mm.....
 *P. brevipes* (With, 1907)
4. Length:width ratio of palpal femur 2.7 or less.....5
Length:width ratio of palpal femur 2.8 or more.....8
5. Length:width ratio of palpal femur 2.35.....*P. adiposum* Hoff, 1945
Length:width ratio of palpal femur 2.6 to 2.7.....6
6. Femur and tibia 0.7 mm. or more in length... ♀ *P. arubense* Beier, 1936

- Femur and tibia 0.6 mm. or less in length.....7
7. Body less than 2 mm. long; tibia 2.3 times as long as wide.....
 *P. reimoseri* Beier, 1931
Body of male about 2 mm. long, female longer; tibia 2.4 to 2.45 times as long as wide.....
 *P. puertoricensis*, new species
 8. Body length less than 2 mm.; length of movable chelal finger less than 0.5 mm.....
 *P. confundens*, new species
Body length 2.2 mm. or more; length of movable chelal finger more than 0.5 mm.....9
 9. Tibia with length 0.8 mm. or more; femur more than 0.78 mm. long....
 *P. erratum* Beier, 1931
Tibia and femur length 0.7 mm. or less.....10
 10. Length of palpal femur about 0.9 of the length of the tibia.....
 *P. furculiferum* (Balzan, 1891)
Palpal femur and tibia subequal in length.....11
 11. Movable finger of chela less than 0.55 mm. long, length of chela 2.6 times the width.....
 ♂ *P. arubense* Beier, 1936
Movable finger of chela more than 0.55 mm. long, usually 0.6 mm. or more; length of chela 2.65 or more times the width.....12
 12. Inner margin of palpal femur convex; movable finger of chela shorter than hand with pedicle.....
 *P. crassichelatum* (Balzan, 1890)
Inner margin of palpal femur very weakly convex; movable finger of chela subequal to the length of the hand with pedicle.....13
 13. Length of palpal femur 3 times the width; movable finger of chela more than 0.66 mm. long; length of palpal tibia 0.7 mm.....
 *P. aureum*, new species
Length of palpal femur 3.05 or more times the length; length of movable finger of chela less than 0.65 mm.; length of palpal tibia less than 0.68 mm.....
 *P. medium*, new species

***Pachyolpium aureum*, new species**

Figures 1-4

MALE: Moderately stout; abdomen and legs yellow to golden; carapace and palps deep golden to reddish brown color; body length 2.7-2.8 mm. Carapace smooth except for very weak granules on the sides behind the eyes; setae sparse; posterior margin nearly straight, with four setae separated from the margin by a narrow unpigmented band; lateral margins convex; carapace narrowed near the eyes; short anterior margin with a small and weakly developed median sinuation, a pair of sub-medial setae and one seta at each anterior-lateral corner; the eyes of each pair subequal in size, separated by about one-half the longitudinal diameter of the anterior eye; the anterior eye removed from the anterior margin of the carapace by slightly more than the diameter of the eye; length of carapace about 0.8 mm.; greatest width 0.68 mm. near the posterior one-fourth, posterior width slightly less; ocular width 0.48 mm. Abdomen ovate, about 2 mm. long, width about one-half of the length; tergites with very weak net-like markings; the anterior two tergites little sclerotized; first tergite with four marginal setae, the second with six or eight; sternites with net-like lines and setae more weakly developed than those of the tergites; sternites of central portion of abdomen with a marginal row of about 10 setae; a marginal row of four setae near the center of the fourth sternite and another seta just mesial to each stigmatic plate; stigmatic plates asetaceous.

Chelicera: Base fairly stout, smooth; all five basal setae long and acute; flagellum of three blades, the longest very heavy and bearing 12-15 denticulations along the distal half of the anterior margin; the central flagellar blade more seta-like, a little more than one-half the length of the first, apparently with one or two very fine subterminal microdenticulations; the third flagellar blade similar to the central one but slightly shorter. Fixed finger well curved; lamina exterior with evenly convex outer margin; apical tooth sclerotic, brown in color, with a very weak denticle on the inner margin of the tooth; five or six

flat retroconical marginal teeth confined to the distal half of the inner margin of the finger and continuous with the small denticle of the apical tooth; serrula interior very transparent, most teeth fused to form a velum; distal tooth of serrula modified to form a spine-like structure located near the level of the center of the row of marginal teeth and directed toward the subapical tooth of the opposing finger. Movable finger fairly stout, outer margin weakly convex, inner margin concave; serrula exterior of 23-25 ligulate plates; apical tooth brown in color, sclerotic; subapical lobe very near the base of the apical tooth, blunt, fairly stout; galea trifurcated near the terminal fifth, the rami simple, gently curved, and finger-like; galeal seta inserted between the subapical lobe and the base of the galea, about equal in length to the galea.

Palpus: Maxilla stout; smooth, few setae; apical process with a strong terminal seta, a well-developed seta near the outer margin at about the midpoint of the process, and several smaller setae on basal portion; length of maxilla 0.45-0.47 mm., between 1.6 and 1.8 times the width. Trochanter stout; inner margin smooth, with several long setae; outer margin almost straight distal to the pedicle, a few granules near the outer distal corner, setae sparse and stout; length 0.355-0.38 mm., 1.42 times the width. Femur with pedicle wider than long; dorsal sensory seta well within the basal one-third of the podomere; smooth except for small scattered granules on the flexor surface; setae fairly numerous, longer on the flexor than on the extensor surface; extensor margin centrally straight; flexor margin convex proximal to the distal third, in the distal third very slightly concave; length 0.705 mm.; width greatest just proximal to the midpoint, 0.228 mm. in the holotype, 0.235 mm. in the paratype; length 3 to 3.1 times the width. Tibia with very few inconspicuous granules on the flexor surface; setae fairly numerous; pedicle stout; inner margin of tibia straight to weakly convex proximal to the distal one-third, very weakly concave beyond; outer margin flatly convex basal to the distal fourth,

slightly more convex beyond; tibia of holotype 0.705 mm. long, 0.285 mm. wide, length 2.47 times the width; tibia of paratype 0.7 mm. long, 0.29 mm. wide, length 2.4 times the width. Chela of same color as rest of palp; hand stout, fingers slender and gently curved; pedicle displaced toward the outside; external margin flatly convex; the inner margin more evenly convex and rounded; long acuminate setae fairly numerous especially on the inner surface of the hand; chela smooth except for small but densely crowded granules on the distal two-thirds of the inner surface; chela about 1.2 mm. long, 0.415 mm. wide, length 2.85 to 2.9 times the width; length of hand without pedicle 0.575–0.59 mm.; depth of hand about 0.42 mm.; length of movable finger 0.68 mm. Chela from the side stout; the pedicle nearer the ventral side; the ventral margin weakly convex; dorsal margin rounded, especially near the base; movable finger slender, with evenly convex inner and evenly concave outer margin; fixed finger more stout, tapering distally, inner margin weakly convex, outer margin very weakly concave in the central portion; each finger with a well-developed lamina defensor. Fixed finger with about 40 teeth arranged along almost the entire inner margin; the teeth at the anterior end of the row small, heavily cusped, and conical; in the distal third of the row the teeth become wider and retroconical; at the proximal end of the row, the teeth become much flattened and with a heavy sclerotized cusp extending along the entire free margin of each tooth; nodus ramosus proximal to *et* about as far as the latter is from the finger tip. Movable finger with teeth similar in number and shape to those of the fixed finger; nodus ramosus on a level about two areolar diameters distal to *t*. Fixed finger with eight sensory setae; *et* within the distal one-eighth of the finger, *est* somewhat proximal to the midpoint, *it* on a level about one-third of the distance from *est* to the finger tip; *ist* on a level considerably proximal to *est* and between two and one-half and three times as far from the finger tip as from the level of *ib*; *isb*, *esb*, and *eb* forming a group of three setae on the external

surface at the base of the finger; *ib* on the dorsal surface of the finger near the base on nearly the same level as *isb*. Movable finger with *t* about one-fourth of the finger length from the tip, *st* about two and one-half times farther than *t* from the finger tip, *sb* between one-sixth and one-fifth of the finger length from the base, *b* about three areolar diameters proximal to *sb*.

Legs: Smooth; yellowish color; setae acuminate. First leg: trochanter subtriangular, no pedicle, extensor surface short and straight, flexor surface distally convex but proximally a little concave, length 0.19 mm., depth 0.167 mm.; pars basalis of femur elongate, flexor margin very weakly convex, extensor margin with a marked concavity at about the distal third, deepest at the distal end, length 0.34 mm., depth 0.123–0.13 mm.; pars tibialis much shorter than the pars basalis, extensor margin flatly convex, flexor margin nearly straight in the center, deepest near the distal end, length 0.19–0.2 mm., depth 0.12 mm.; tibia with a very weakly concave extensor margin, flexor margin evenly convex, setae fairly numerous, length 0.28–0.29 mm., depth about 0.085 mm., length 3.25 to 3.45 times the depth; metatarsus subcylindrical, flexor margin very weakly convex, extensor margin a little concave, length 0.195–0.205 mm., depth 0.059–0.063 mm., length 3.1 to 3.5 times the depth; telotarsus with flexor margin virtually straight, extensor margin weakly convex, length 0.15–0.17 mm., depth about 0.045 mm.; tarsal podomeres with numerous well-developed setae; tarsal claws simple, relatively small, fairly heavy; arolium long and extending beyond the tarsal claws. Fourth leg with chaetotaxy and color much as in the first leg; trochanter with flexor margin nearly straight, extensor margin highly arched, length about 0.3 mm., about one and one-third times the depth; pars basalis with flexor margin convex but weakly so in the distal portion, numerous setae on the flexor surface, length 0.24 mm., depth about 0.16 mm.; pars tibialis very stout, flexor margin evenly but weakly convex, extensor margin evenly convex except for an abrupt bending of the margin at the proximal-extensor

corner, numerous long setae especially on the flexor surface, length about 0.63 mm., depth 0.355 mm.; entire femur with the flexor margin evenly convex and uninterrupted at the juncture of the pars basalis and pars tibialis; length of entire femur 0.72–0.735 mm., depth 0.355 mm.; tibia with evenly convex flexor margin; extensor margin nearly straight distal to the midpoint but a little convex proximal to the midpoint, deepest near the distal third, length 0.52–0.53 mm., depth 0.145 mm.; metatarsus subcylindrical, length 0.26–0.275 mm., depth about 0.082 mm.; telotarsus with flexor margin almost straight, extensor margin convex, length 0.205 mm., depth 0.061 mm.; setae very numerous on the tarsal podomeres; extensor surface of metatarsus with a long tactile seta about one-seventh or one-eighth of the podomere length from the proximal end and a pseudotactile seta just within the distal one-third of the podomere; telotarsus with three long pseudotactile setae, of which one is located about one-third and the other two about two-thirds of the podomere length from the proximal end; terminal claws and arolium as in the first leg.

Genital complex: Posterior operculum with two or more long submedial setae near the posterior margin and four others on the posterior edge of the genital aperture; anterior operculum with a row of two to four setae at each antero-lateral corner of the genital aperture and two or three setae some distance anterior to each row.

FEMALE: Unknown.

TYPE LOCALITY: The male holotype in a collection from Mona Island, taken in February, 1914; the male paratype from Coamo Springs, Puerto Rico, in June, 1915. The latter individual belongs to the collection from which *P. puertoricensis*, new species, is described.

In Beier's key (1932) to the species of the genus *Pachyolpium*, *P. aureum* keys out to *P. crassichelatum* (Balzan, 1890), a species reported from south of the Amazon River in South America. Measurements of palpal podomeres, especially the length:width ratios of the femur and tibia, are very similar in the two forms. The femur of our species is much less stout, however, than

that pictured by Beier (1932, fig. 224) for *P. crassichelatum*, which in turn does not agree with either the original description by Balzan or Beier's redescription. According to the original and later descriptions and figures given by Balzan (1890, pp. 439–440, figs. 20, 20a, 20b; 1891, p. 537, fig. 29) *P. aureum* seems to differ from *P. crassichelatum* in the following respects: the inner margin of the chelal hand is more flatly rounded and not so convex in the former; the inner margin of the palpal femur is nearly straight and not centrally bulging and convex as pictured for *P. crassichelatum*; palpal podomeres are finely granular on the medial surface, not smooth; and the longest flagellar seta is longer and more slender in our form with many more unilateral denticulations than shown by Balzan (1890, fig. 20b) for *P. crassichelatum*. Our form also resembles to some extent *P. furculiferum* (Balzan, 1891), but the palpal tibia is stouter, the chelal fingers are longer than the hand without the pedicle, and the inner surfaces of the palpal podomeres are finely granular in contrast to the smooth condition reported for *P. furculiferum* (fide Beier, 1932). Separation of *P. aureum*, new species, from *P. medium*, new species, is indicated in the key.

***Pachyolpium puertoricensis*, new species**

Figures 5–8

MALE: Body moderately stout; abdomen and legs light yellow color, carapace slightly darker; palps yellow to yellowish brown with chela a little darker than more proximal podomeres; body length about 2 mm. Carapace nongranular; a few setae present; posterior carapacial margin nearly straight with four setae separated from the margin by a narrow unpigmented band; lateral margins weakly convex behind the eyes; carapace much narrowed before the eyes; anterior margin with a shallow median sinuation and a pair of submedial setae; another pair of setae near each latero-anterior corner of the carapace; the two eyes of each side subequal in size, separated from each other by about one-half the diameter of one eye; anterior eye of each pair removed from the anterior

margin by between one and one-half and two times the diameter of the eye; length of carapace 0.52–0.57 mm.; greatest width near the posterior one-third and about 0.8 of the length; posterior width a little less than greatest width; ocular width 0.33–0.37 mm. Abdomen oval in shape, length 1.35–1.5 mm., width about one-half of the length; tergites weakly sclerotized, smooth; first tergite with four to six setae, second with six to eight; sternites also weakly sclerotic, pale yellow in color; a few of the anterior sternites faintly marked by net-like lines, sternite 4 with a medially placed row of six marginal setae and a lateral seta just medial to each stigmatic plate; number of setae on each sternite of the central part of the abdomen usually about 12; stigmatic plates asetaceous.

Chelicera: Fairly stout; yellow in color; the five basal setae long; flagellum of three setae, the longest forming a stout blade with six to eight (occasionally 10) heavy unilateral denticulations along the anterior margin of little more than the distal one-third; the other two setae subequal in length, each with a few weak and sub-terminal denticulations and little more than one-half the length of the first; length of chelicera 0.185–0.195 mm.; width of base 0.125–0.135 mm. Fixed finger curved; lamina exterior with an evenly convex outer margin; apical tooth little sclerotic, acute, with a minute denticle on the inner surface; distal half of inner margin of finger with five or six retroconical teeth; teeth of serrula interior as in the preceding species. Movable finger 0.175–0.18 mm. long; outer margin nearly straight to weakly convex; inner margin weakly concave; finger of nearly the same width throughout; serrula exterior of about 25 ligulate plates; apical tooth light brown in color, slender, acute, directed almost at a right angle to the longitudinal axis of the finger; subapical lobe conical in shape; galeal seta inserted near base of the sub-apical lobe and reaching about to the tip of the galea; galea slender with two weak and slender spine-like rami near the distal one-fourth.

Palpus: Moderately stout; surface smooth except for a very few minute

granules on the inner surface of the hand at the base of the fingers in some individuals; surface polished in appearance, with numerous acuminate setae. Maxilla fairly stout; apical process with a terminal seta and two other long setae along the outer margin some distance from the tip; several setae on the smooth face of the maxilla; length 0.325–0.355 mm., about 1.8 times the width. Trochanter with evenly convex flexor margin, extensor margin straight to weakly convex; several long setae on the flexor surface; length 0.285–0.295 mm., about 1.8 times the width. Femur with pedicle much shorter than wide and symmetrically placed; extensor margin almost straight in central portion, weakly convex in the distal fourth; flexor margin with basal half weakly convex, distal half weakly concave; dorsal sensory seta within the basal one-third of the podomere; length 0.445–0.45 mm.; greatest width near the basal third, 0.165–0.17 mm.; length 2.6 to 2.7 times the width. Tibia with pedicle about as long as wide; outer margin more flatly convex in the proximal than in the distal half; inner margin bulging, proximal two-thirds weakly convex, distal one-third with a weak sinuation; length 0.5–0.51 mm.; width 0.21 mm. Chela from the dorsad with pedicle displaced far toward the outer side; outer margin evenly convex; inner margin slightly more convex than the outer; fingers moderately stout, gently curved; long acuminate setae fairly numerous; length of chela 0.795–0.82 mm.; width 0.305–0.325 mm.; length 2.5 to 2.6 times the width; length of hand without pedicle 0.4–0.425 mm.; depth of chela subequal to width; length of movable finger 0.415–0.435 mm. In lateral view, hand and fingers relatively stout; pedicle placed toward the ventral side; both dorsal and ventral margins weakly and somewhat flatly convex; movable finger with weakly concave inner margin, slightly convex outer margin; fixed finger with inner margin weakly convex, outer margin very weakly convex to virtually straight. Both chelal fingers with between 30 and 35 marginal teeth arranged along most of the margin; teeth at the very distal end of the row small and conical, those of the proximal

part of the row flat and rounded. Tactile setae of movable finger with *t* about one-third of finger length from tip and *st* about one-third of finger length from base, *sb* nearly midway between base of finger and *st*, *b* about two areolar diameters proximal to *sb*; nodus ramosus somewhat distal to tactile seta *t*. Fixed finger with *et* about one-eighth of the finger length from tip, *est* slightly proximal to midpoint of finger; *it* distal to *est* and near or a little distal to the midpoint of finger, *ist* within about the basal third or fourth of the finger and on a level midway between the levels of *est* and *eb*; *ib* near base of finger on dorsal surface; *isb*, *esb*, and *eb* forming a row of three setae near the finger base, with *esb* on about the level of *ib*; nodus ramosus located proximal and a little closer to *et* than the latter is to the finger tip.

Legs: Smooth; acuminate setae more numerous on the tarsal podomeres than elsewhere. First leg with trochanter subtriangular, flexor margin evenly convex except near the pedicle, extensor margin nearly straight, length about 0.13 mm., depth 0.11–0.12 mm.; pars basalis with flexor margin weakly convex, extensor margin with a weak central concavity, length 0.235–0.245 mm., depth 0.088 mm.; pars tibialis about three-fifths as long as the pars basalis, extensor and flexor margins weakly convex, length 0.145–0.15 mm., depth 0.087–0.089 mm., length 1.6 to 1.75 times the depth; tibia with convex flexor margin, extensor margin with a weak concavity centered between the midpoint of the margin and the distal third, length about 0.21 mm., depth 0.06–0.065 mm.; metatarsus with weakly convex flexor margin, weakly concave extensor margin, slightly narrowed toward the distal end, length 0.148–0.157 mm., depth about 0.046 mm.; telotarsus with flexor margin nearly straight, length 0.13–0.15 mm., depth about 0.036 mm.; arolium extending well beyond the slender and simple terminal claws. Fourth leg: trochanter with nearly straight flexor margin, extensor margin very convex, length 0.21–0.225 mm., depth about 1.5 mm.; pars basalis with flexor margin convex and with numerous setae on the flexor surface,

length 0.18–0.19 mm., length 1.5 to 1.6 times the depth; pars tibialis very stout, flexor margin moderately convex, extensor margin convex except at the very proximal end where the margin bends somewhat abruptly to meet the short extensor margin of the pars basalis, a few setae on both extensor and flexor surfaces, length 0.445–0.47 mm., depth 0.25–0.255 mm., length 1.78 to 1.87 times the depth; entire femur 0.52–0.55 mm. long, length 2.1 to 2.2 times the depth; tibia with moderately convex flexor margin, extensor margin weakly convex in the proximal part becoming almost straight in the distal portion, greatest depth near the distal third, length 0.385–0.4 mm., depth about 0.116 mm., length 3.35 to 3.45 times the depth; metatarsus with margins virtually straight to very weakly convex, slightly narrowed toward the distal end, the sensory seta on the extensor margin about one-eighth of podomere length from the basal margin, length about 0.215 mm., depth 0.065–0.07 mm., length 3.15 to 3.35 times the depth; telotarsus with flexor margin nearly straight, extensor margin irregularly convex and with pseudotactile setae, length 0.167–0.186 mm., depth 0.045–0.048 mm., length 3.5 to 4.05 times the depth; claws and arolium as in the first leg.

Genital complex: Posterior operculum with six well-spaced marginal setae behind the genital aperture and four to six setae on the very rim of the genital aperture, these latter forming two well-separated groups; anterior operculum with four to eight setae on the anterior rim of the aperture and a group of three scattered setae anterior and sublateral on each side of the aperture.

FEMALE: General appearance similar to that of the male except the body is larger, 2.3–2.6 mm. Carapace as in the male except larger and a little less elongate; length 0.63–0.67 mm.; width about 0.9 times the length; posterior width slightly less than greatest width; ocular width 0.4–0.44 mm. Abdomen 1.6–1.9 mm. long, width about one-half the length; other characteristics as in the male.

Chelicera: Length 0.22 mm.; width of base 0.15–0.165 mm.; movable finger 0.2–

0.21 mm. long; setae of base, the flagellum, and the fixed finger as in the male. Movable finger with galeal seta failing by a considerable distance to reach the tip of the galea; galea much larger than in the male, bifurcated near the distal one-fourth, with one of the rami secondarily bifurcated near its midpoint; all galeal rami well developed and gently curved; chelicera otherwise as in the opposite sex.

Palpus: Same general features as in the male but podomeres larger; maxilla 0.4 mm. long, length about twice the width; trochanter 0.32–0.34 mm. long, length about 1.8 times the width; femur length 0.525–0.53 mm., 2.7 times the width; tibia 0.59–0.6 mm. long, 2.4 times the width; chela length 0.96–1 mm., about 2.5 times the width; length of hand 0.53–0.56 mm.; movable finger 0.48–0.495 mm.; chela depth 0.38–0.4 mm. From the side, shape of hand and fingers, also position of tactile setae and nodi ramosi much as in the male. Teeth of the chelal fingers like those of the opposite sex except that there may be slightly more than 35 teeth on each finger.

Legs: Like those of the male with respect to shape, color, texture, and other general characteristics, but differing in size and sometimes in the length:depth ratios of podomeres. First leg with trochanter 0.14–0.155 mm. long, about 0.125 mm. deep; pars basalis 0.265–0.29 mm. long, length 2.8 to 2.9 times the depth; pars tibialis 0.16–0.17 mm. long, length 1.7 times the depth; tibia 0.235–0.25 mm. long, length between 3.4 and 3.6 times the depth; metatarsus about 0.17 mm. long, 0.05 mm. deep; telotarsus 0.135–0.15 mm. long, length 3.4 to 3.55 times the depth. Fourth leg: trochanter about 0.26 mm. long, length 1.6 to 1.65 times the depth; pars basalis 0.19–0.205 mm. long, depth about 0.137 mm.; pars tibialis 0.495–0.535 mm. long, depth 0.252 mm.; entire femur somewhat less stout than in the male, length 0.58–0.6 mm., depth 0.252 mm., length 2.3 to 2.45 times the depth; tibia 0.425–0.455 mm. long, length 3.6 to 3.75 times the depth; metatarsus 0.235–0.255 mm. long, about 3.4 times the depth;

telotarsus about 0.18 mm. long, length 3.3 to 3.55 times the depth.

Genital complex: Posterior operculum with six well-spaced marginal setae; anterior operculum with six submedially placed setae.

TYPE LOCALITY: The male holotype, the female allotype, two male paratypes, and one female paratype in a collection made at Coamo Springs, Puerto Rico, between June 5 and 7, 1915.

In the same collection were found two tritonymphs and one protonymph, apparently belonging to the genus *Pachyolpium*. Since *P. aureum* as well as the present species was present in the collection, it seems inadvisable to describe or identify the nymphs.

Pachyolpium puertoricensis shows relationship to several *Pachyolpium* species in which the palpal podomeres are stout. Separation of these forms is possible, however, on the basis of shape and length: width ratios of palpal podomeres. *P. puertoricensis* is to some extent related to *P. adiposum* Hoff, 1945, from the Canal Zone but can be identified by the stouter tibia and the much longer chela. Relationship of the present species to *P. confundens*, new species, is given under the description of the latter.

***Pachyolpium confundens*, new species**

Figures 9, 10

MALE: Body moderately stout; body and legs yellow; palps, especially chela, and carapace a little darker in color; length of body 1.8 mm. Carapace with nearly straight posterior margin, possibly two pairs of marginal setae; lateral margins evenly convex behind the eyes, carapace narrowed before the eyes; anterior margin relatively short with a weak median concavity, a pair of submedial setae, another seta just lateral to each anterio-lateral corner; surface virtually smooth, few acuminate setae; eyes of each pair nearly equal in size, those of each side separated by about one-half of the diameter of the eye, the anterior eye of each side removed from the anterior margin by about one and one-half times the diameter of the eye; carapace 0.6 mm. long, greatest

width 0.5 mm. near the center; posterior width 0.45 mm.; ocular width 0.385 mm. Abdomen stout, oval in shape; length 1.2 mm.; width about 0.75 mm. Tergites smooth; the first tergite with four setae, the second with six setae; sternites smooth, the same color as tergites; fourth sternite with six setae evenly spaced along the central portion of the posterior margin and a single seta just medial to each posterior stigmatic plate; greatest number of setae on any one sternite about 12; stigmatic plates asetaceous.

Chelicera: Fairly stout; length 0.21 mm.; base smooth, width 0.15 mm.; five acuminate setae long; flagellum of three setae; other details not available. Fixed finger tapering toward the slender and somewhat sclerotic apical tooth; apical tooth with a minute denticle on the inner surface appearing continuous with the six retroconical teeth of the inner margin of the finger; lamina exterior wide; serrula interior very transparent, terminal tooth elongate and spine-like, others fused to form a velum. Movable finger 0.178 mm. long; outer margin weakly convex, inner margin weakly concave; apical tooth sclerotic, brown in color, somewhat acute and slender; subapical lobe conical, placed near the level of the base of the galea; inner margin of finger apparently with a minute denticle a short distance proximal to the subapical lobe; galeal seta inserted near base of the subapical lobe and nearly equal in length to the galea; serrula exterior of 22 ligulate plates; galea consisting of a straight stalk with two weak and spine-like subterminal denticles.

Palpus: Moderately stout; color varying from yellow on the proximal podomeres to yellowish brown on chela and fingers; surface smooth and polished. Maxilla smooth with a few acuminate setae; apical process with one apical seta and two setae near the center; length of maxilla 0.34 mm., width about 0.19 mm. Trochanter with both flexor and extensor margins convex; length 0.31 mm.; width 0.165 mm. Femur with tactile seta on the dorsal surface in the proximal one-third of the podomere; pedicle shorter than wide and displaced a little toward the extensor

margin; flexor margin convex in the central part but nearly straight toward the distal end; numerous acuminate setae; greatest width near the midpoint; length 0.51 mm. width 0.175 mm., length 2.9 times the width. Tibia with outer margin flatly convex; inner margin angular near the distal third, margin proximal to this point flatly convex, distal to this point with a very weak concavity; surface with numerous acuminate setae; pedicle stout; length of tibia 0.545 mm., width 0.215 mm., length 2.53 times the width. Chela with outer margin weakly convex; inner margin well rounded; pedicle displaced toward the outer margin; fingers moderately stout and curved; chela smooth, with numerous acuminate setae; length of chela 0.905 mm., width 0.32 mm., length 2.83 times the width; hand without pedicle 0.44 mm. long; movable finger 0.465 mm. long. From the side, margins of hand weakly convex; hand about 0.28 mm. deep; fingers fairly stout, little curved; both fingers with a convex outer margin but inner margin nearly straight. Fixed finger with about 40 teeth, ranging from small conical teeth at the distal end to long and flat teeth at the proximal end of the row; movable finger with a few more than 40 teeth, these similar to the teeth of the opposing finger. Tactile setae of movable finger: *t* somewhat more than one-third of the finger length from the tip; *st* about one-third of finger length from the proximal margin; *sb* about midway between *st* and the proximal margin of the finger, *b* about two areolar diameters proximal to *sb*; *nodus ramosus* considerably closer to tactile seta *t* than to the finger tip. Fixed finger with *et* between one-fifth and one-sixth of the finger length from the tip, *est* about three-fifths of the finger length from the tip; *it* a little distal to the level of *est* and near the midpoint of the finger; *ist* a little farther from *it* than from the finger base; *isb*, *esb*, and *eb* forming a row of three setae on the external face near the finger base; *ib* located sub dorsally at about the same level as *esb*; *nodus ramosus* proximal to the level of tactile seta *et*.

Legs: Yellow in color; smooth; setae more numerous on the tarsal podomeres

than elsewhere. First leg with trochanter subtriangular, flexor margin moderately convex, extensor margin much less convex, length 0.15 mm., depth 0.123 mm.; pars basalis elongate, flexor margin irregularly and weakly convex, extensor surface weakly concave, deepest at the distal end, length 0.258 mm., depth 0.1 mm.; pars tibialis three-fifths as long as the pars basalis, both margins weakly convex, length 0.156 mm., depth 0.095 mm.; tibia with extensor margin weakly concave, flexor margin convex, length 0.21 mm., depth 0.07 mm.; metatarsus subcylindrical, length 0.16 mm., depth 0.055 mm.; telotarsus with flexor margin nearly straight, length 0.14 mm., depth 0.043 mm.; tarsal claws simple and relatively small, arolium extending for a short distance beyond the terminal claws. Fourth leg: pars basalis with evenly convex flexor margin, length 0.205 mm., depth 0.117 mm.; pars tibialis stout, flexor margin weakly convex, extensor margin convex especially at the proximal end, extensor surface almost asetaceous, length 0.475 mm., depth 0.245 mm.; entire femur 0.56 mm. long, length 2.3 times the depth; tibia very narrow at the proximal end, flexor margin evenly convex, extensor margin weakly convex in the proximal portion to slightly concave near the distal end, length 0.39 mm., depth 0.118 mm.; metatarsus with both margins very weakly convex, slightly narrowed toward the distal end, length 0.23 mm., depth 0.075 mm.; telotarsus with flexor margin straight, extensor margin convex, length 0.178 mm., depth 0.053 mm.; metatarsus with numerous long setae including a poorly developed tactile seta near the basal one-eighth of the extensor margin; telotarsus with numerous setae, those of the extensor surface especially long; tarsal claws and arolium as in the first leg.

Genital complex: Difficult to distinguish clearly in the holotype; probably similar to the genital complex of *P. puertoricensis*.

TYPE LOCALITY: The male holotype from a vial labeled "Dorado sifting, San Juan, P. R., Feb. 11-14, 1914."

The present species is very similar to *P. puertoricensis* but may be recognized by the more slender and longer chela in *P.*

confundens. Also, in *P. confundens* there are more teeth on the chelal fingers, and the pedicle of the palpal femur is displaced a little toward the outer margin so that the podomere appears less symmetrical than in *P. puertoricensis*.

***Pachyolpium medium*, new species**

Figures 11-15

MALE: Body moderately stout; appendages moderately slender; abdomen and legs yellow in color, carapace and palps golden yellow; body length 2.25-2.4 mm. Carapace stout; surface smooth except for very small granules (best seen in profile) on the anterior half of the lateral surfaces of all individuals and a band of weak net-like markings near the posterior marginal setae and on the posterior part of the lateral margin in some individuals; posterior margin straight, with two pairs of marginal setae separated from the true margin by an unpigmented band; lateral margins convex; anterior margin short, with a very shallow median concavity and a pair of submedial setae; a seta near each anterio-lateral corner; two pairs of well-developed eyes; eyes of each pair separated by less than one-half the diameter of an eye; the anterior eye removed from the anterior margin by a distance equal to, or slightly greater than, the longitudinal diameter of the eye; carapace narrowed in the region of the eyes; length of carapace 0.69-0.71 mm.; greatest width in the central part of the carapace and equal to 0.8 to 0.85 of the length; posterior width about 0.5 mm., somewhat less than the greatest width; ocular width 0.44-0.48 mm. Abdomen fairly stout; oval in shape; tergites and sternites weakly sclerotic, with very faint net-like surface markings; first tergite with four setae, second with six to eight; fourth sternite with four to six setae near the center of the posterior margin and one seta somewhat medial to each posterior stigmatic plate; maximum number of setae on any sternite usually about 10; length of abdomen 1.55-1.75 mm., about twice the width. Stigmatic plates asetaceous.

Chelicera: Fairly stout, yellow color, surface smooth; five setae present on base;

flagellum of three setae, the longest with numerous very fine denticulations along the distal half of the anterior margin, the middle seta little more than one-half as long as the longest, the shortest seta little less than one-half the length of the longest, each of the two short setae with two or three minute subterminal denticulations; length of chelicera 0.21–0.22 mm.; width of base 0.15–0.16 mm. Fixed finger distinctly curved near the base, distal portion less curved; outer margin of finger and outer margin of lamina exterior flatly convex; terminal tooth acute, a little sclerotic, bearing a small denticle on the inner margin; inner margin of finger with six or seven very flat, retroconical teeth arranged along the distal one-half of the finger margin; serrula interior with the distal tooth spine-like, other teeth fused into a velum. Movable finger with outer margin weakly convex, inner margin weakly concave; more or less constant in width throughout the distal three-fourths of the finger; apical tooth acute, sclerotic, brown in color; sub-apical lobe poorly developed and often bilobed; galeal seta inserted on a level with the base of the galea, not reaching to the tip of the galea; serrula exterior of 21 to 24 ligulate plates; galea with a long stalk-like basal portion, a ramus originating at about the distal one-fourth of the galea, another ramus slightly more distal; galeal rami simple and weak; length of movable finger 0.19–0.2 mm.

Palpus: Usually a golden yellow color throughout, some individuals lighter than others. Maxilla robust, laterally with a few scattered granules; apical process with a large apical and a large subapical seta, two or three smaller setae toward the base; length 0.43–0.46 mm., width 0.23–0.26 mm. Trochanter with margins rounded; a few small granules on the extensor-distal corner; numerous setae on the flexor surface; length 0.355–0.37 mm., width about 0.22 mm., length about 1.6 times the width. Femur relatively slender; pedicle wider than long and placed toward the extensor side; extensor margin virtually straight except near the ends; flexor margin very weakly convex; flexor surface with a few, minute, and widely scattered granules;

greatest width near the center; dorsal tactile seta well within the basal one-third of the podomere; length 0.61–0.63 mm., width 0.185–0.195 mm., length 3.2 to 3.4 times the width. Tibia with pedicle about as long as wide; extensor margin flatly convex in the basal two-thirds or three-fourths, more convex beyond; flexor margin flatly convex distal to the pedicle and proximal to the distal two-fifths, almost straight to weakly concave in the distal two-fifths; flexor surface with fewer granules than on femur, sometimes apparently smooth; length 0.62–0.63 mm., width 0.235–0.24 mm., length 2.6 to 2.7 times the width. Chela from dorsad not particularly stout; hand virtually smooth; extensor margin flatly convex in center; flexor margin more evenly convex; pedicle displaced toward the extensor side; finger fairly slender, evenly curved; length of chela 0.105 mm., width 0.348–0.367 mm.; length 2.9 to 3.05 times the width; length of hand without pedicle about 0.52 mm.; length of movable finger 0.57–0.60 mm. Chela from the side fairly stout; ventral margin flatly convex; dorsal margin more convex; pedicle displaced toward the ventral side; movable finger moderately slender, outer margin convex, inner very weakly to moderately and evenly concave; fixed finger slightly stouter, inner margin weakly convex, outer margin weakly convex to weakly concave; considerable variation in outline of the fingers as seen from the side; depth of hand about equal to width, 0.348–0.37 mm. Each chelal finger with between 45 and 50 contiguous teeth distributed along almost the entire finger margin; teeth much as in *P. aureum*, new species; each finger with a well-developed lamina defensor. Tactile setae of movable finger with *t* about one-fourth or slightly more of finger length from tip; *st* between one-third and four-ninths of the finger length from the base; *sb* usually a little farther from *st* than from the basal margin of the finger; *b* between two and three areolar diameters proximal to *sb*; *nodus ramosus* about two areolar diameters distal to tactile seta *t*. Fixed finger with *et* near the distal one-eighth of the finger length; *est* at, or slightly proximal to, the mid-

point of the finger, about midway between *et* and *eb*; *it* usually on a level between one-seventh and one-sixth of the finger length distal to *est*, *ist* about the same distance proximal to the level of *est*; *isb*, *esb*, and *eb* forming a row near the base of the finger; *est* and *eb* separated by about one areolar diameter, *isb* and *esb* separated by about two areolar diameters; *ib* between the levels of *isb* and *esb*; nodus ramosus nearly as far proximal to *et* as the latter is from the finger tip.

Legs: Moderately slender; smooth; yellow color; numerous setae on distal podomeres. First leg with trochanter subtriangular, external margin nearly straight, flexor margin convex, length 0.156–0.17 mm., about 1.25 times the depth; pars basalis elongate, extensor margin with a weak central concavity, flexor margin evenly convex, deepest near the distal end, length 0.29–0.3 mm., depth 0.1–0.11 mm.; pars tibialis little more than half as long as the pars basalis, both margins weakly convex, length 0.155–0.175 mm., depth 0.095–0.1 mm.; tibia with extensor margin very weakly to weakly concave, flexor margin weakly convex, deepest near the center, length about 0.26 mm., depth 0.072–0.079 mm.; metatarsus subcylindrical, slightly less deep toward the distal end, length 0.175–0.185 mm., 3.5 to 3.6 times the depth; telotarsus slender, length 0.136–0.145 mm., 3.8 to 3.9 times the depth; arolium extending slightly beyond the tips of the simple terminal claws. Fourth leg with trochanter and femur stout, other podomeres fairly slender; color yellow; trochanter with weakly convex flexor margin, extensor margin arched, length 0.24–0.25 mm., about 1.5 times the depth; pars basalis subtriangular, flexor margin very weakly convex except near the basal third, a few setae on the flexor surface, length 0.215–0.224 mm., 1.5 to 1.6 times the depth; pars tibialis very stout, flexor margin weakly convex, extensor margin very convex in the basal portion, length 0.525–0.545 mm., 1.75 to 1.85 times the depth; entire femur 0.61–0.625 mm. long, about 0.295 mm. deep; tibia with extensor margin weakly convex, flexor margin more convex, deepest near the dis-

tal third, length 0.445–0.46 mm., depth 0.122–0.13 mm., length 3.4 to 3.75 times the depth; metatarsus with both margins almost straight, deepest at the proximal end, tactile seta on extensor surface about one-seventh of the length of the podomere from the basal margin, length 0.235–0.245 mm., length 3.15 to 3.35 times the depth; telotarsus with flexor margin virtually straight, extensor margin weakly convex, numerous setae including a few pseudotactile setae on the extensor surface, length 0.177–0.186 mm., depth 0.05 mm.; claws and arolium as in the first leg.

Genital complex: Posterior operculum with six submarginal setae and two setae approximate to each posterio-lateral corner of the genital aperture; anterior operculum with seven to nine setae on the anterior rim of the aperture and six to eight longer setae anterior to the opening on the face of the operculum.

FEMALE: General characteristics as in the male except larger; length between 2.4 and 3 mm. Carapace about 0.8 mm. long, greatest width usually about 0.6 mm.; posterior width 0.5–0.6 mm.; ocular width 0.46–0.48 mm. Abdomen as in the male.

Chelicera: Differing but little from the chelicera of the male except for the larger size and the nature of the galea; length of chelicera 0.25–0.26 mm., width of base 0.165–0.18 mm.; usually 23 plates in the serrula exterior; galea trifid as in the male but basal portion and the three rami much stouter; galeal seta much shorter than the galea; movable finger usually 0.23 mm. long, may be as short as 0.215 mm.

Palpus: Shape of the podomeres and other general features much as in the male; maxilla 0.43–0.47 mm. in length, width 0.24–0.275 mm.; trochanter length 0.385–0.4 mm., length 1.7 to 1.8 times the width; femur 0.65–0.68 mm. long, length 3.05 to 3.3 times the width; tibia 0.64–0.675 mm. long, width 0.255–0.275 mm., length 2.45 to 2.5 times the width; chela 1.1–1.2 mm. long, 0.4–0.45 mm. wide, length 2.65 to 2.8 times the width; length of hand without pedicle 0.53–0.61 mm.; depth of hand a little less than width; length of movable finger 0.61–0.66 mm. Marginal

teeth of chelal fingers, tactile setae, and nodi ramosi as in the male.

Legs: First leg like that of the male in general characteristics; trochanter 0.17–0.18 mm. long; pars basalis with length 0.305–0.315 mm., length equal to 2.65 to 2.85 times the depth; pars tibialis and tibia much as in the male; metatarsus 0.178–0.19 mm. in length, equal to 3.2 to 3.4 times the depth; telotarsus 0.14–0.155 mm. long, length 3.4 to 3.8 times the depth. Fourth leg essentially as in the male except femur conspicuously less stout and some podomeres considerably longer; trochanter 0.265–0.285 mm. long, length 1.4 to 1.6 times the depth; pars basalis as in the male; pars tibialis 0.545–0.575 mm. in length, depth 0.265–0.3 mm.; entire femur 0.64–0.67 mm. long, length 2.2 to 2.4 times the depth; tibia 0.46–0.48 mm. long, length 3.7 to 3.85 times the depth; metatarsus and telotarsus varying little from the condition in the male.

Genital complex (description based on allotype only): Simple; posterior operculum with six well-spaced submarginal setae in the central portion of the operculum; anterior operculum with six setae some distance from the female aperture; a pair of lateral and a median group of small cribiform plates.

TRITONYMPH: Much as in the adult but lighter color, less sclerotic, appendages somewhat stouter; body length 1.75 to 1.95 mm. Carapace with same general features as in the adult but smaller, eyes slightly farther removed from the anterior margin, fewer surface setae present, less granular on sides; length about 0.6 mm., width about three-fourths of the length, ocular width 0.34 mm. Abdomen smaller and with fewer setae than in the male; length about 1.2 mm., width one-half of the length.

Chelicera: Very similar to that of the female with the galea almost identical; number of plates in serrula exterior apparently a few less than in the adult; length of chelicera 0.17–0.19 mm.; width of base variable, between 0.12 and 0.135 mm.; length of movable finger 0.145–0.16 mm.

Palpus: General features as in the adult

except smaller and podomeres stouter; color light yellow except for slightly darker chelal hand and fingers; convexities and concavities often more marked than the same features of the adult; shape of chelal fingers from the side variable; palps virtually smooth. Measurements as follows: trochanter 0.26–0.28 mm. in length, length about 1.7 times the width; femur 0.42–0.45 mm. long, equal to 2.8 to 2.95 times the width; length of tibia 0.39–0.42 mm., almost 2.2 times the width; chela 0.72–0.78 mm. in length, 2.65 to 2.75 times the width; length of hand without pedicle 0.35–0.4 mm.; depth of hand subequal to the width; length of movable finger about 0.42 mm. Marginal teeth of each chelal finger much as in the adult but cusps much more weakly developed and teeth of proximal end of each row may be somewhat rudimentary, between 30 and 35 teeth in the row on each finger; lamina defensor present. Movable finger with three tactile setae; *t* about one-third of length of finger from tip, *st* about one-third of finger length from base; *b* close to finger base; *sb* wanting; nodus ramosus somewhat closer to *t* than to the finger tip. Fixed finger with *et* near the distal one-sixth of the finger length; *est* about three-fifths of finger length from tip; *it* at about the mid-point of the finger; *ist* a little proximal to level of *est*; *esb* and *eb* near finger base and separated by about one areolar diameter; *ib* slightly distal to the level of *esb*; *isb* wanting; nodus ramosus no more than two areolar diameters proximal to *et*.

Legs: Similar to the legs of the adult except fewer setae and podomeres shorter; some podomeres stouter. First leg with pars basalis about 0.2 mm. long, length 2.5 to 2.6 times the depth; pars tibialis 0.12–0.14 mm. in length, depth 0.073–0.081 mm., length 1.6 to 1.75 times the depth; tibia 0.17–0.19 mm. long, about 3 times as long as wide; metatarsus 0.115–0.13 mm. long, width between 0.043 and 0.047 mm.; telotarsus more evenly tapering from proximal to distal end than in the adult, length 0.114–0.118 mm., depth 0.035–0.04 mm., length 2.95 to 3.25 times the depth; terminal claws and arolium much as in the adult. Fourth leg as in the female except

podomeres smaller and fewer setae present; trochanter about 0.2 mm. long; pars basalis 0.155–0.17 mm. long; pars tibialis 0.36–0.495 mm. long, length about 1.9 times the depth; entire femur 0.43–0.48 mm. long, depth 0.186–0.216 mm., length 2.2 to 2.3 times the depth; tibia 0.315–0.345 mm. long, depth 0.085–0.1 mm.; metatarsus 0.165–0.18 mm. long, length 2.8 to 2.9 times the depth; telotarsus 0.14–0.16 mm. long, length 3.35 to 3.45 times the depth.

TYPE LOCALITY: The male holotype, female allotype, two male paratypes, three female paratypes, and two tritonymph paratypes in a collection made from Mona Island, West Indies, in February, 1914. Numerous individuals of *Novohorus suffusus*, new species, belong to the same collection.

Pachyolpium medium shows relationships with several of the larger species of the genus. It is very closely related to *P. crassichelatum* from which it differs, however, in several ways: the juncture of the proximal and external margins of the chelal hand is rounded and not angular; the inner margin of the tibia is not evenly convex; the finger is longer than the hand without the base and about equal to the length of the hand with the base. From *P. arubense* our form may be separated by the more slender chela, the longer chelal finger, and the less well-defined femoral pedicle. Separation from *P. aureum* is easily carried out on the basis of differences indicated in the key.

NEOPACHYOLPIUM, NEW GENUS

DIAGNOSIS: Cephalothorax longer than wide, without cross furrows; each central tergite with 12–16 marginal setae; cheliceral flagellum with two setae; subapical lobe of cheliceral finger spine-like, long, acute, directed distad and subparallel to the apical tooth; palps moderately stout; palpal femur with a dorsal sensory seta near the base; tactile seta *est* near midpoint of fixed finger; *et* and *it* distal to *est*; *ist* a short distance proximal to *est*; pars tibialis of first leg shorter than pars basalis, the joint between the two femoral parts

allowing free movement. A single species so far known.

GENOTYPE: *Neopachyolpium longum*, new species.

Neopachyolpium longum, new species

Figures 16–18

MALE: Body slender; abdomen and legs very light yellowish brown in color, carapace and palps light brown to reddish brown; length 2.3–2.5 mm. Carapace with weakly convex posterior margin bearing four to six submarginal setae separated from the posterior margin by an unpigmented band; lateral margin convex; anterior margin relatively short, with a shallow median concavity and a pair of submedial setae; dorsal face of carapace smooth, with numerous acuminate setae; anterior half of lateral surface with a few weakly developed granules, posterior half with net-like markings which extend to form a transverse band just anterior to the posterior marginal setae; two pairs of poorly developed eyes located not far from the anterior carapacial margin; length of carapace 0.63–0.7 mm.; greatest width near center and nearly three-fourths of the length; posterior width 0.37–0.43 mm.; ocular width about 0.35–0.37 mm. Abdomen slender; not very sclerotic; first tergite very wide, with net-like markings anterior to the six or eight marginal setae; second tergite with 10 setae and net-like markings as in the first tergite; other tergites virtually unsculptured; sternite 4 with weak net-like sculpturing and eight to 10 marginal setae in a row between the stigmatic plates, the seta of each end of the row close to the stigmatic plate; other sternites smooth and with a maximum number of about 14 setae; abdomen 1.75 mm. long; length about two and one-half times the width. Stigmatic plates asetaceous.

Chelicera: Base moderately stout; color light yellowish brown, smooth; five basal setae long and acuminate; flagellum of two blades, the anterior widened distally and with eight or nine acute denticulations confined to the distal third; the shorter flagellar seta spine-like with a length approximate to one-half the longer seta, apparently

without subterminal denticulations; length of chelicera 0.21–0.22 mm., width of base 0.13–0.14 mm. Fixed finger well curved, lamina exterior relatively narrow; apical tooth acute, no more sclerotic than rest of finger; six to eight retroconical teeth along the distal half of the inner margin and the inner surface of the apical tooth; serrula interior with the distal tooth spine-like, rest of teeth fused into a velum. Movable finger 0.2–0.21 mm. long; moderately slender, little curved; outer margin virtually straight except near the ends; inner margin with two or three rudimentary teeth in the distal third; subapical lobe long, acute, extending subparallel to the apical tooth; apical tooth slender, long, acute, nearly the same color as rest of finger; galeal seta a little shorter than the galea and inserted near the base of the subapical lobe; serrula exterior of 21–23 ligulate plates; galea with stout basal portion, a lateral ramus about three-fifths of the galea length from the base, and a bifurcation just distal to the lateral branch; the three rami simple, long, acute, and little curved.

Palpus: Moderately stout; usually reddish brown; partly granular; setae numerous. Maxilla with granules on lateral surface, ventral face smooth; apical process with one long apical and one long subapical seta, other setae at the base; length of maxilla 0.34–0.38 mm. Trochanter with inner margin flatly convex; outer margin very irregularly convex; inner surface smooth and with numerous acuminate setae, outer surface with a few short setae and granules at the antero-lateral corner; length about 0.34 mm., nearly twice the width. Femur with pedicle nearly as long as wide; inner margin with central portion evenly convex and with a weak concavity toward the distal end; outer margin very flatly convex; flexor surface with numerous well-developed granules, extensor surface smooth; dorsal tactile seta inserted about one-fourth of podomere length from the distal end; holotype 0.53 mm. long, 0.193 mm. wide; paratype 0.52 mm. long, 0.182 mm. wide. Tibia with inner surface granular; pedicle longer than wide; outer margin flatly convex in the basal three-

fourths, more convex beyond; inner margin bulging near the center, flatly convex proximal to the bulge, concave distal to the bulge; length 0.52–0.56 mm., width 0.225–0.245 mm., length about 2.3 times the width. Chela from the dorsad fairly stout; pedicle displaced toward the outer side; widest near the base; hand usually angular in outline; inner margin weakly convex in center; outer margin very weakly convex; inner surface with a few granules (sometimes virtually smooth) especially toward the finger base; hand and fingers with numerous acuminate setae; fingers gently curved, fairly stout at base; holotype with chela length 0.94 mm., width 0.36 mm., length 2.6 times the width; paratype with chela 0.88 mm. long, width 0.31 mm., length 2.85 times the width; hand length 0.44–0.465 mm.; length of movable finger 0.49–0.51 mm. From the side, chelal hand subrectangular; greatest depth of 0.325–0.34 mm.; pedicle displaced far toward the ventral side; ventral margin very weakly convex in basal part but virtually straight in the distal part, dorsal margin weakly convex; fixed finger basally stout, tapering gradually toward the tip; inner margin of fixed finger weakly convex, outer margin weakly convex to straight; movable finger with inner margin weakly concave, outer margin convex; movable finger more slender than fixed finger. Fixed finger with between 40 and 45 contiguous teeth, varying from small, conical, and symmetrical at the distal end of the row to much wider, flatter teeth with poorly developed cusps at the basal end of the row; teeth of movable finger similar in number and shape; nodus ramosus of movable finger distal to tactile seta *t* by about one-fourth of distance from *t* to finger tip; in fixed finger, nodus ramosus about as far proximal to tactile seta *et* as *et* is from the finger tip; lamina defensor on each finger. Movable finger with four tactile setae: *t* one-fourth of finger length or more from the tip of the finger; *st* somewhat farther from *t* than latter is from the finger tip; *sb* about one-fifth of finger length from base; *b* nearly midway between finger base and *sb*. Fixed finger with eight tactile setae: *et* about one-eighth or less of finger length

from tip; *est* just distal to midpoint of finger; *it* a little distal to *est*; *ist* somewhat proximal to the midpoint of the finger; *isb*, *esb*, and *eb* forming a row on the outer surface of the finger base; *esb* between two and three areolar diameters distal to *eb*, *isb* about the same distance distal to *esb*; *ib* sub dorsally located on nearly a level with *eb*.

Legs: First leg fairly slender, fourth leg stouter; smooth; yellow color; acuminate setae numerous especially on the distal podomere; terminal claws slender, curved, acute; arolium simple, extending but little beyond the tips of the terminal claws. First leg with trochanter subtriangular, inner margin convex, outer margin very short, length about 0.15 mm., depth about 0.12 mm.; pars basalis elongated, flexor margin weakly convex, extensor margin with a weak concavity near the center, widest near the distal end, length 0.27–0.285 mm., 3.1 times the depth; pars tibialis slightly less than two-thirds as long as the pars basalis and almost as deep, both margins weakly convex, length 0.17–0.18 mm., twice the depth; tibia with extensor margin straight to very weakly convex or concave, flexor margin evenly convex, deepest distal to the center, length 0.25–0.26 mm., 3.55 times the depth; metatarsus subcylindrical, setae numerous and heavy, length about 0.177 mm., depth 0.05–0.052 mm.; telotarsus with flexor margin almost straight, extensor margin distally convex, setae very numerous and heavy (some are spine-like), length 0.15 mm., depth about 0.042 mm. Fourth leg somewhat stouter than the first; trochanter with very weakly convex flexor margin, extensor margin highly arched, length about 0.24 mm., 1.5 times the depth; pars basalis with evenly convex flexor margin, a few setae on the flexor surface, length 0.175–0.19 mm., between 1.4 and 1.5 times the depth; pars tibialis stout, flexor margin evenly convex and continuous with the flexor margin of the pars basalis, extensor margin much more convex especially in the proximal portion, length 0.43–0.475 mm., about twice the depth; holotype with entire femur 0.56 mm. long, depth 0.24 mm.; paratype with entire femur 0.52 mm. long,

0.213 mm. deep; tibia with both margins convex, the flexor much more so than the extensor, deepest distal to the midpoint, very much narrowed at the proximal end, setae fairly numerous, length 0.4–0.425 mm., 3.7 to 3.8 times the depth; metatarsus with both margins very weakly convex, setae numerous, length 0.235–0.24 mm., depth 0.065–0.07 mm., length 3.4 to 3.55 times the depth; proximal tactile seta of metatarsus relatively short and located about one-sixth of the podomere length from the proximal end; telotarsus with straight flexor margin, setae numerous, three very long and stout setae on the extensor surface, length 0.17–0.175 mm., length 3.3 to 3.45 times the depth.

Genital complex: Posterior operculum with eight irregularly arranged and well-separated setae probably representing the marginal row, two pairs of smaller setae on the posterior rim of the aperture; about eight setae clustered together just anterior to the aperture with seven to nine widely spaced setae on the face of the anterior operculum.

FEMALE: In general like the male except longer; length of body 2.6–2.8 mm. Carapace almost identical in the two sexes except larger in the female; length 0.7–0.75 mm.; greatest width 0.55–0.6 mm.; posterior width 0.45–0.55 mm.; ocular width 0.42–0.45 mm. Abdomen stouter than in the male, averaging about 2 mm. long and slightly less than 1 mm. wide.

Chelicera: Very similar to that of the male except a somewhat larger size and slight differences in the galea; length of chelicera 0.24–0.25 mm., width of base 0.15–0.17 mm.; movable finger 0.215–0.23 mm. long; galea stouter than in the male, lateral ramus near the midpoint, bifurcation a little distal to the midpoint; the three galeal rami longer than in the male.

Palpus: Very much like the palpus of the male except larger; maxilla about 0.39 mm. long, length 1.7 to 1.8 times the width; trochanter about 0.39 mm. long, length 2.05 to 2.15 times the width; femur 0.59–0.605 mm. long, length 2.95 to 3.05 times the width; tibia equal in length to femur, length 2.35 to 2.45 times the width; chela 1–1.05 mm. long, width 0.37–0.39

mm., length 2.7 to 2.8 times the width; hand without pedicle about 0.55 mm. long; movable finger about 0.53 mm. long. From the side, the chelal hand with fingers, teeth, nodi ramosi, and tactile setae much as in the male.

Legs: Much like those of the male but slightly longer. First leg with trochanter 0.16–0.17 mm. long; pars basalis 0.305–0.315 mm. long, about 0.1 mm. deep; pars tibialis 0.195–0.2 mm. long, depth 0.095 mm.; tibia 0.275–0.285 mm. long, length 3.65 to 3.75 times the depth; metatarsus 0.185–0.2 mm. in length, depth 0.053–0.055 mm.; telotarsus 0.155 mm. long, 0.042 mm. deep. Fourth leg with trochanter about 0.27 mm. long, length about 1.8 times the depth; pars basalis 0.19–0.2 mm. long, 0.12–0.13 mm. deep; pars tibialis about 0.5 mm. long, length 2.15 to 2.2 times the depth; entire femur about 0.6 mm. long, depth 0.226–0.235 mm.; tibia 0.46–0.47 mm. long, length 3.85 to 4 times the depth; metatarsus 0.255–0.265 mm. in length, 3.6 to 3.7 times the depth; telotarsus 0.178–0.185 mm. long, depth 0.053–0.057 mm.

Genital complex: Posterior operculum with six well-spaced marginal setae; anterior operculum with six to eight very weak, short, irregularly placed setae anterior to the aperture; lateral cribiform plates of moderate size, median plates apparently represented by a cluster of possibly six or eight very small plates.

TRITONYMPH: Moderately slender; 2 to 2.3 mm. long; body except for chelal hand and fingers light yellow in color, little sclerotic, chelal hand and fingers slightly brownish. Carapace virtually without net-like surface markings and with only a few granules; length about 0.6 mm., greatest width anterior to the center and between 0.4–0.5 mm.; posterior width not much less than the greatest width; ocular width 0.32 mm. Abdomen much as in the adult except lighter color, more weakly sclerotic, fewer setae, and smaller; length 1.5–1.75 mm., length about twice the width.

Chelicera: Much like the adult in general outline but smaller in size and differing in some details. Anterior flagellar blade more slender; length of chelicera

0.18–0.19 mm., width of base 0.125–0.129 mm. Movable finger 0.17–0.18 mm. long; galea much as in the female; serrula exterior with about 18 or 19 ligulate plates.

Palpus: Similar in general characteristics to the male; yellow color with chelal finger slightly darker, less sclerotic, granules less numerous and weaker; podomeres smaller; maxilla 0.32 mm. long, length about 1.85 times the width; trochanter 0.285 mm. long, about 2.05 times the width; femur 0.45 mm. in length, length 2.9 to 3 times the width; tibia equal to femur in length, about 2.4 times longer than wide; chela from the dorsad much like that of the male except smaller, not so angular, and virtually smooth; chela length 0.77 mm., width 0.255–0.27 mm.; hand length 0.38–0.4 mm.; movable finger 0.395–0.405 mm. long. From the side, chela similar to that of the adult except smaller, basal margin much more rounded, and hand less angular; depth of hand 0.25 mm. Each finger with between 30 and 35 teeth, similar in shape to those of the adult; nodus ramosus of each finger placed much as in the adult. Movable finger with three tactile setae: *t* and *st* as in the adult; *b* about one-sixth of finger length from base; *sb* wanting. Seven tactile setae on fixed finger: *et*, *est*, *it*, and *ist* much as in the adult; *esb* and *eb* near finger base and separated by between two and three areolar diameters; *ib* on nearly a level with *eb*; *isb* missing.

Legs: General structure much as in the male except the podomeres are shorter and often stouter. First leg with trochanter about 0.13 mm. long, 0.1 mm. deep; pars basalis 0.23 mm. long, depth 0.08 mm.; pars tibialis 0.14–0.15 mm. in length, depth 0.076–0.08 mm.; tibia with extensor margin weakly concave, length 0.195 mm., depth 0.062–0.065 mm.; metatarsus with extensor margin weakly concave, flexor margin weakly convex, length 0.14 mm., depth 0.05–0.053 mm.; telotarsus 0.125 mm. or slightly less in length, about 0.04 mm. in depth. Fourth leg with trochanter about 0.2 mm. long, about 0.125 mm. deep; pars basalis with the distal two-thirds of the flexor margin very weakly convex, length 0.148–0.155 mm., length 1.45 times the depth; pars tibialis with

flexor margin very weakly convex, length 0.375 mm., depth about 0.175 mm.; entire femur 0.44–0.455 mm. long, length 2.55 to 2.6 times the depth; tibia with extensor margin almost straight, length 0.32–0.34 mm., about 3.7 times the depth; metatarsus about 0.195 mm. long, length 3.05 times the depth; telotarsus 0.135–0.14 mm. long, length 2.8 times the depth.

TYPE LOCALITY: The male holotype, one male paratype, the female allotype, the female paratype, and two tritonymph paratypes in collections made by Dr. A. H. Strickland from surface litter in a cacao estate at St. Augustine, Trinidad, British West Indies, between November, 1943, and February, 1944.

INDOLPIUM, NEW GENUS

DIAGNOSIS: Carapace longer than wide, four eyes; each central tergite with four marginal setae; subapical lobe of cheliceral finger simple; each palpal femur with two dorsal and well-separated tactile setae; fixed chelal finger with at least the tactile setae *it* and *et* on distal half of finger; with *est* near the midpoint of the finger, *it* much anterior to *est*; first leg with length of pars tibialis subequal to length of pars basalis; related to the genus *Xenolpium*; a single species reported from French Indo-China.

GENOTYPE: *Xenolpium funebrum* Redikortzev, 1938.

While the original species description given by Redikortzev for *Xenolpium funebrum* is somewhat meager and incomplete, it seems advisable to establish without further delay a new genus with *X. funebrum* as the type. Separation of the present genus from *Xenolpium* is indicated in the key. Unfortunately neither Redikortzev's description nor drawing indicates the position of the tactile setae of the chelal fingers or the nature of the subapical lobe of the cheliceral finger in the genotype. However, since Redikortzev assigned his individuals to the well-defined genus *Xenolpium*, it may be assumed that the position of the tactile setae of the chelal fingers and the nature of the subapical cheliceral lobe are identical in *Xenolpium* and *Indolpium*.

NOVOHORUS, NEW GENUS

DIAGNOSIS: Carapace a little longer than wide, with four eyes; central tergites with four marginal setae; femur with two long tactile setae, widely separated, with poorly developed areoles; tactile seta *it* of the fixed finger near the midpoint of the finger and slightly distal to the level of *est*, *ist* near base of finger and associated with the four basal setae; subapical lobe of the movable cheliceral finger divided; pars tibialis of the first leg slightly longer than the pars basalis.

GENOTYPE: *Novohorus suffuscus*, new species.

The new genus *Novohorus* is very closely related to the African genus *Horus*. The two genera may be separated easily by characteristics given in the key. As far as known, *Horus* is confined to Africa, and *Novohorus* is reported only from the West Indies.

Novohorus suffuscus, new species

Figures 19–26

MALE: Body with abdomen and legs yellowish brown, palps and carapace darker, often golden in color; body length 2.2–2.4 mm. Carapace with posterior margin straight or a little convex, one pair of setae removed from the posterior margin by a narrow unpigmented band; lateral margins well rounded; anterior margin relatively short, with a shallow median concavity dividing the margin into two weakly convex lobes; anterior margin with a pair of submedial setae and one seta at each rounded antero-lateral corner; face of carapace with extremely weak net-like markings on the posterior half; on the sides, carapace somewhat roughened, often with weak granules in the anterior half; eyes well developed, the anterior of each pair separated from the anterior carapacial margin by much less than the greatest diameter of the eye; anterior eye of each pair larger, often much larger, than the posterior eye; eyes of each pair little separated; surface setae sparse; length of carapace 0.64–0.72 mm., greatest width near center 0.54 mm.; posterior width 0.45–0.48 mm.; ocular width 0.37–0.38 mm. Abdomen elongate, suboval in out-

line, length 1.55–1.65 mm.; width in most individuals about twice the length; tergites smooth, increasingly sclerotic and darker in color from the anterior to the posterior part of the abdomen; the first tergite with a pair of submedial setae; the second tergite with one or two setae; anterior three or four sternites and the tenth show weakly sculptured net-like lines; setae of sternites weak, usually six in each central sternite; sternite 4 with a submedial pair and a single seta just medial to each stigma. Stigmatic plates asetaceous.

Chelicera: Moderately stout; five basal setae long and acuminate; flagellum of three smooth setae, the anteriormost one long, blade-like, and terminally acute; the center flagellar seta a little longer than one-half the length of the longest, the proximal seta shorter than one-half of the length of the longest; chelicera 0.195–0.21 mm. long, base 0.125–0.135 mm. wide. Fixed cheliceral finger evenly and gently curved; lamina exterior present; serrula interior with the distal plate spine-like, others more or less fused into a velum; apical tooth of finger dark brown, sclerotic; about six retroconical teeth along the inner surface of the apical tooth and the distal half of the finger, each of the second and third teeth from the distal end of the row has two transversely placed cusps. Movable finger 0.15–0.165 mm. long; exterior margin evenly convex, inner margin evenly concave; apical tooth stout, short, dark in color, very sclerotic; subapical lobe located very close to the apical tooth and divided into two or three cusps or lobes; galeal seta inserted on a level with the subapical lobe, length subequal to that of the galea; serrula exterior with 17 to 20 ligulate plates; galea stout, a little curved, ending in three short, subterminal rami.

Palpus: Fairly stout; golden color; surface mostly non-granulate. Maxilla fairly stout; each apical process with a long apical seta, two long subapical setae (one lateral, one medial), and one or more small basal setae; setae sparse; maxilla marked laterally with weak net-like sculpturing; length 0.36–0.38 mm., width 0.21–0.215 mm. Trochanter with outer margin beyond pedicle convex and with a sub-

lateral protuberance marked by a number of surface granulations; inner margin more weakly convex; a few long setae; length of trochanter 0.3–0.325 mm., length 1.65 to 1.8 times the width. Femur with pedicle wider than long and placed toward the inner side; inner margin convex in the basal two-thirds, slightly concave beyond; extensor margin convex, the central portion flattened; a few granules may be seen in relief along the convexity of the inner margin; two sensory setae, one within the basal fourth of the podomere and relatively short, the other much longer and placed usually between one-third and two-fifths of the podomere length from the distal end, the areoles of both setae relatively small; length of femur 0.485–0.545 mm., width 0.185–0.205 mm., length 2.5 to 2.65 times the width. Tibia virtually smooth; few long setae; pedicle about as long as wide; outer margin flatly convex; inner margin beyond pedicle evenly convex, in some individuals much flattened in the distal fourth; length equal to the length of the femur, width 0.2–0.235 mm., length 2.25 to 2.4 times the width. Chela from the dorsad with outer margin weakly convex; inner margin moderately convex especially toward the basal margin; pedicle near center of proximal margin of hand; setae not numerous, especially long near the hand base; hand fairly wide near finger base and slightly granular on the inner surface; fingers moderately slender, well curved; setae much more numerous on the fingers than on the hand; length of chela 0.85–0.92 mm., width 0.28–0.30 mm., length 2.85 to 3.05 times the width; hand without pedicle 0.415–0.46 mm. long, depth 0.26–0.29 mm.; movable finger longer than length of hand with pedicle, 0.47–0.49 mm. From the side, the chela is usually subrectangular in appearance; dorsal margin evenly and moderately convex; ventral margin very flatly convex; pedicle placed slightly toward the ventral side of the base; fixed finger with outer margin straight to very weakly convex; inner margin variable; movable finger with outer margin distinctly convex, inner margin at least weakly concave. Each finger with 30 to 35 teeth extending

along nearly the entire finger margin; teeth contiguous, varying from acute and slightly retroconical at the distal end of the row to much flattened at the proximal end; each finger with a weakly developed lamina defensor; nodi ramosi very poorly developed and difficult to observe; nodus ramosus of fixed finger somewhat nearer to the tactile seta *et* than to the finger tip, that of movable finger removed from the finger tip by about one-third of the distance from the finger tip to tactile seta *t*. Movable finger with four tactile setae: *t* slightly more than one-third of the finger length from the tip; *st* about one-third of finger length from the base; *sb* somewhat nearer *st* than the distal finger margin; *b* two or three areolar diameters proximal to *sb*. Fixed finger with *et* near the distal one-fifth of the finger; *it* at or just distal to the midpoint of the finger; *est* slightly proximal to the midpoint of the finger and about three areolar diameters proximal to the level of *it*; *eb* near base of finger, *esb* about one areolar diameter distal to *eb*, *isb* about two areolar diameters distal to *esb*; *ib* on nearly the same level as *eb*; *ist* nearly on the level of *isb* but on the inner rather than the outer surface of the finger.¹

Legs: Fairly stout; light in color; smooth; setae weak, poorly developed, sparse except on tarsal podomeres; tarsal claws simple; arolium undivided, extending for nearly one-half its length beyond the tarsal claws; legs show considerable variation. First leg with trochanter about as deep as long, length 0.105–0.11 mm.; pars basalis with convex flexor margin, outer margin little convex, length 0.155–0.18 mm., length 1.35 to 1.65 times the depth; pars tibialis equal to, or a little longer than, the pars basalis, both margins weakly and evenly convex, deepest near the center, length 0.16–0.185 mm., depth 0.11–0.115 mm.; tibia with extensor margin flatly convex, deepest in the distal fourth,

length 0.21–0.24 mm., depth 0.73–0.78 mm., length 2.8 to 3.15 times the depth; metatarsus subcylindrical, short and stout, both margins weakly convex to virtually straight, length 0.075–0.095 mm., depth 0.05–0.06 mm.; telotarsus with flexor margin straight to weakly convex, about 0.1 mm. long, length 2.2 to 2.35 times the depth. Fourth leg with trochanter about 0.19 mm. long, length 1.25 to 1.4 times the depth, flexor margin nearly straight, extensor margin arched and much convex; pars basalis with the proximal one-third of the flexor margin convex, length about 0.19 mm., 1.35 to 1.45 times the depth; pars tibialis with extensor margin more or less evenly convex and arched, flexor margin almost straight proximally but distally convex, length 0.4–0.45 mm., depth 0.24–0.255 mm., length 1.6 to 1.9 times the depth; entire femur 0.53–0.57 mm. long, 2.2 to 2.25 times the depth; tibia with flexor margin evenly convex, outer margin more flatly convex, greatest depth near the distal one-third, length 0.365–0.4 mm., length 2.8 to 3.1 times the depth; metatarsus subcylindrical, slightly narrowed distally, length 0.13–0.14 mm., 1.7 to 1.75 times the depth; long sensory seta of metatarsus located usually about one-sixth of the podomere length from the basal margin; telotarsus with two long setae distal to the center of the extensor surface, length 0.13–0.14 mm., depth 0.06–0.067 mm., length 2.1 to 2.25 times the depth.

Genital complex: Two pairs of setae submedial in position on the face of the posterior operculum and two setae on each postero-lateral corner of the rim of the genital aperture, numerous small slit-like lyrifissures just posterior to the genital aperture. Anterior operculum with a group of three (rarely two or four) setae just anterior to, and to each side of, the genital aperture.

FEMALE: General features as in the male except for larger size and stouter palps; body length 2.9–3.1 mm. Carapace with sides less roughened and granular than in the male; length 0.75–0.77 mm., width 0.61 mm.; posterior width 0.56 mm.; ocular width 0.43–0.46 mm.; otherwise as in the male. Abdomen as in the male;

¹ Considering the arrangement of the tactile setae in many genera of Olpiinae, it seems probable that in *Novohorus* *isb* has become through migration associated with *esb* and *eb* on the external face of the finger while *ist* has been retained on the inner surface of the finger in association with *ib*. This is contrary, however, to the condition indicated by Chamberlin (1931, fig. 37-F) for *Horus modestus* in which *ist* is shown associated with *esb* and *eb* on the external face of the finger.

length 2.15–2.35 mm., slightly more than twice the width.

Chelicera: Much as in the male; 0.21–0.22 mm. long, base 0.15–0.16 mm. wide; movable finger 0.17–0.18 mm. in length; galea larger with the rami longer and more conspicuous than in the male; galeal seta relatively much shorter than the galea.

Palpus: Much like that of the male except podomeres slightly longer and usually stouter; inner margin of chela typically more convex and swollen and hand wider than in the male; maxilla about 0.4 mm. long, length 1.7 times the width; trochanter 0.325–0.5 mm. long, width 0.2 mm.; femur 0.53–0.55 mm. long, width 0.22–0.235 mm., length 2.35 to 2.5 times the width; tibia nearly equal in length to the femur, width 0.245–0.265 mm., length 2.05 to 2.25 times the width; chela 0.975–0.98 mm. long, usually about 0.37 mm. wide with length usually 2.6 to 2.65 times the width (one paratype, probably atypical, with chela 0.32 mm. wide, length 3.04 times the width); chelal hand without pedicle 0.465–0.48 mm. long, chelal depth a little less than width and between 0.305 and 0.32 mm.; movable finger 0.51–0.545 mm. long. Teeth, tactile setae, and nodi ramosi of chelal fingers as in the male.

Legs: Like those of the male in general characteristics but a little larger. First leg: trochanter about 0.14 mm. long, 0.11–0.115 mm. deep; pars basalis about 0.183 mm. long, depth 0.117–0.125 mm.; pars tibialis 0.185–0.19 mm. long, 0.12–0.13 mm. deep, length about 1.5 times the depth; tibia 0.24–0.255 mm. long, 0.8–0.9 mm. deep, length 2.7 to 3.05 times the depth; metatarsus 0.085–0.1 mm., length 1.4 to 1.75 times the depth; telotarsus 0.108–0.114 mm., length 1.95 to 2.15 times the depth. Fourth leg much as in the male; trochanter 0.22–0.23 mm. long, length 1.35 to 1.5 times the depth; pars basalis 0.21–0.22 mm. long, length 1.4 to 1.5 times the depth; pars tibialis about 0.52 mm. long, depth 0.253–0.266 mm.; entire femur 0.615–0.64 mm. long, length 2.35 to 2.45 times the depth; tibia 0.4–0.41 mm. long, length 2.95 to 3.25 times the depth; metatarsus about 0.15 mm. long, 0.084–0.088 mm. deep, length 1.7 to 1.8 times the depth;

telotarsus 0.145–0.155 mm. long, depth 0.071–0.076 mm., length 1.9 to 2.15 times the depth.

Genital complex: Posterior operculum with four to six well-spaced setae, anterior operculum with the same number; cribiform plates of the median pair appear to be larger than those of the lateral pair.

TRITONYMPH: Less sclerotic, lighter in color, and with many pedal podomeres stouter than in the adult; body length of one tritonymph 2.1 mm., of the other 2.45 mm. Carapace smooth, length 0.56–0.58 mm., greatest width 0.39–0.43 mm., posterior width little less than the greatest width, ocular width 0.31–0.32 mm. Abdomen 1.55–1.9 mm. long, length at least twice the width.

Chelicera: Very similar to that of the adult; 0.17–0.18 mm. long, base 0.125 mm. wide; movable finger 0.135–0.14 mm. long; galea much as in the female with galeal seta relatively short; 15 to 17 plates in the serrula exterior.

Palpus: In general outline much like the adult; podomeres smaller and areoles of the femoral tactile setae relatively more conspicuous than in the adult; from the side, chelal fingers conspicuously curved. Actual lengths of podomeres almost identical in the two tritonymphs but widths and length:width ratios of some podomeres differ considerably; maxilla 0.3 mm. long, 0.19 mm. wide; trochanter about 0.25 mm. long, width about 0.146 mm.; femur 0.4–0.41 mm. long, widths in the two tritonymphs 0.155 mm. and 0.175 mm., length 2.58 and 2.37 times the width, respectively; tibia 0.385 mm. and 0.39 mm. long, width 0.183 mm. and 0.201 mm., respectively; chela about 0.74 mm. long, widths in two specimens 0.216 and 0.278 mm., lengths 3.32 and 2.67 times the width, respectively; depth of chela subequal to the hand width; hand without pedicle 0.35–0.36 mm. long; fingers slightly longer than hand without pedicle. Teeth of chelal fingers as in the adult except only 20 to 25 in number. Tactile setae of movable finger very similar to those of the adult except *t* is somewhat more proximal in position and either *sb* or *b* is wanting. Fixed finger with tactile setae

much as in the adult except *et* is placed a little more proximal, and *isb* is wanting.

Legs: Much as in the adult except podomeres shorter and often a little stouter. First leg with pars basalis 0.145 mm. long, length about 1.35 times the depth; pars tibialis equal in length to pars basalis, length about 1.35 times the depth; tibia 0.175–0.185 mm. long, length 2.5 to 2.6 times the depth; metatarsus 0.068 mm. in length, depth 0.054 mm.; telotarsus 0.093–0.098 mm., depth 0.05 mm. Fourth leg: trochanter of one paratype 0.155 mm. long and 0.13 mm. deep, of the other 0.175 mm. long and 0.125 mm. deep; pars basalis about 0.17 mm. long, length 1.4 times the depth; pars tibialis 0.38–0.395 mm. long, length about 1.85 times the depth; entire femur 0.465 mm. long, length 2.15 to 2.3 times the depth; tibia 0.29 mm. and 0.305 mm. long, 0.107 mm. and 0.118 mm. deep, respectively; metatarsus about 0.11 mm. long, length 1.45 and 1.55 times the depth; telotarsus 0.114 mm. and 0.12 mm. long, length 1.85 times the depth.

TYPE LOCALITY: The male holotype, three male paratypes, the female allotype, two female paratypes, and two tritonymphs in a collection made during the period of February 21 to 26, 1914, on Mona Island, West Indies.

LOCALITY RECORD: A single male in a collection bearing no date and made on Mona Island.

The relationship of *N. suffuscus* to *N. cinereus*, new species, is given under the description of the latter.

Novohorus cinereus, new species

Figures 27–29

MALE: Body, especially the abdomen, slender; legs and palps moderately stout; body longer than palps; abdomen and legs yellow in color, carapace and palps with a gray tinge; body length 1.85 mm. Carapace with two marginal setae separated from the weakly convex posterior margin by an unpigmented band; lateral margins weakly convex in the anterior half, nearly straight in the posterior half and marked by net-like lines; anterior margin with a weakly developed median concavity, a pair of sublateral setae, and a seta at each

anterio-lateral corner; surface of carapace non-granulate, setae sparse; the eyes of the anterior pair a little larger than those of the posterior pair, the anterior eyes separated from the anterior carapacial margin by about one-half of the longitudinal diameter of the eye, the eyes of each pair approximate, with a long seta originating in the narrow interocular space; carapace widest near the center; length 0.5 mm., width about three-fourths of the length; posterior width subequal to the greatest width; ocular width 0.26 mm. Abdomen slender, nearly 1.35 mm. long, length about 2.4 times the width; first three tergites each with a single pair of setae, others with two pairs; tergites very wide; sternites much like tergites but three pairs of setae in each central and posterior sternite; fourth sternite with one or two pairs of setae and, in addition, a seta just medial to each stigmatic plate; stigmatic plates asetaceous.

Chelicera: Moderately stout; silk gland ducts conspicuous in base and finger; the five basal setae long and acuminate; yellowish in color; flagellum of three simple blades much as in the preceding species; width of base 0.09 mm.; length of chelicera 0.15 mm. Fixed finger weakly curved; lamina exterior conspicuous; apical tooth poorly differentiated, little sclerotic, not darker in color than remainder of finger; concave surface of the apical tooth with two subconical denticles continuous with three larger and retroconical denticles arranged along less than the distal half of the finger margin; serrula interior with a spine-like distal plate, remainder of plates more or less fused into a velum. Movable finger 0.118 mm. long; external margin nearly straight, internal margin very weakly convex except at the base; apical tooth short, little sclerotic, light brownish in color at very tip; subapical lobe very near base of apical tooth and with the distal division larger than the basal; serrula exterior apparently of 16 plates; galeal seta shorter than the galea, located near the level of the base of the galea; galea relatively stout, with fairly straight basal portion, trifid a little distal to the midpoint;

rami of galea simple, little curved, terminally acute.

Palpus: Moderately stout; setae fairly numerous, relatively long; surface smooth except for a very few granules on the inner margin of the hand near the finger base. Maxilla smooth, with few setae; apical process with a long apical seta, two sub-apical setae, and one or two other setae near the base; length of maxilla 0.235 mm., width about 0.14 mm. Trochanter with both outer and inner margins distal to pedicle weakly convex; a few relatively short acuminate setae present; length 0.22 mm., width 0.125 mm. Femur with pedicle wider than long, nearly symmetrically placed; outer margin flatly convex; inner margin weakly convex in the basal half but very slightly concave to straight in the distal half; two long sensory setae on dorsal surface, one within the basal one-fourth of the podomere and the other about one-third of the podomere length from the distal end; length of femur 0.355 mm., width 0.134 mm. Tibia with heavy pedicle about as long as wide; outer margin flatly convex in the distal two-thirds, a little more convex beyond; inner margin convex; one large and two or three small slit-like lyrifissures on the dorsal side near the base; length 0.378 mm., width 0.155 mm. Chela from the dorsad with both margins weakly convex; chela not especially narrowed at finger base; pedicle near center of rounded proximal margin; fingers fairly stout and curved; two or perhaps more especially long pseudotactile setae near the base; length of chela 0.61 mm., width 0.2 mm.; hand length without pedicle 0.305 mm. Chela from the side subrectangular; dorsal margin flatly convex with a small nodule on the dorsal margin near the juncture of the hand and the fixed fingers; ventral margin almost straight; pedicle placed a little nearer the ventral than the dorsal margin; fixed finger fairly stout, outer margin convex, inner margin almost straight; movable finger a little more slender, inner margin virtually straight, outer margin weakly convex; depth of hand 0.195 mm., subequal to hand width; length of movable finger 0.3 mm., subequal to length of hand without pedicle.

About 30 contiguous marginal teeth on each finger; teeth small, conical, and acute at the distal end of the row but very wide, flattened, and acuspid at the proximal end; at level of tactile seta *et* 10 teeth cover between 0.05 and 0.055 mm. of the fixed finger margin, the proximal five teeth of the row of the fixed finger cover an equal area; nodus ramosus of fixed finger seems to be about midway between tactile seta *et* and the end of the finger, nodus ramosus of opposing finger about the same distance from the finger tip. Movable finger with four sensory setae: *t* about three-sevenths of the finger length from the tip; *st* midway between the base of the finger and *t*; *sb* about one areolar diameter toward the inner margin of the finger and slightly proximal to *st*; *b* midway between *st* and the finger base. Eight tactile setae of fixed finger as follows: *et* one-fourth or more of finger length from tip; *est* near the mid-point of the finger but showing much variation in position; *it* only a fractional part of an areolar diameter distal to the level of *est*; *esb* a little farther from *est* than the latter is from *et*; *eb* little more than one areolar diameter from *esb*; *ist* on inner face of finger and nearly on a level with *esb* or *eb*; *isb* on the dorsal surface of the finger and little basal to the level of *ist*; *ib* subdorsal in position and about two areolar diameters from *isb*.

Legs: Moderately stout; light yellow color; setae sparse except on tarsal podomeres; tarsal claws simple; arolium extending much beyond the tips of the claws. First leg with trochanter subtriangular, extensor margin extremely short, flexor margin weakly convex, length 0.092 mm., depth 0.083 mm.; pars basalis of femur with very weakly convex outer margin, inner margin a little more convex, deepest at the distal end, length 0.117 mm., depth 0.084 mm.; pars tibialis with both margins weakly convex, very deep throughout, length 0.133 mm., depth 0.09 mm.; tibia with inner margin weakly convex, outer margin virtually straight in the distal half, length 0.165 mm., depth 0.057 mm.; metatarsus subcylindrical, length 0.075 mm., depth 0.04 mm.; telotarsus with both margins weakly convex, length 0.084 mm.,

depth 0.036 mm. Fourth leg with trochanter stout, 0.135 mm. long, 0.112 mm. deep, flexor margin virtually straight, extensor margin highly arched; pars basalis subtriangular, flexor margin straight except at the basal end, length 0.125 mm., depth 0.095 mm.; pars tibialis with flexor margin straight and continuous with the margin of the pars basalis, extensor margin evenly convex, length 0.315 mm., depth 0.16 mm.; entire femur with a few setae on the flexor surface, length 0.38 mm., depth 0.16 mm.; tibia with both margins weakly convex, the flexor more so than the extensor, length 0.26 mm., depth 0.087 mm.; metatarsus subcylindrical, tactile seta long and inserted within the basal one-sixth of the podomere, length 0.1 mm., depth 0.054 mm.; telotarsus with both margins weakly convex, setae numerous, two long pseudotactile setae on the distal half of the extensor margin, length 0.117 mm., depth 0.044 mm.

Genital complex: Posterior operculum apparently with four well-spaced marginal setae; two pairs of setae on the posterior rim of the genital aperture and two groups of three setae each on the anterior rim of the aperture.

FEMALE: In general much like the male; length 2.2 mm. Carapace 0.53 mm. long, greatest width 0.41 mm., ocular width 0.295 mm. Abdomen about 1.7 mm. long, length 2.5 times the width; each of the first two tergites with a single pair of setae, other tergites with two pairs; sternites and stigmatic plates as in the opposite sex.

Chelicera: Almost identical with that of the male; width of base 0.095 mm.; length of chelicera 0.15 mm.; length of movable finger 0.13 mm.; external serrula of about 17 or 18 plates (position precludes exact count); galea relatively longer than in the male, trifid in the terminal one-third, rami more curved than in the male.

Palpus: Much stouter and somewhat darker than in the male; otherwise more or less similar. Maxilla 0.27 mm. long, length about 1.65 times the width, chaetotaxy of apical process as in the male; trochanter 0.23 mm. long, 0.13 mm. wide. Femur with dorsal setae well developed, the proximal one located in the basal one-fourth of the podomere, the distal one about two-

fifths of the podomere length from the distal margin; length 0.35 mm., width 0.155 mm. Tibia 0.38 mm. long, 0.175 mm. wide; both margins markedly convex, the outer more so near the center than toward the ends. Chela with outer margin flatly convex, the inner margin a little more convex; pedicle placed a little toward the outer side; length of chela 0.635 mm., width 0.232 mm.; hand length 0.33 mm. From the side, somewhat similar to the chela of the male; dorsal margin a little more convex; fixed finger with both margins weakly convex; movable finger much more curved than in the male, inner margin very concave; depth of hand 0.23 mm.; length of movable finger 0.32 mm. Marginal teeth (position prevents an exact count) of fingers much as in the male except apparently 35 or more on each finger; at the level of *et* 10 teeth cover approximately 0.06 mm. of the finger margin; *nodi ramosi* as in the male. Movable finger with *t* slightly distal to midpoint of finger; other tactile setae essentially as in the male. Fixed finger with most tactile setae placed as in the male except *isb* on the external surface of the finger about two areolar diameters distal to *esb*; *ist* a little proximal to the level of *isb* and on the inner face of the finger.

Legs: In general as in the male. First leg: pars basalis 0.129 mm. long, depth 0.089 mm.; pars tibialis 0.135 mm. long, depth 0.91 mm.; tibia length 0.17 mm., depth 0.061 mm.; metatarsus 0.069 mm. in length, depth 0.045 mm.; telotarsus 0.092 mm. long, 0.04 mm. deep. Fourth leg as in the male except podomeres a little larger and flexor margin of femur very weakly convex; trochanter 0.16 mm. long, 0.11 mm. deep; pars basalis 0.14 mm. long, 0.097 mm. deep; pars tibialis 0.335 mm. long, 0.163 mm. deep; entire femur 0.41 mm. long, 0.163 mm. deep; length of tibia 0.285 mm., depth 0.089 mm.; metatarsus 0.106 mm. long, 0.057 mm. deep; telotarsus 0.117 mm. in length, depth 0.05 mm.

Genital complex: Each operculum with four marginal or submarginal setae; cribriform plates of lateral pair moderately large; median cribriform plates represented

by what appears to be a relatively large mass of fused plates.

TRITONYMPH: General characteristics as in the male; body a little stouter, length 1.65 mm.; carapace 0.415 mm. long, both greatest width and posterior width 0.34 mm., ocular width 0.25 mm.; eyes and chaetotaxy as in the adult. Abdomen like that of the male except slightly stouter, length 1.65 mm., length about 2.2 times the width; tergites 1 and 2 with one pair of setae, others with two pairs.

Chelicera: In most respects like that of the adult but slightly smaller; width of base 0.08 mm.; length of chelicera 0.125 mm.; length of movable finger 0.1 mm.; galeal seta much shorter than galea; galea trifid in the distal one-third, rami well curved.

Palpus: With exception of the chela, much like the palpus of the female but podomeres stouter, color lighter, and fewer setae; granules on the inner surface of the hand at the finger base almost wanting. Maxilla with general features and apical process as in the adult, length 0.2 mm., about 1.5 times the width; trochanter 0.175 mm. long, width 0.105 mm.; femur fairly stout, outer margin flatly convex, inner margin markedly convex in the basal half, pedicle short and stout, tactile setae of dorsal surface much as in the female, length of femur 0.26 mm., width 0.115 mm.; tibia with base stouter than in the adult, both margins convex, length 0.275 mm., width about 0.13 mm.; chela very similar to that of the male, length 0.472 mm., width 0.168 mm., length of hand without pedicle 0.255 mm. In side view, chela chiefly as in the female, with inner margin of fixed finger convex and movable finger much curved; depth of chela 0.173 mm.; length of movable finger 0.235 mm. Teeth of chelal fingers similar to those of adult except fewer in number, about 25 on each finger. Movable finger with three tactile setae: *t* near the midpoint of the finger; *sb* (or *st*?) a little closer to *t* than to the

finger base; *st* (or *sb*?) wanting; *b* about midway between *sb* or *st* and the finger base. Fixed finger with seven tactile setae: *et* about one-third of the finger length from tip; *it* a little proximal to the midpoint of the finger and slightly distal to the level of *est* which is somewhat more than one-third of the finger length from the base; *esb* and *eb* located at the finger base on the external surface, separated by less than two areolar diameters; *ist* located near the finger base, slightly proximal to the level of *esb* and less than two areolar diameters distal to the level of *ib*; *ib* subdorsal in position at very base of finger; *isb* wanting.

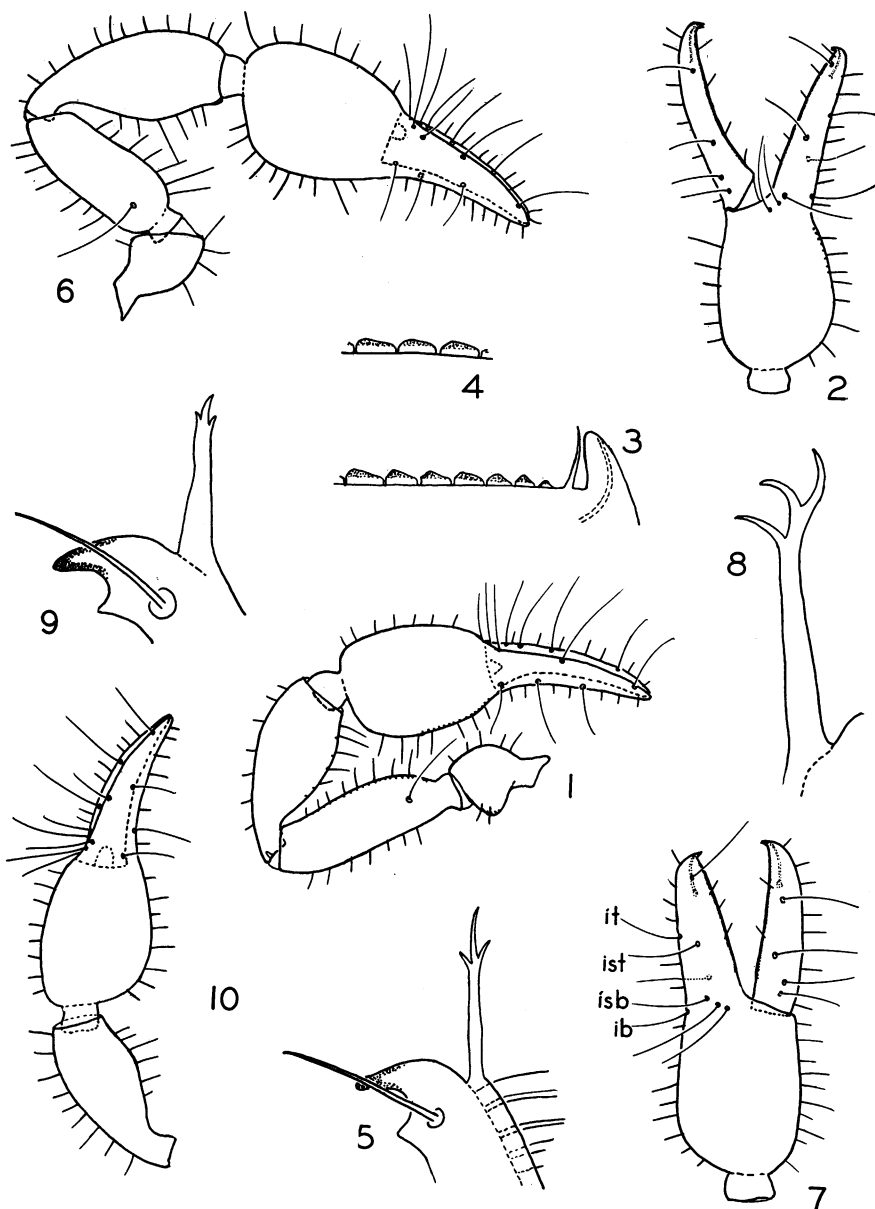
Legs: Much as in the adult except podomeres smaller and a little stouter. First leg with pars basalis 0.092 mm. in length, depth 0.066 mm.; pars tibialis 0.095 mm. long, depth 0.069 mm.; tibia with length 0.129 mm., 0.05 mm. long; metatarsus 0.055 mm. long, 0.039 mm. deep; telotarsus 0.076 mm., length 0.035 mm. Fourth leg much as in the adult except the flexor margin of the tibia is more convex; pars basalis 0.11 mm. long, 0.083 mm. deep; pars tibialis 0.239 mm. in length, depth 0.127 mm.; entire femur 0.304 mm. long; tibia 0.205 mm. long, 0.073 mm. deep; metatarsus 0.076 mm. long, depth 0.05 mm.; telotarsus 0.1 mm. in length, 0.044 mm. in depth.

TYPE LOCALITY: Three individuals, the male holotype, the female allotype, and a tritonymph paratype from a collection made by Dr. A. H. Strickland from surface litter on a cacao estate at St. Augustine, Trinidad, British West Indies, between November 16, 1943, and February 23, 1944. Several other species of pseudoscorpions, including the new species *Neopachyolpium longum* and two undescribed species of Heterosphyronida, in the same collection.

Novohorus cinereus may be separated easily from *N. suffuscus* through the much smaller palpal podomeres, the shorter movable finger, and the closely placed tactile setae *sb* and *st* in the former.

LITERATURE CITED

- BALZAN, L.
1890. Revisione dei Pseudoscorpioni del bacino dei Fiumi Paranà e Paraguay nell'America Meridionale. *Ann. Mus. Civ. Genova*, ser. 2, vol. 9, pp. 401-451, pls. 13-17.
1891. Voyage de M. E. Simon au Venezuela: Chernetes (Pseudoscorpiones). *Ann. Soc. Ent. France*, vol. 60, pp. 497-552, pls. 9-12.
- BEIER, MAX
1932. Pseudoscorpionidea. I. Subord. Chthoniinea et Neobisiinea. *Das Tierreich*, vol. 57, pp. i-xx, 1-258.
- CHAMBERLIN, J. C.
1930. A synoptic classification of the false scorpions or chela-spinners, with a report on a cosmopolitan collection of the same.—Part II. The Diplosphyronida (Arachnida-Chelonethida). *Ann. Mag. Nat. Hist.*, ser. 10, vol. 5, pp. 1-48, 585-620.
1931. The arachnid order Chelonethida. Stanford Univ. Publ., Univ. Ser., Biol. Sci., vol. 7, no. 1, pp. 1-284.
- HOFF, C. CLAYTON
1945. New Neotropical Diplosphyronida (Chelonethida). *Amer. Mus. Novitates*, no. 1288, pp. 1-17.
- REDIKORTZEV, V.
1938. Les pseudoscorpions de l'Indochine française recueillis par M. C. Dawydoff. *Mém. Mus. Natl. Hist. Nat.*, Paris, new ser., vol. 10, no. 2, pp. 69-116.
- ROEWER, C. FR.
1937. Chelonethi oder Pseudoskorpione. In Bronn, H. G., *Die Klassen und Ordnungen des Tierreichs*. Leipzig, vol. 5, div. 4, book 6, no. 2, pp. 161-320.



- Fig. 1. *Pachyolpium aureum*, new species, dorsal view of palpus, male paratype.
 Fig. 2. Idem, lateral view of chela, male holotype.
 Fig. 3. Idem, tip of fixed chelal finger to show marginal teeth, male holotype.
 Fig. 4. Idem, teeth of proximal portion of marginal row of fixed chelal finger, male holotype.
 Fig. 5. *Pachyolpium puerторicensis*, new species, end of movable finger of chelicera, male paratype.
 Fig. 6. Idem, dorsal view of palp, male holotype.
 Fig. 7. Idem, lateral view of chela, male holotype.
 Fig. 8. Idem, galea of female allotype, drawn to same scale as figure 5.
 Fig. 9. *Pachyolpium confundens*, new species, tip of movable finger of chelicera with serrula omitted, male holotype.
 Fig. 10. Idem, dorsal view of palpal tibia and chela, male holotype.

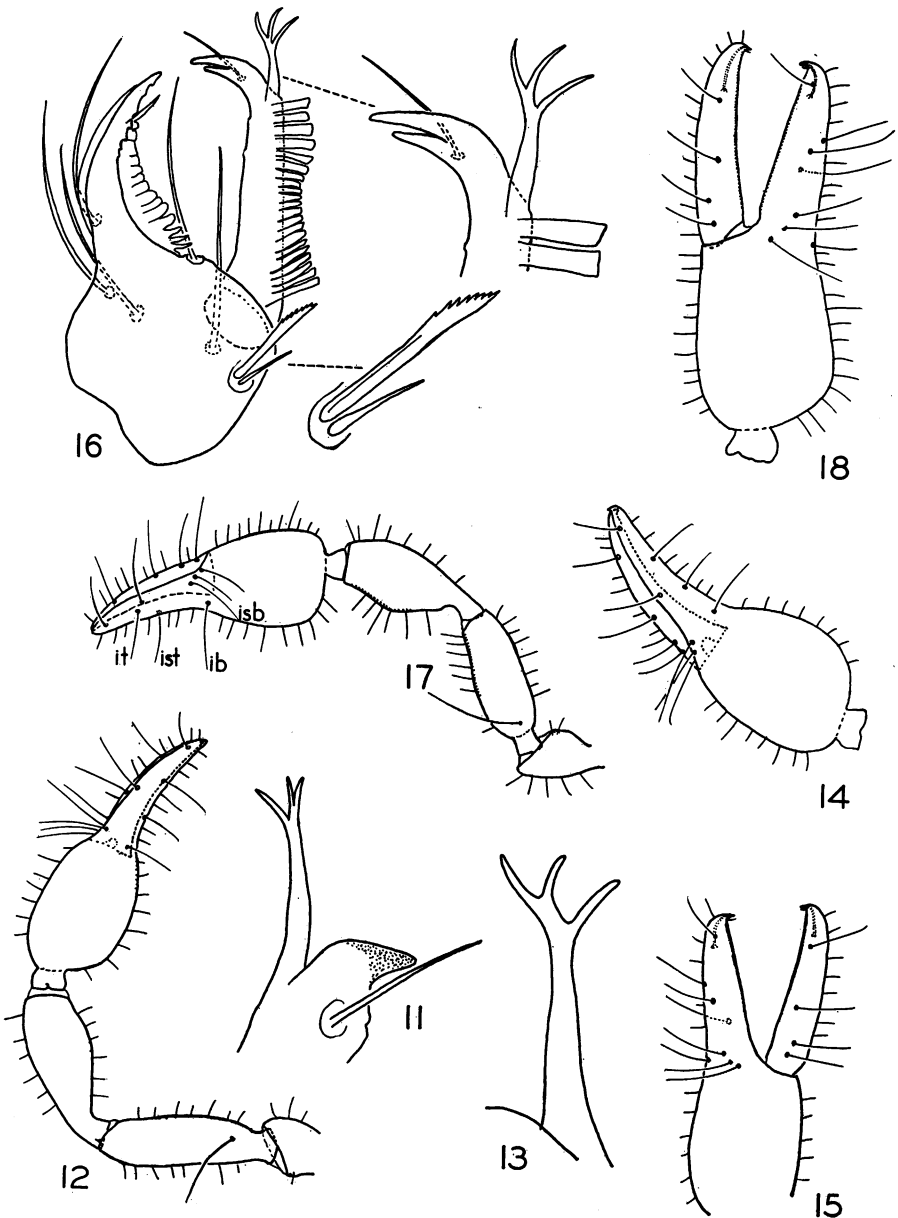


Fig. 11. *Pachyolpium medium*, new species, tip of movable finger of chelicera, serrula omitted, male holotype.

Fig. 12. Idem, dorsal view of palp, male holotype.

Fig. 13. Idem, galea of female paratype, drawn to same scale as figure 11.

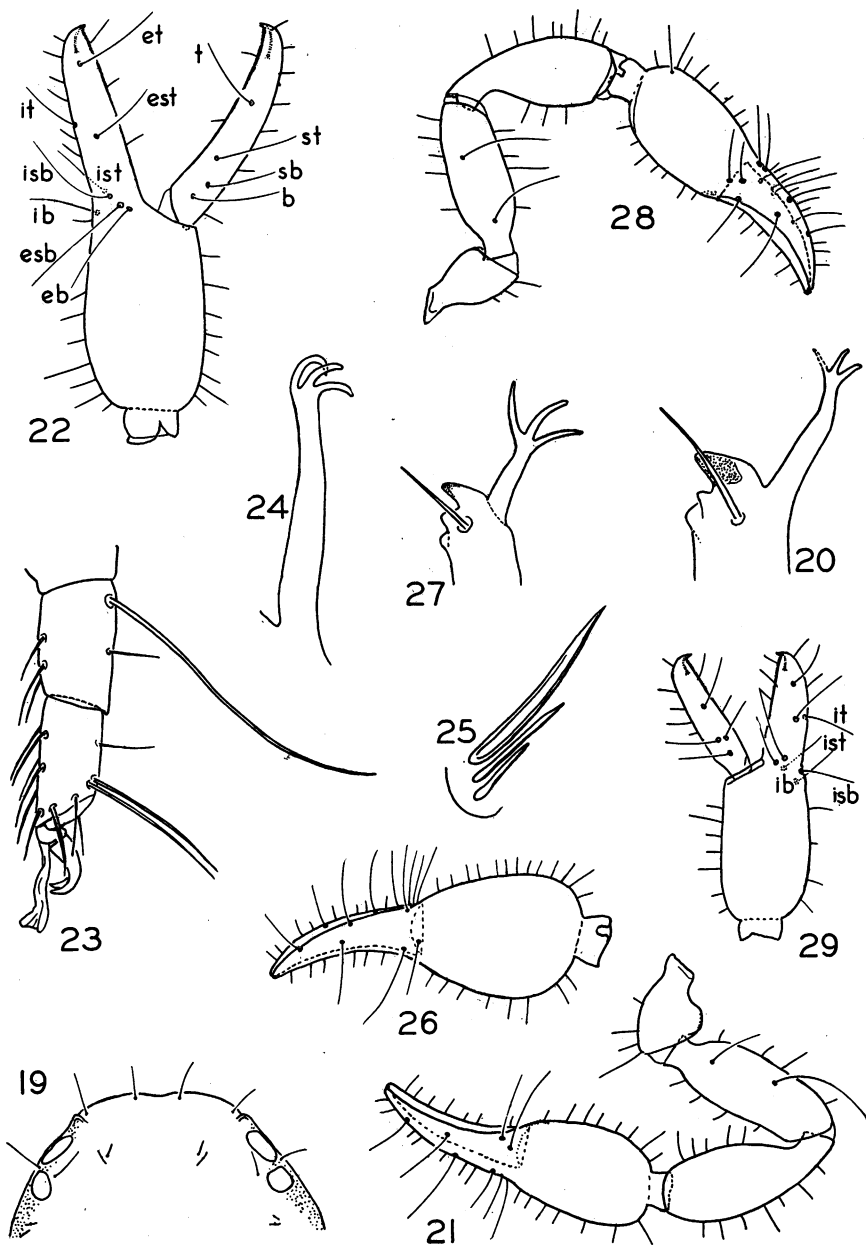
Fig. 14. Idem, dorsal view of chela, female allotype, drawn to same scale as figure 12.

Fig. 15. Idem, lateral view of chela, female allotype.

Fig. 16. *Neopachyolpium longum*, new species, chelicera and details of male holotype.

Fig. 17. Idem, dorsal view of palp, male holotype.

Fig. 18. Idem, lateral view of chela, male holotype.



- Fig. 19. *Novohorus suffuscus*, new species, anterior portion of carapace, male holotype.
 Fig. 20. Idem, end of movable finger of chelicera, male holotype; serrula exterior omitted.
 Fig. 21. Idem, dorsal view of palp of male holotype.
 Fig. 22. Idem, lateral view of chela of male holotype.
 Fig. 23. Idem, tarsal podomeres of fourth leg, male holotype.
 Fig. 24. Idem, galea of female allotype, drawn to same scale as figure 20.
 Fig. 25. Idem, flagellum of female paratype.
 Fig. 26. Idem, dorsal view of chela, female allotype, drawn to same scale as figure 21.
 Fig. 27. *Novohorus cinereus*, new species, tip of movable finger of chelicera, male holotype, serrula exterior omitted.
 Fig. 28. Idem, dorsal view of palp, male holotype.
 Fig. 29. Idem, lateral view of chela, male holotype.